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**How do owner managed businesses transform into
ambidextrous organisations?**

by

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**A thesis submitted for the degree of Doctor of Business
Administration**

**Warwick Business School, University of Warwick
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I dedicate this thesis to Sue, Natasha, Scott and Harry.

DECLARATION OF ORIGINALITY

I declare that this thesis “How do owner managed businesses transform into ambidextrous organisations?” is my own work and no part of the dissertation has been previously submitted to any other university for any degree, diploma or other qualification. Previously submitted work by the author in the form of reviews and conference presentations are drawn on for parts of this thesis. When reference is made to the work of others, the extent to which it has been used is indicated in the text and bibliography. Any errors or omissions within this thesis are the sole responsibility of the author.

Signature-

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ABSTRACT

Organisational ambidexterity research has traditionally focused on large firms. This research answers the call for longitudinal studies into how smaller owner managed businesses balance exploration and exploitation to transform themselves into an ambidextrous organisation. They have different characteristics such as resource availability, informal organisational structure and direct owner manager control, often with nebulous strategic orientation. Empirical research has tended to examine these specific categories and frameworks in isolation observing past behaviour or testing hypotheses.

This thesis takes a more holistic, dynamic and open approach via an action research case study that links three established ambidexterity frameworks to the practical implementation of predetermined interventions. This study benefits from the rare opportunity of the researcher also being operationally embedded, leading the design of the controlled action research interventions from theoretical frameworks. It observes a companywide transition to ambidexterity experiencing the dynamic impact of turbulence and complexity from pre-commencement analysis, initiation, conceptualisation, implementation and monitoring, over a three year time horizon.

This enabled real time, data rich findings and critical reflective analysis, which contrasts with the usual case study approach of observing past events outside of the researcher's control trying to match actual events to theory. The research is supplemented by data from independent interviews of other owner managed businesses to verify and triangulate findings.

The resultant contribution is the design of a practical ambidexterity toolkit template combining for the first time three established theoretical frameworks. This toolkit presents a new practical five stage ambidexterity pathway supported by sixteen questions developed from practical findings. The first stage is a pre-commencement stage, ensuring a strategy exists which is aligned to ambidexterity. The second stage helps choose the appropriate initiation charter. The third stage conceptualises a plan tailored to a firm's unique characteristics before implementing this plan as the fourth stage. The fifth monitoring stage

acknowledges the dynamic longitudinal aspects and how to measure and monitor progress over the implementation time horizon to efficiently optimise exploration and exploitation balance. The five stage process allows a practitioner to take this standardised toolkit template and tailor it via sixteen questions to design a bespoke ambidextrous pathway, grounded in theory, acknowledging a firm's unique characteristics and one size does not fit all.

LIST OF ABBREVIATIONS

WBS	Warwick Business School
SWOT	Strengths, Weaknesses, Opportunities and Threats
PESTEL	Political, Economic, Social, Technology, Environmental, Legal
SME	Small Medium Sized Enterprises
OMB	Owner Managed Businesses
NVivo	Qualitative Software Platform
TMT	Top Management Team
NPD	New Product Development
CEO	Chief Executive Officer
YoY	Year on Year
DBA	Doctor of Business Administration
Ph.D.	Doctor of Philosophy

Chapter 1 Introduction

“How do owner managed businesses transform into ambidextrous organisations?”

1.1 The Importance of the Ambidexterity Phenomenon

Ambidexterity is a balance between exploration and exploitation, organisations capable of exploiting their existing competencies whilst simultaneously exploring new opportunities. Firms undertaking exploration without corresponding exploitation risk incurring the expense of experimentation but without its upside benefits. Conversely, firms focused on exploitation may find themselves in a success trap, susceptible to future shocks unable to react and risk extinction. Optimising exploration and exploitation balance is a key factor to sustaining short and long term business performance. There are several reasons why the ambidexterity phenomenon remains of importance to scholars.

Firstly longevity, it commenced almost half a century ago in response to a firm’s challenge of managing competing goals (Duncan, 1976). It has since evolved and grown in importance as firms try to manage tensions and competing demands to balance exploration and exploitation in an increasingly dynamic, turbulent and complex business environment.

Secondly scope, which has expanded as ambidexterity research has moved into knowledge management, organisational design and strategic behaviour. Ambidexterity is an ambiguous state of balance, broadening and deepening our understanding, but also bringing with it some confusion (O’Reilly III and Tushman, 2013). It requires firms to design appropriate organisational platforms and operate in a disruptive environment (Emami-Langroodi, 2018) in order to balance the trade-off between short and long term exploitation and exploration.

Thirdly strategy, where a strong link has been established to ambidexterity and supplemented by reviews (Benner and Tushman, 2015), frameworks (Lavie, Stettner and Tushman 2010) and typologies (Simsek, Heavey and Veiga, 2009). Consequently, it has become embedded in several areas of strategy including how to undertake innovation (Christiansen, 2000; Lin, Mcdonough and Lin, 2013), strategic choice (Heracleous, Papachroni and Andriopoulos, 2013) and strategic renewal (Friesl, Garreau and Heracleous, 2019). These are important factors for owner managed businesses where strategic intent may be inconsistent with ambidexterity, for example, if a lifestyle or defender strategy is employed (Miles and Snow, 2003). The link to strategy has also shown how ambidexterity can improve performance (He and Wong, 2004; Simsek, Heavey and Veiga, 2009) as confirmed by hypothesis testing of balance optimisation (Uotila, Maula and Keil, 2009) and individual firm analysis (Heracleous, Wirtz and Johnston, 2004).

Fourthly owner managed businesses, whose unique characteristic are often acknowledged without providing any practical guidance as to how these can be addressed within a dynamic ambidexterity pathway. Research, especially holistic dynamic ambidexterity case studies, have often focussed on larger firms, neglecting smaller organisations. However, ambidexterity is important and relevant for owner managed businesses outgrowing existing informal structures (Hadjimanolis, 2000), no longer able to constantly multi-task (Chang, Hughes and Hotho, 2011), culturally different (Cacciotti and Ucbasaran, 2018) and resource constrained (Voss and Voss, 2013).

[1.2 Outstanding Ambidexterity Issues Addressed in this Research](#)

As far as this researcher is aware there is not a practical toolkit to help owner managed businesses analyse whether to attempt ambidexterity, and if appropriate assist them via a series of questions within a standard template to design their own bespoke ambidexterity pathway. The practitioner is searching for theoretical frameworks and mechanisms to navigate around obstacles transferring theory into workable solutions incorporating path

dependency and history. It requires a tailored solution which this thesis' toolkit attempts to provide as one size does not fit all.

Research acknowledges the impact of firm size, uniqueness, resources, history, path dependency and the impact of constant internal and external dynamic forces making it difficult to optimise balance via a generalised solution. These challenges have resulted in a call for practical dynamic research into how to link a business' strategy to ambidexterity which is multi-faceted in its consideration of events, causes and categories (Zimmermann, Raisch and Birkinshaw, 2015).

Often research has been static and struggled to consider short and long-term performance (Lavie, Stettner and Tushman, 2010). There is a paucity of longitudinal research over an extended period (Auh and Menguc, 2005) and surveys have often been limited in their consideration of all antecedents and their effect on ambidexterity (Venkatraman, Lee and Iyer, 2007). Recent research (Papachroni, 2013; Agyei, 2017) has taken a more dynamic approach, although these case studies analyse the actions of larger firms and their actors, as an external observer looking for evidence to understand how ambidexterity is achieved.

These differences leave a gap in understanding of how owner managed firms achieve ambidexterity (Chang, Hughes and Hotho, 2011; Kammerlander, Burger and Fust, 2015). These differences have been identified but often only consider individual categories such as family ownership (Gomez-Mejia, Makri and Kintana, 2010) and therefore are limited in their consideration of interdependences (Hughes, Filser and Harms, 2018) unable to provide a framework to solve the problem (Halevi, Carmeli and Brueller, 2015). This thesis based on a controlled action research experiment within a case study firm presented an ideal setting to overlay three theoretical frameworks with four practical interventions within a strategic plan. Furthermore, the interventions were controlled and monitored in real time by a researcher in a position of influence, being also the case study firm's CEO, to ensure no deviation from case study methodology. It provided a rare opportunity to align frameworks, theory, a pre-designed approach, practical implementation in a dynamic, not static experiment environment to answer research calls (Zimmermann, Raisch and Birkinshaw, 2015), and so narrow this research gap.

1.3 Research Undertaken

The goal of this research is to answer the question “How do owner managed firms transform into ambidextrous organisations?” The question is addressed via a single companywide longitudinal case study, undertaking a controlled action research experiment centred around four pre-determined exploration and exploitation interventions. The practical interventions were grounded within three established theoretical ambidexterity frameworks. As CEO, I was embedded in the firm and able to control and manage the ambidexterity pathway process throughout a three-year period. The case study firm findings were enhanced by the undertaking of third party interviews with other owner managed firms, independent of the case study firm, as to how they undertook exploration and exploitation activities. These interviews were undertaken over a similar time horizon and allowed dynamic findings and critical reflection from the case study to be examined by looking for how other owner managed firms had addressed similar problems enabling triangulation of findings.

The case study had a clear starting point of integrating an acquisition after a strategic review within a practical business environment subject to turbulence and complexity. The research then observed, analysed and actively managed how individuals addressed the challenges as they arose. This allowed practical actions to be verified and tested, including failures which act equally as cautionary tales to future users of the ambidexterity toolkit. The methodology was further strengthened as I was the researcher and CEO, therefore, elevated from the normal position of observer to designer of the interventions and subsequent revisions and actions. My combined role ensured experimental rigour by aligning each intervention to the theoretical framework from the start, reducing issues of causality or subjective opinion as to the relevance and premeditation of actions and relationship to outcomes.

Initially pilot interviews were undertaken to help design the case study interventions, semi-structured interview questions and appropriateness of the chosen theoretical frameworks. To improve the comparability of results the interviews focused on two domains; products and markets, chosen as they are fundamental to any firm’s strategy of making of a product and operating in a market. The interviews identified if, and how, firms linked their strategy

to exploitation and exploration goals and balance. This was to understand if ambidexterity was a specific objective, or if it was more an informal evolving event, driven by path dependency, antecedents, resources and reaction to market turbulence (Sinha, 2019). The interviews played an important role in ensuring research robustness providing examples as to how exploitation and exploration occurs. The triangulation of results from combining interviews and the case study helped to address the criticism often levied at a single case study of being too unique to generalise. The methodology to this research is shown in the following diagram.

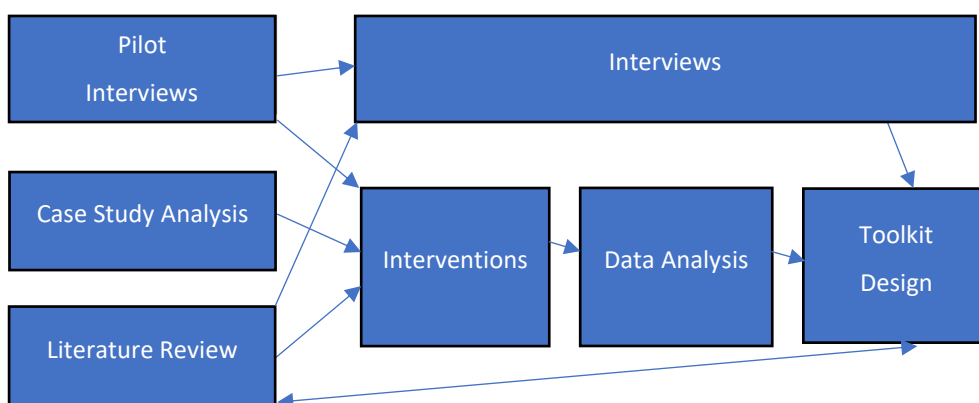


Table 1. 1 Research Methodology

The three theoretical frameworks were the Lavie *et al.* exploration and exploitation construct (Lavie, Stettner and Tushman, 2010) to establish the categories to consider. Then utilising the Zimmermann charter definition process (Zimmermann, Raisch and Birkinshaw, 2015) as to how to initiate ambidexterity. Finally the Raisch ambidexterity pathway (Raisch and Zimmermann, 2017) was applied. This dynamic approach provided a closed loop theoretically grounded approach, whilst allowing flexibility as to how these are practically implemented, not tied to the testing of any one conceptualisation, instead open minded and interested in observing how an organisation develops. The research took a holistic open view of the impact on the firm of the decisions made, processes implemented, events occurring and the actors' behaviour. To avoid becoming unstructured, opinion based with woolly results the practical interventions remained aligned to the three theoretical frameworks and cross reference events and outcomes to existing literature. The scope of the literature review was purposefully wide ranging to ensure a portfolio of research papers which identified specific characteristics and problems such as the role of top management, organisational structures, paradoxical capabilities and innovation. This wide ranging

literature review helped me to identify individual topics and cross reference them to observations in the case study so reducing subjectivity in my recommendations and limit the likelihood of missing any links to existing research. By following this approach the toolkit presents a more holistic approach by showing how individual research topics link and support a practical companywide ambidexterity pathway.

The case study examines how I designed four specific interventions and implemented them to transform the whole of the company into an ambidextrous organisation as a controlled action research experiment over a three-year time horizon. This contrasts with case studies reliant on retrospectively observing events trying to fit data to theory. Each intervention was individually designed with its own management and resources to develop explore and / or exploit objectives. To improve the generalisation and reduce the possibility of one-off findings, four companywide interventions were undertaken via individual business units to transition into an ambidextrous organisation. The four interventions were: Specification Sales division (20% of sales); R&D department; Business Improvements department and a Trade Sales division (80% of sales). The remaining business units: logistics; manufacturing; finance and support services were focused on day to day exploitation activities.

In this thesis I collected, analysed and validated data from the case study and third party interviews to design a practical ambidexterity framework to be used by practitioners to tailor their own bespoke solution to achieve an optimised and balanced exploration and exploitation position. I thus answer the call for a practical solution for owner managed businesses which up until now had not been forthcoming despite repeated calls (Hughes, Filser and Harms, 2018). The solution is found via my practical toolkit with specific questions, the answers to which allow a practitioner to design a bespoke ambidexterity pathway, grounded on three established frameworks to achieve short term profit and long term enterprise value.

The toolkit was developed during the case study time horizon. It was not available as a complete template on commencement, rather it was designed, tested and revised from the findings and outcomes analysed in real time over a three-year time period. This was seen with one intervention being revised once and another twice from data collection and analysis via a closed loop learning process, as the case study firm worked to get the process right.

1.4 Contribution to Research

1.4.1 Practical Toolkit

The contribution of this thesis is a practical ambidexterity toolkit template. It is based around three frameworks and questions designed to tease out the strategy, aid initiation and assist in conceptualisation, implementation and dynamic monitoring. Each toolkit question is derived from case study or interview findings, helping to address the sometimes wary or sceptical nature of practitioners when considering theoretical concepts. It answers the call from scholars for longitudinal studies as to how a firm becomes ambidextrous (Cantarello, Martini and Nosella, 2012), the application of alternative modes (Guttel and Knolechner, 2009) and role of individuals (Lin, Mcdonough and Lin, 2013). The toolkit template creates a unique practical route map of “how to transform into an ambidextrous organisation” consistent with strategic orientation. This increases the probability of achieving optimal balance and outcomes by understanding antecedent impact, choosing appropriate modes and assessing trade-offs. Additionally, the toolkit could be expanded by future research to develop specific quantitative and qualitative measurement to improve monitoring and project management.

1.4.2 Strategic Orientation and Ambidexterity

This thesis contributes by recommending consideration of strategic orientation as an antecedent, materially impacting upon other antecedents and the allocation of resources between exploitation and exploration. This strategic orientation analysis is a proposed additional first stage on the ambidexterity pathway (Raisch and Zimmermann, 2017) supported by three questions developed from the case study and interview findings.

There are three toolkit questions proposed. Firstly, a question to establish if there is a strategy, if not then the firm is probably not ready to consider an ambidexterity pathway. Secondly, if there is a strategy what is the vision to ensure exploit and explore objectives exist, does the firm have the necessary resources and paradoxical management capabilities. A practical recommendation is to utilise strategic orientation analysis (Miles and Snow, 2003). If a defender or follower strategy operates there is unlikely to be a benefit from trying to undertake and balance exploration and exploitation activities. Thirdly, if the first two questions indicate an appropriate strategic orientation then has consideration been given to the various forms of ambidexterity implementation across the whole business and analysis of the organisation's ambidextrous facets including time, mechanisms, organisational features and actors.

1.4.3 Initiation Process - Informal Contextual Mode

During the interviews exploit and explore activities were identified, but rarely as a formal ambidexterity process or as a consciously considered strategic process. Exploitation was often done on an informal basis led by owner managers when people and financial resources were available with no fixed time horizon. This thesis proposes such a modus operandi as a new pre-commencement positioning; *an informal contextual mode*.

This research contributes by recommending a pre-commencement analysis to see if it is operating in an informal contextual mode. As seen in the case study such an analysis improves the mandated or emergent charter decision when initiating ambidexterity. The degree of informality is likely to affect the size of the required shift in culture, structures and delegation. Therefore, if there is excessive informality this may point towards a mandated, top down charter definition process to act as a stepping stone for owner managers handing over responsibility to inexperienced managers traditionally used to taking orders and following instructions rather than developing them personally.

1.4.4 Monitoring

The monitoring process is a proposed contribution to the Raisch *et al.* pathway. It is important because research has identified the need to acknowledge the practical challenges faced after implementation commences often overlooked in theoretical research (Andon, Baxter and Chua, 2007). This monitoring stage is a separate final ambidexterity pathway stage recognising the constant research call to consider ambidexterity as a dynamic not static concept (Boumgarden, Nickerson and Zenger, 2012; Kang, Kang and Kim, 2017; Uotila, 2018). This stage incorporates three toolkit questions to allow dynamic monitoring and measurement. The first question asked is how success is defined and do practitioners have sufficient clarity of what is being monitored to recognise divergence and when outcomes have been achieved. Secondly, to understand how the ambidexterity journey is to be measured, acknowledging financial and non-financial factors. Thirdly, how ambidexterity outcomes can be separately monitored to ensure ambidexterity outcomes are mutually exclusive from other business events.

During the three-year study there was a constant need to review, reassess and reset as complexity and turbulence buffeted the journey toward becoming an ambidextrous organisation. This required project management for each intervention which contained pre-determined tasks, timelines and both intangible and tangible financial measurement (Appendix 4 Improvements plan 2 U, 2018). This may seem obvious to a seasoned project manager, but less so for an owner manager firm attempting ambidexterity for the first time. The case study findings highlighted the need for constant project management, measurement and regular evaluation to reframe the original implementation, notably as a result of turbulence and complexity.

1.4.5 Ambidexterity Pathway

This contribution is to propose the addition of two new stages to the Raisch *et al.* ambidextrous three-stage pathway. These are pre-commencement and monitoring stages. The pre-commencement is a new stage 1 and considers strategic orientation analysis and informal contextual mode identification. The monitoring stage is a new stage 5 which

acknowledges the dynamic nature of the pathway and considers how to monitor and measure progress once the intervention has started. These two additional stages acknowledge path dependency and the dynamic nature of the implementation process.

1.5 Structure of the Thesis

This Chapter 1 is an introduction outlining the ambidexterity phenomenon, its importance to business practice; current research, the research gap identified and the practical toolkit design contribution. Chapter 2 is a purposely broad examination of literature to ensure the consideration of the full scope of factors impacting on a firm undertaking a companywide transformation. Chapter 3 explains the methodology for both interviews and the case study addressing common pitfalls of qualitative research to provide assurance as to the robustness of the methodology adopted and so support the contribution. The case study methodology aims to follow generally accepted processes established (Eisenhardt and Graebner, 2007; Yin, 2018) over many years. The methodology also examines the researcher and CEO combined approach of the case study firm to understand its strengths and weaknesses. Chapter 4 examines the findings from semi-structured interviews which also helped to conceptualise the case study interventions and triangulate findings. This proved useful in understanding the approach to exploration and exploitation in relation to strategic orientation. The semi-structured interviews were completed throughout the three-year time horizon to allow a deep dive into themes or patterns occurring in the case study enabling independent confirmation. Chapter 5 looks at the case study action research data and analyses the findings over the three-year time horizon from the four interventions applied to the case study firm to move companywide to an ambidextrous organisation. The findings were collected from various data rich internal and external sources then analysed using the NVivo qualitative analysis software. The findings also looked to confirm theoretical research and prompt discussion on how it can be adapted for practical use. Chapter 6 discusses the findings from both the interviews and case study to look for themes and patterns which need to be addressed by relevant toolkit questions. In particular it looks to see how the Raisch *et al.* framework can be adapted by adding pertinent questions to each issue of strategic orientation, dynamic environments, turbulence and complexity. Chapter 7

explains the practical toolkit template and justifies the questions designed from the case study and interviews. In doing so it presents a practical tested approach for owner managed firms to take and tailor to design an ambidexterity pathway which recognises that all firms are different, and that boundary conditions and path dependency considerations vary. Chapter 8 is a practical summary of thesis' findings bringing together the expanded pathway, lessons learnt and pitfalls to be avoided for a firm attempting ambidexterity for the first time. It concludes with a recommended approach to initiations and mode selection in the light of turbulence and complexity coupled with managers' inexperience.

Chapter 2 Literature Review

2.1 Introduction

There are several reasons why the ambidexterity phenomenon remains of importance to scholars, not least longevity coupled with current day usage. The challenge of balancing exploration and exploitation commenced almost half a century ago in response to a firm's challenge of managing competing goals (Duncan, 1976). Research has evolved and grown in importance as firms try to manage tensions and competing demands to balance exploration and exploitation in an increasingly dynamic, turbulent and complex business environment. There has been an abundance of ambidexterity research since March's seminal paper (March, 1991), with a proliferation of papers examining ambidexterity and how firms balance exploration and exploitation capabilities to optimise performance. This is reflected in over 6000 Web of Science and 20,000 Google Scholar citations (Wilden, Hohberger and Devinney, 2018).

If practical empirical analysis is to provide a meaningful contribution it must have a clear theoretical lens through which any findings can be validated (Venkatraman, Lee and Iyer, 2007). This literature review should not be regarded as a repetition of existing knowledge, it is critical in defining the scope, identifying applicable practical frameworks to lay the foundations, context and positioning for the practical challenge of how to become an ambidextrous organisation. This thesis is towards a DBA, not a Ph.D., providing practical guidance based on existing research. The validation of the core constructs, concepts and context provides a theoretical underpinning to undertake a theoretically grounded practical action research experiment.

Prior research into the ambidexterity phenomena has reached a stage whereby adopting a bibliographical coupling approach (Kessler, 1963) five clusters can be identified outlining the extensive scope of ambidexterity. These five clusters are: organisational learning; international learning and collaborations; dynamic capabilities, absorptive capacity and

knowledge management; exploration and exploitation; and fifthly, technology and innovations (Wilden, Hohberger and Devinney, 2018). This thesis focuses on the fourth cluster of exploration and exploitation but is open and alert to the other four categories since they may help to explain how ambidexterity is achieved. Within this fourth cluster of exploration and exploitation, research has further sub-divided organisation ambidexterity conceptualisations for which there is no overall consensus (Agyei, 2017). These include: time (Tushman and O'Reilly III, 1996); mechanisms (Jansen, Tempelaar and van den Bosch, 2009; Fourne, Rosenbusch and Heyden, 2019); features (Gibson and Birkinshaw, 2004); implementation structures (Lavie and Rosenkopf, 2006; Raisch and Zimmermann, 2017) and paradoxical tensions (Papachroni, Heracleous and Paroutis, 2014).

The thesis objective of how a firm become an ambidextrous organisation is based around identifying relevant extant theoretical frameworks and applying them in a practical real environment as a controlled action research case study experiment. It will be grounded in three frameworks which provide an exploration and exploitation construct (Lavie, Stettner and Tushman, 2010), propose an initiation process (Zimmermann, Raisch and Birkinshaw, 2015) and offer a dynamic pathway to completion (Raisch and Zimmermann, 2017). In the absence of a theoretical framework any practical recommendations would rightly be challenged as merely anecdotal or interesting findings unable to be generalised with minimal practical contribution. This literature review is designed to provide such support to methodology, constructs and existing empirical research. This ensures the findings are not casual or informal relying entirely on personal testimony uncorroborated by existing research. Each of these frameworks is discussed in this literature review.

[2.2 Defining Ambidexterity - Exploration and Exploitation](#)

March perceived firms as adaptive systems and examined how an individual's organisational behaviour and learning were affected by exploration and exploitation activities. He defined exploitation as "refinement, choice, product efficiency, selection, implementation and execution" and exploration as "search, variation, risk taking, experimentation, play, flexibility, discovery and innovation" (March, 1991). Scholars have subsequently both

narrowed and expanded definitions narrowing to the scale and scope of knowledge (Levinthal and March, 1993), and expanding definitions to organisational design and strategy (O'Reilly III and Tushman, 2013). This paper uses the original March definition, subsequently refined to reflect ambidexterity as how firms manage the duality and tensions of exploring and exploiting (Raisch and Birkinshaw, 2008).

Firms undertaking only exploration ignoring exploitation risk incurring the expense of experimentation without a payback (Siggelkow and Rivkin, 2006). Conversely, firms focussed on only exploitation can find themselves in a competency trap, comfortable in the present but unable to compete in the future (Levinthal and March, 1993).

The necessity to explore and generate short term profits whilst exploring to remain competitive in the future is important as without it long term sustainable competitive advantage is difficult, reflected in only 0.1% of firms making it to 40 years old (O'Reilly III and Tushman, 2011). Underlying this research is an acceptance of the importance of ambidexterity as a link to an organisation's ability to implement strategy.

Research has moved into knowledge management, organisational design and strategic behaviour, increasing the understanding of outcomes, antecedents, moderators and structures of ambidexterity. The literature review has been able to give practical guidance to the case study design and in return validated by case study findings in several areas including the initiation of ambidexterity prompted by firms outgrowing owner managers (Hadjimanolis, 2000), duality and dualism (Papachroni, Heracleous and Paroutis, 2014), cognitive and paradoxical ability (Venugopal, Krishnan and Kumar, 2018), uniqueness of owner managed firms (Veider and Matzler, 2015; Cacciotti and Ucbasaran, 2018; Hughes, Filser and Harms, 2018), absorptive capacity (Broersma, Gils Van and Grip De, 2016), complexity and dynamic environments (Verreyne, Meyer and Liesch, 2016) and leadership (Kammerlander, Burger and Fust, 2015; Venugopal, Krishnan and Kumar, 2018, 2019). Finally, as one of this researcher's core reasons for undertaking research specifically into owner managed businesses is literature has confirmed size and ownership does matter and affects the ability to perform certain actions (Lavie and Rosenkopf, 2006; Chang and Hughes, 2012; Cacciotti and Ucbasaran, 2018). How little most owner managed firms know about ambidexterity theory was confirmed in pilot interviews. The literature review is an essential

part of the validation process to ensure a link of key academic concepts to the proposed practical research as set out in the methodology section.

The empirical work that has followed the theoretical literature propositions, has usually been via surveys and case studies examining specific environments, performances, relationships, frameworks and modes of operation. Several attempts have been made to consolidate this research including review papers and publications of special journal issues (Lavie, Stettner and Tushman, 2010; Birkinshaw and Gupta, 2013; Benner and Tushman, 2015; Koryak, Lockett and Hayton, 2018; Wilden, Hohberger and Devinney, 2018). The scope of typologies and domains linked to ambidexterity and the competencies to exploit and explore to achieve sustainable competitive advantage can be summarised in the table below.

Domain	Reference	Exploration	Exploitation
Market	<ul style="list-style-type: none"> • (He and Wong, 2004)(Cao, Simsek and Zhang, 2010), • (Voss and Voss, 2013), • (Judge and Blocker, 2008). 	New markets, channels. Customer acquisition. Vertical integration.	Current markets, geographical expansion Greater customer spend / frequency
Product	<ul style="list-style-type: none"> • (Voss and Voss, 2013), • (Adler, Goldoftas and Levine, 1999). 	NPD, designs, technology, production systems.	Increasing customer usage of existing product range.
People	<ul style="list-style-type: none"> • (Jansen, Tempelaar and van den Bosch, 2009), • (Andriopoulos and Lewis, 2008), • (Lewin, Long and Carroll, 1999), • (Posch and Garaus, 2020) 	Entrepreneurial Innovation orientation. Risk- taking. Prospectors.	Experienced. consistency. Fixed skill set. Process focus. Defender

Domain	Reference	Exploration	Exploitation
Internal environment	<ul style="list-style-type: none"> (Gibson and Birkinshaw, 2004) 	Vision, adaptability, flexibility, alignment, experimentation.	Efficiency, execution, refinement targets
Time frame	<ul style="list-style-type: none"> (Auh and Menguc, 2005), (Looy, Martens and Debackere, 2005). 	Unspecified longer extending time frames.	Measurable Short-term benefit.
Change	<ul style="list-style-type: none"> (Tushman and O'Reilly III, 1996), (Agyei, 2017). 	Revolution. unplanned. disruptive management.	Evolution. Rules based, consistent. Slower. Planned.
Innovation	<ul style="list-style-type: none"> (Andriopoulos and Lewis, 2008), (Christiansen, 2000) 	Radical. Proactive. Disruption.	Incremental. Reactive.
Core Competency	<ul style="list-style-type: none"> (Lubatkin, Simsek and Veiga, 2006), (Mom, Bosch Van Den and Volberda, 2007). 	Paradoxically skilled management. Flexible, agile. Depart from / broaden existing knowledge.	Process discipline. Existing knowledge. Exploitation. Structured change. Efficiency.

Table 2. 1 Ambidextrous Domains

This paper's focus is not on definitions or outcomes, but on understanding how firms manage the conflicting challenges of efficiency and flexibility (Adler, Goldoftas and Levine, 1999) and evolution versus revolution (Tushman and O'Reilly III, 1996). However, as patterns or practical contributions are found consideration is given to the above domains to understand their impact on the firm's journey to becoming an ambidextrous organisation. These organisational ambidexterity conceptualisations are not mutually exclusive and the same literature often identifies these sub categories as overlapping and not either / or choices (Smith, Lewis and Tushman, 2016). This research is focused on how growing owner managed businesses simultaneously explore and exploit. This thesis utilises specific frameworks to provide structure to avoid an anecdotal summaries (Atkinson and Delamont, 2005) not being tied to the testing of any one conceptualisation or methodology and is open minded and

interested in observing how an organisation develops its own practical pathway to ambidexterity.

The empirical work analysing outcomes in several environments confirms findings as generally positive (O'Reilly III and Tushman, 2013). Longitudinal studies have shown a positive relationship and provided consensus on the performance benefits of simultaneously exploring and exploiting (He and Wong, 2004; Simsek, Heavey and Veiga, 2009; Uotila, Maula and Keil, 2009). Therefore, the ability to optimise exploration and exploitation balance is critical to long term sustainable business performance. Other scholars suggest a more complex mathematical relationship whereby an inverted "U" shape exists between ambidexterity where performance peaks and tails off past an equilibrium point (Uotila, Maula and Keil, 2009). Hence the need to balance exploration and exploitation for long term survival (Hill and Birkinshaw, 2014).

Subjective measures also support positive outcomes in functional areas and domains including: knowledge management (Bierly and Daly, 2007); top management teams (Cao, Simsek and Zhang, 2010); and stretch and supportive systems (Gibson and Birkinshaw, 2004). Similarly objective measures on cross functional ambidexterity give positive outcomes (Voss and Voss, 2013). Therefore, it is important to note boundary conditions and environments do influence outcomes and becoming ambidextrous per se is no guarantee of performance (Junni, Sarala and Taras, 2013).

Other path dependent factors influencing outcomes are turbulence and complexity in the business environment (Uotila, 2018). A plethora of research exists focused on internal factors, such as processes, structures and managerial competencies that influence how a firm behaves ambidextrously (Adler, Goldoftas and Levine, 1999; Benner and Tushman, 2015). The impact on an organisation of its environment and path dependency are widely acknowledged (Aldrich, 2002; Papachroni, Heracleous and Paroutis, 2014; Benner and Tushman, 2015; Koryak, Lockett and Hayton, 2018). They are a key driver in actual practical decisions notably turbulence (Siggelkow and Rivkin, 2006) and complexity (Levinthal, 1997). In a dynamic environment, the organisation must increase its exploration efforts when incremental, exploitative adaptation is insufficient to keep pace with the changing environment (March, 1991). Thus, environmental turbulence increases the need for

exploration and radical change at the same time as a firm may find its resources constrained. Additionally, the joint impact of both turbulence and complexity can influence the exploration and exploitation balance (Levinthal, 1997). It is acknowledged there are few studies that examine which model better describes the actual change patterns observed in organisations and even then the results are inconsistent (Venkatraman, Lee and Iyer, 2007). By looking at internal processes and capabilities and the impact of turbulence and complexity this research can provide practical recommendations to some of the factors raised in this literature review for inclusions in this thesis' ambidexterity toolkit template. In doing so it addresses the need for more dynamic longitudinal analysis (Auh and Menguc, 2005). This research has been undertaken on the premise that extant literature confirms exploration and exploitation together enhances a performance (He and Wong, 2004). If it did not, the justification for achieving ambidexterity would be questionable.

2.3 Owner Managed Businesses

Ambidexterity research often implicitly assumes a profit maximising strategy. For owner managers their business objectives may be focused on lifestyle, short term survival or exit (Curran, Stanworth and Wadkins, 1986). In such circumstances ambidexterity may be inappropriate or at least less beneficial to smaller firms (Chang, Chen and Chi, 2014). In owner managed firms it should not be assumed a formal documented and measured strategy exists (Aragón and Sánchez, 2005; Veider and Matzler, 2016). Before attempting to identify how firms achieve ambidexterity, the existence of a valid strategic orientation should be established and confirmed as with other antecedents. Owner managed businesses often do consider how and when to explore and exploit, but less so the degree of balance (Chang, Hughes and Hotho, 2011; Moon and Huh, 2011; Chang and Hughes, 2012; Hughes, Filser and Harms, 2018). These actions are often not predetermined, often informal as to how to manage tensions, contradictions, innovations and trade-offs than in larger firms (Andriopoulos and Lewis, 2009).

Whilst research has acknowledged differences in how owner managed businesses achieve ambidexterity, many findings are from large organisations where generalisation is assumed (Hughes, Filser and Harms, 2018). Proposed solutions have a bias towards large often multi-

unit organisations with only a small number of specific works relating to owner managed businesses (Lubatkin, Simsek and Veiga, 2006). Practical research has left a space for a dynamic holistic analysis of what is the practical pathway as to owner managed businesses achieve ambidexterity for the first time. Specifically, how ambidexterity is initiated, what role path dependency plays and the unique processes, boundaries, modes and antecedents. Larger owner managed firms have tangible and intangible, internal and external differences resulting in generalised concepts being ineffective or sub optimal due to the uniqueness of the owner managed business (Ebben and Johnson, 2005; Cao, Simsek and Zhang, 2010).

All firms experience similar competitive pressures to combine both exploration and exploitation (Lubatkin, Simsek and Veiga, 2006; Chang and Hughes, 2012), but smaller firms have a significant resource disadvantage (Rothaermel and Alexandre, 2009; Voss and Voss, 2013). This resource disadvantage reduces absorptive capacity and the ability to access experienced managers or invest in learning (Broersma, Gils Van and Grip De, 2016). There has been numerous ambidexterity research papers on owner managed firms, which have highlighted significantly different ambidexterity challenges from large multi-unit organisations (Veider and Matzler, 2016). These areas of difference include: strategic orientation (Yanes-Estévez, García-Pérez and Oreja-Rodríguez, 2018); management (Clercq, Thongpapanl and Dimov, 2014); knowledge management (Tan and Liu, 2014); knowledge strategies (Bierly and Daly, 2007); risk (Berrone, Cruz and Gomez-Mejia, 2012); organisational structures (Chang and Hughes, 2012; Cacciotti and Ucbasaran, 2018) and leadership (Lubatkin, Simsek and Veiga, 2006). These differences have been identified without providing a framework to solve the problem (Gomez-Mejia, Makri and Kintana, 2010; Chang and Hughes, 2012; Halevi, Carmeli and Brueller, 2015).

When owner managed businesses attempt to manage exploitation and exploration goals they often face organisational paradoxes (Huy, 2002) and the tensions of multiple goals (Sillince, Jarzabkowski and Shaw, 2012). Furthermore, when differences are examined, they often only considered one specific element or functional area such as family ownership (Gomez-Mejia, Makri and Kintana, 2010) and so are limited in consideration of the interdependences which exist (Hughes, Filser and Harms, 2018). This creates complexity of dual goals, or “dualism”, represented as an amalgam of paradoxes, dilemmas dialectics and competing goals and values (Graetz and Smith, 2008). These have traditionally been solved

by separating the competing paradoxical goals as distinct processes (Papachroni, 2013). Other studies have suggested combining these goals (“duality”) rather than separating (“dualism”) the often competing objectives (Farjoun, 2010). One proposal as to how a firm can resolve these tensions is by having the dynamic paradoxical management capabilities to balance exploration and exploitation objectives (Papachroni and Heracleous, 2020). This is examined in the case study interventions which consider both options within contextual and separation modes within the Lavie *et al.* construct.

There is increasing practical case study research emerging, but mainly of larger organisations as to how to transition to ambidexterity (Papachroni, 2013). Alternatively the research is sometimes only of a specific category such as change management (Agyei, 2017). Research remains scarce on the development of a holistic practical transitional process for smaller owner managed firms (Voss and Voss, 2013). Furthermore, these case studies have to follow the traditional route of the embedded, often temporal researcher observing events outside of their control. This thesis has the added benefit, rare in case studies, whereby the events are preordained by the fact I was the researcher and also the leader of the action research controlled interventions.

[2.4 Exploration and Exploitation - The First Framework](#)

As noted in the introduction to this chapter it is the intention to utilise three extant theoretical frameworks. The first of which is a theoretical exploration and exploitation construct required from which practical qualitative research can be performed. Since March’s seminal work frameworks have been proposed via a combination of research papers, symposiums and special conferences attempting to bring together the findings as to what and how antecedents influence ambidexterity, its balance, modes and outcomes (Mom, Bosch, van den and Volberda, 2009; Lavie, Stettner and Tushman, 2010; Benner and Tushman, 2015).

The goal of this research is to provide firms with a practical pathway as to how to attempt ambidexterity to bring together into one practical toolkit, solutions which are supported by

clear theoretical foundations. This thesis proposes to use the exploration and exploitation framework of Lavie *et al.* Whilst nearly a decade old and new research has added or extended knowledge, its core construct remains robust insofar as providing the basic categories still being examined today. It has stood the test of time and as such provides an accepted theoretical basis for practical analysis. The Lavie *et al.* construct is designed with the following categories: antecedents; resources; modes; balance; and trade-offs. It proposes antecedent sub categories: environmental; management and organisational. For a firm's mode of balance there are four categories: contextual (no separation); organisational separation; temporal separation and domain separation. In the following sections these along with resources, trade-offs and balance are examined and enhanced by consideration of subsequent more recent research.

2.4.1 Antecedents

Environmental antecedents are a key influence on any firm's strategy (Porter, 1983). Dynamism, unpredictability, time, competition and appropriability regime directly influence ambidexterity. It is important to understand each of these and their differing effects on the transition.

Dynamism is the degree of change in markets, products and technology (Dess and Beard, 1984). If the change is material and rapid then dynamism has the ability to render products obsolete and therefore business models cannot survive (Jansen, Bosch, van den and Volberda, 2005). Such dynamism may require the allocation of more resources to exploration (Lant and Mezias, 1992). Larger firms may find it easier to source external resources from similar partners (Beckman, Haunschild and Phillips, 2004). A lack of practical examples in real environmental conditions is noted as an area for further research (Davis, Eisenhardt and Bingham, 2009). This paper's case study introduces actual pre-planned events to be monitored over time and examine environmental disruptions such as Brexit, as well as significant competitor changes.

Exogenous shocks provide surprising and unexpected impact from both dynamic or non-dynamic environments, either way it is a shock (Meyer, Brooks and Goes, 1990). Often

products, technology and markets become obsolete (Romanelli and Tushman, 1994). For larger firms this may have a significant effect on a business unit within its portfolio, for owner managed businesses it can have a much greater weighting, affecting the totality of its business. By examining interview responses, a contribution can be made to practitioners by highlighting the importance of ambidexterity in assisting in identifying risks. This does not provide generalised answers as each owner managed business has unique characteristics, but it provides a systematic and logical approach to the identification of potential problems and management of risk.

The competitive environment and its importance to firms is well understood (Porter, 1983). Some strategists advocate focus on what they do best to meet the competitive pressures using their resources to exploit existing core competencies and remove slack. For owner managed businesses little slack exists with resources limited or inaccessible (Levinthal and March, 1993). Environmental antecedents therefore may play a more critical role for owner managed businesses in how they achieve balance.

The appropriability regime, notable legislation and intellectual property rights is an important environmental factor. For owner managed businesses, the cost of obtaining such legal protection can be prohibitive, so distorting how they balance exploration and exploitation. This is examined in the interviews as a potentially differentiating factor.

Organisational antecedents in owner managed businesses are different, notably in ownership, culture, age, size, structure and absorptive capacity. These antecedents tend to be less bureaucratic, structured and diversified (Forbes and Milliken, 1999) possessing fewer formal systems and procedures and fewer planning activities (Busenitz and Barney, 1997). Interpretation of culture is subjective, but cited as one of the fundamental differences between large and smaller businesses (Whetten, 2006). It sets a firm's values, beliefs, style, logic and methodology and how it achieves its vision. A firm's size influences culture, owner managed businesses with a tight flat organisation have a greater probability of maintaining culture than a multi-site multi-disciplined global corporation (Anteby, 2008). Similarly, strength, breadth and commitment to norms and values influence decision making (Andrews, Basler and Coller, 1999; Sorensen, 2002). The case study specifically examines product inertia, where culture and hubris plays a critical role (Stinchcombe, 1965; Olson,

Bever, Van and Verry, 2008). As with age, the size of an organisation has conflicting past research with some papers showing a positive relationship to achieve ambidexterity (Rothaermel and Deeds, 2004), whilst others have suggested larger organisations may be able to more easily access resources (Beckman, Haunschild and Phillips, 2004).

Management antecedents have identified the following subcategories: risk aversion; performance feedback; experience; ownership; knowledge transfers; role of top management teams and family / shareholder influence (Lavie, Stettner and Tushman, 2010; Cacciotti and Ucbasaran, 2018). They are a regular theme of owner managed business performance via the role of the owner manager, core team, leadership and entrepreneurship (Rangone, 2014; Hughes, Filser and Harms, 2018). These are often the micro foundations of the antecedent to ambidexterity (O'Reilly III and Tushman, 2013) but past research has shown owner managed businesses often have limited managerial expertise (Milliken and Forbes, 1999) and so short of expertise to manage know-how owned by the entrepreneur or existing in the firm from other sources (Cooper, 1994). This may impact on the ability to effectively manage changing internal and external environments (Ebben and Johnson, 2005). Hadjimanolis found owner managed businesses required critical resources (Hadjimanolis, 2000) such as managerial capabilities and internal technological resources to achieve innovation ambidexterity. Achieving organisational ambidexterity may be contingent on the availability of resources particularly as operating complexity grows (Kyriakopoulos and Moorman, 2004; Raisch and Birkinshaw, 2008). Meta-analysis has also shown the impact of such performance management interventions is greater in small firms (Guzzo, Jette and Katze, 1985). Prior studies report a goal orientated performance management approach is a critical success factor for owner managed firms (Chawla, Pullig and Alexander, 1997).

Owner managers' risk aversion can be a material differentiator, they often have "skin in the game" via initial investment rather than getting "sweat" equity via a remuneration package. This effects the behaviour and psychology of the leadership team, they have their own investment to lose, not just a financial upside. Consequently, professional managers' have only an upside reward structure which encourages risk taking, whilst owner managers often face the risk of "betting the house", literally, as often personal guarantees are sought from lenders. Risk is also strongly linked to cognitive and personal characteristics and this research looks for any decision-making rationality, learning methods and risk analysis. This may

contribute to research by proposing practical decision making algorithms providing managers with practical decision making tools rather than generalised models (Patel, Messersmith and Lepak, 2013). Social context contributes to knowledge processing activities, particularly by shaping a common communication system within interpersonal social relationships (Verona, 1999) improving a firm's ability to acquire, assimilate, transform and leverage new knowledge over time (Jansen, Tempelaar and van den Bosch, 2009). Due to resource constraints owner managed businesses utilise their specific knowledge towards exploration and exploitation innovation through close social interaction among individuals in the firm to increase the depth, breadth and efficiency of knowledge exchanges among people (Lane and Lubatkin, 1998). A trusting social relationship, common in owner managed businesses, can contribute to effective knowledge exchanges and its recombination. This should then shape an internal organisational ecology in which the occurrence of exploratory and exploitation innovations is supported (Tsai and Ghoshal, 2013). These characteristics are an important compensatory quality in many smaller businesses and the case study looks to this as a potential network support management antecedent offsetting resource limitation.

Managers' past experience has a role in ambidexterity, whereby routines and capabilities result in path dependency (Lavie and Rosenkopf, 2006). The maturity of the top management team can cause homogeneity and internal focus facilitating exploitation from self-reinforcing learning, coupled with past experiences (O'Reilly III and Tushman, 2007). Closely linked to past experience is performance feedback. Exploitation routines generate feedback on existing capabilities, so conditioning management to continue a successful model and fall into the "success trap" and restrict exploration (Levinthal and March, 1993). How this as a standalone antecedent may differ between large and smaller firms is unclear from research. Furthermore, experience is likely to be influenced by the external environment. The interviews and case study examine the influence of post and pre experience performance and the relationship to the external environment.

Strategy as an antecedent need to be considered. For owner managed businesses the existence and appropriateness of strategy is not always present (O'Reilly III and Tushman, 2011). If a business has no long term vision to grow and is for example, employing a defender or follower strategy (Miles and Snow, 2003) then attempting ambidexterity is unlikely to

meet the stakeholders' objectives. For such businesses a focus purely on exploitation may meet owner managers' expectations and therefore the costs and disruption caused by exploration may not have value, causing performance decline. Firms must first assess and align its strategy with ambidexterity, whilst not formally in the Lavie *et al.* construct it should be considered as an antecedent. It is important to consider how strategy and ambidexterity co-exist

Whilst ambidexterity remains firmly associated with strategic analysis it has now evolved into a separate research stream (Divinney, Dowling and Wilden, 2016). Ambidexterity and balancing short and long term objectives via a formal structure to achieve strategy is well established (O'Reilly III and Tushman, 2007), it is a dynamic core capability necessary to simultaneously exploit and explore (O'Reilly III and Tushman, 2011). Dynamic capabilities are foundation stones of strategic execution, resting at the feet of the leadership team to allow resource configuration, create organisational structures and develop routines to sense, seize and maintain competitiveness (Teece, Pisano and Shuen, 1997).

2.4.2 Organisational Modes

To understand ambidexterity, one must understand what organisational structure exists. The mode of operation is a key owner managed business difference relative to larger firms (Chang, Hughes and Hotho, 2011). Since the proposal of evolutionary and revolutionary change via structural separation (Tushman and O'Reilly, 1996), several additional structures have been proposed and categorised into four modes (Lavie, Stettner and Tushman, 2010). The theoretical validity and practical usefulness of this approach is consistent with managing contradiction and paradoxes (Poole and Ven van de, 1989). This case study research is able to consider all mode options as it designed its own approach to becoming an ambidextrous organisation. The case study commenced after an acquisition and so provided an ideal starting point to examine mode selection and the practical implications over a time horizon. These mode choices are explained in the Lavie *et al.* construct. Their summary table is replicated below and corresponds to fundamental methods for managing contradictions and resolving paradoxes (Poole and Ven van de, 1989).

Mode	Contextual	Separation	Temporal	Domain
Locus (where) balance occurs.	Combined Individual and corporate level to achieve exploit /explore balance.	Spatially distant internal business units controlled by overarching corporate team.	Exploit /explore in different time frames controlled at corporate level.	Balance within the organisation exploit and explore separated by function controlled at corporate level
Mechanism of balance.	Concurrent exploit /explore activity no buffers.	Separation dedicated units either exploring or exploiting.	Sequential shift of focus over time.	Simultaneously acting separately in a domain.
Managerial Role.	Supportive integrated organisational structure.	Overreaching analysis over all units looking to coordinate.	Proactive integrated management. Mandating.	Proactive hands on management not a prerequisite. Variable within domain.
Challenges.	Inconsistency and variable internal message. Contradictions within a business unit.	Coordinating to optimise overall outcome whilst aligning manager contradictions.	Timing, managing transitions.	Identifying domains, making appropriate domain / cross domain decisions.

Table 2. 2 Mode Options

In the above table the domain mode allows exploration and exploitation activities to be carried out in multiple domains. An example being business alliances, were several separate alliance domain undertake either exploration or exploitation to achieve overall balance (Lavie and Rosenkopf, 2006).

The contextual mode is characterised by stretch, discipline, support and trust (Birkinshaw and Gibson, 2004) within a collective identity and shared ambitions (Ghoshal and Bartlett, 1994). The contextual mode purports a supportive internal organisation freeing people to

create shared ambitions with a collective identity and reach shared performance standards within well designed systems where alignment and adaptability co-exist (Ghoshal and Bartlett, 1994). This is a recognised owner managed business environment where limited resources result in multi-tasking. In this mode micro level focus may exist on either exploration or exploitation (Adler, Goldoftas and Levine, 1999). The likelihood of the conflict of objectives within a firm is high, leading to sequential allocation of goals as particular tasks lend themselves to exploration or exploitation (Levinthal and March, 1993).

This contextual mode may be the default approach for owner managed businesses, with only one business unit and an integrated management team in a tightly knit organisation. The ability to simultaneously balance the contradictory tensions and modes emphasises the role of the individuals and management. The two firm level domains of product and markets is this thesis' focus. These domains were chosen as they are how owner managed businesses deliver value to existing customers of existing products via existing systems whilst trying to develop innovative product solutions for new markets.

The structural mode This approach recognises the conflicting nature of exploration and exploitation seeking to limited structural integration with spatially separate operations. The locus of balance is individual business units. These units have internally consistent objectives and tasks, with their own structure and culture (Tushman and O'Reilly III, 1996). The mechanism of balance is achieved by separate units simultaneously undertaking either exploitation or exploration. The corporate level management coordinates the units to ensure the two independent structures are effective as one collective unit to ensure overall strategic integration and performance optimisation. The unit management's role is to have a narrow focus on one core function This mode is likely to be challenging for owner managed businesses as they are often constrained by management resources or may only have one business unit and so are not able to separate. In larger businesses there are often formal organisational structures with highly task orientated units whose *raison d'être* is to maximise efficiency through tight control and process management of existing competencies. Meanwhile in contrast the exploration is found in physically separate, small, loose cultures with flexible processes and a clear learning environment with a separate management team and measurement (Taylor and Helfat, 2008).

Temporal separation mode is rooted in the notion of punctuated equilibrium where evolution occurs cycling through long time periods of relative stability, punctuated by discontinuous change or upheaval (Romanelli and Tushman, 1994; Birkinshaw, Zimmermann and Raisch, 2016). In this punctuated mode the firms adapt through long periods of exploitation and short brief periods of exploration and radical change (Gersick, 1991). The temporal mode advocates that firms change their exploration and exploitation activities over time in response to environmental events in order to maintain ambidextrous balance to optimise performance in the short and long term (Goossen and Bazazzian, 2012). The management team tries to be adaptable to navigate the predictable and unpredictable business conditions it encounters along its journey. The firm transforms itself through periods of stable convergence, disruptions, technology, product and market change. The bridging of the gap between punctuated and simultaneous exploration and exploitation is seen via constant organisational vacillations (Boumgarden, Nickerson and Zenger, 2012; Uotila, 2018).

A constantly vacillating dynamic environment may require firms to adopt a semi-structured approach to manage change and attempt to predict future outcomes (Brown and Eisenhardt, 1997). Firms try to circumnavigate the conflicting pressures of simultaneous exploitation and exploration (Lavie and Rosenkopf, 2006). The interviews consider the extent dynamism affects the mode of operation, varies organisational structures and balance (Boumgarden, Nickerson and Zenger, 2012). Such an environment requires an agile management team, a quality often associated with owner managed businesses, able to change course quickly relative to larger, more rigid firms, where change evolves more slowly over time. Careful consideration in the research is given to any causal relationship between the environment and temporal mode. The environment may force owner managed businesses to adopt a temporal mode more than a larger firm which can in relative terms, mitigate the effect of the same environmental impact more easily.

A degree of definition divergence exists amongst scholars, who refer to sequential ambidexterity (Simsek, Heavey and Veiga, 2009), or vacillation (Boumgarden, Nickerson and Zenger, 2012) to explain temporal cycling, whilst others define ambidexterity as a simultaneous activity and therefore one that is distinct from punctuated equilibrium (Gupta, Smith and Shalley, 2006; Raisch and Birkinshaw, 2008; Uotila, 2018). Several scholars have

argued that organisations typically evolve according to the punctuated equilibrium model as firms vacillate through relatively long periods of incremental change punctuated by revolutionary change (Tushman and O'Reilly III, 1996). Whilst others suggest the punctuated equilibrium model to be ubiquitous in organisations (Boumgarden, Nickerson and Zenger, 2012). Although punctuated equilibrium and ambidexterity are acknowledged as alternative mechanisms for balancing incremental and radical change over time, debate exists as to which model a firm should follow (Gupta, Smith and Shalley, 2006; Raisch and Birkinshaw, 2008). This is pertinent in dynamic environments when trying to maintain short-term performance and long-term viability (March, 1991; Tushman and O'Reilly III, 1996; He and Wong, 2004; Uotila, Maula and Keil, 2009). The processes of incremental and radical change impose conflicting demands on organisations and raise the question in the management literature of how to resolve the tension between the two types of adaptation over time (Andriopoulos and Lewis, 2008; Fang and Levinthal, 2008; Raisch, Birkinshaw and Probst, 2009; Lavie, Stettner and Tushman, 2010). This research over a three-year time horizon is aware of the debate and looks for examples and evidence of the practical solutions implemented. For the purposes of this research punctuated equilibrium is regarded as analogous to the temporal mode.

The domain mode is experienced for exploration and exploitation where attempts to balance ambidexterity are undertaken across multiple domains experiencing different activities within the same business unit. This domain separation may be achieved through alliances (Lavie and Rosenkopf, 2006), via networks (Stadler, Rajwani and Karaba, 2014) or within business unit domains; product and markets (Voss and Voss, 2013). This network approach may be especially applicable to owner managed businesses that face greater resource constraints than larger firms (Cooper, Gimeno-Gascon and Woo, 1994; Milliken and Forbes, 1999). Achieving balance within domains has not been proven to improve performance (Lin, Yang and Demirkan, 2009), whilst cross functional domain ambidexterity research has shown improved performance (Patel, Messersmith and Lepak, 2013; Voss and Voss, 2013). However, if this research proves that domain separation is the prevalent mode for owner managed businesses future research may be required to confirm performance outcomes.

The networks mode can be seen as a hybrid or link between other modes especially structural separation and temporal modes (Stadler, Rajwani and Karaba, 2014) where there

is separation of the exploitation and exploration. Consequently, there are inherent tensions and potentially a lost opportunity to share common knowledge and information if there is no formal link between exploration and exploitation, networks can provide this link (Lazer and Friedman, 2007). Networks can facilitate balancing of exploration and exploitation via coordinating roles which hinge on individuals, as managers to build networks to enable them to be ambidextrous (Mom, Bosch, van den and Volberda, 2009). They are able to act as mechanisms to allow firms to operate ambidextrously via an alternative mode as micro foundations.

While the role of individuals is crucial, a more general assumption is that a network's information flow capacity is increased within clusters. These clusters are not limited to internal personal relationships although they play a crucial role in knowledge transfer (Taylor and Helfat, 2008). They also exist between external partners notably working jointly with suppliers on shared goals offering an approach for owner manager firms to overcome resource constraints. The scope of new accessible knowledge is likely to increase through connections across clusters to allow balance between exploration and exploitation (Schilling and Phelps, 2007). Network ties and structure change over time, facilitating the cycling back and forth between exploration and exploitation (Stadler, Rajwani and Karaba, 2014). These clusters are able to remain flexible to react over a period of time to dynamism in the environment.

All of the above modes in the Lavie *et al.* construct are treated as discrete alternatives suggesting a mutually exclusive approach with the possible exception of the network mode. However, recent studies have suggested theoretical ambidextrous modes may not be mutually exclusive but used in combination (Boumgarden, Nickerson and Zenger, 2012; Goossen and Bazazzian, 2012; Laplume and Dass, 2012). A firm may start out with structural separation to develop new technologies free of the inertia of existing operations, but integrated structures may subsequently enable leverage of existing technologies to achieve synergetic benefits. In such circumstances the dualistic approach to combining to manage exploration and exploitation bringing together seemingly opposite paradoxical relationships may be valid, replacing the dualism, either / or approach discussed in the above modes (Graetz and Smith, 2008; Papachroni and Heracleous, 2020). Past research has acknowledged this within contextual modes suggesting organisational fluidity enables firms

to balance both exploratory and exploitative events simultaneously (Gibson and Birkinshaw, 2004; Lubatkin, Simsek and Veiga, 2006; Cao, Gedajlovic and Zhang, 2009; Benner and Tushman, 2015). This proposes firms cannot focus exclusively on exploration or exploitation and must continuously engage in both to develop appropriate modus operandi and adaptive management techniques (Gibson and Birkinshaw, 2004), allowing organisations to simultaneously explore and exploit. This example emphasises the role environmental dynamism has to play in the decision as to what mode may be appropriate (Uotila, 2018). The interview process and case study considers if modes are mutually exclusive or if cross over exists.

During the case study literature was constantly revisited. This proved useful in considering again the potential hybrid nature of modes rather than mutual exclusivity. In particular research papers studying how firms combine structural and contextual modes have produced the concept of hybrid ambidexterity (Ossenbrink, Hoppmann and Hoffmann, 2019). This four firm case studies identified different environments require different solutions and acknowledges one size does not fit all and challenges prevailing understanding of contextual and structural ambidexterity as dichotomous categories instead re-conceptualising them as two ends of a continuum referred to as “blended ambidexterity” where both modes are co-present. A second research paper (Foss and Kirkegaard, 2020) looking at only one firm which operated also in structural and contextual modes to overcome the limitations of each individual mode further supports the multi-mode proposition as an alternative. These papers support my practical findings where my role at various times involved hands on in and out temporary problem solving leadership (“bungee jumping”) in structural modes interventions whilst operating companywide in a contextual mode (“helicoptering”).

2.4.3 Resources

The availability and allocation of resources are fundamental business antecedents (Lavie, Stettner and Tushman, 2010). Different categories of potential resource issues exist, including financial; tangible and intangible assets; routines and competencies; brands; intellectual property and supporting commercial networks / alliances. Owner managed

businesses differ from larger firms regarding available resources, such as human and financial capital (Cooper, Gimeno-Gascon and Woo, 1994; Hambrick and Chen, 1995; Ebben and Johnson, 2005). Innovation exploration using limited resources may be incremental for large firms but radical and consuming significant resources for owner managed businesses (Lin, McDonough and Lin, 2013). They are a more critical consideration with a greater impact for owner managed businesses (Chang and Hughes, 2012).

Firms with more resources find it easier to become ambidextrous (Yigit, 2013). Owner managed businesses may enhance business performance by reducing the performance-damaging effects of over-engagement in exploitation, the success trap, to the detriment of exploration, or vice versa (Cao, 2009). Furthermore, some research suggests exploration implementation may require more time and resources than exploitation which may limit owner managed businesses capacity to find sufficient resources (Lin, 2013). Alternatively, research has suggested resources are not always scarce and can be shared across functions simultaneously (Shapiro and Varian, 1998). Owner managed firms face different challenges from large firms, including: level of risk taking; entrepreneurial orientation (Yanes-Estévez, García-Pérez and Oreja-Rodríguez, 2018); culture (Cacciotti and Ucbasaran, 2018) and innovation (Chang and Hughes, 2012). Additionally, the need for a wide range of paradoxical management capabilities (Papachroni, 2013) and core competencies is a challenge for smaller resource constrained firms (Zahra, Sapienza and Davidsson, 2006; Pisano, 2015). These attributes require additional resources to which owner managed firms have limited access (Voss and Voss, 2013). Without them they may not be able to undertake an optimal exploration and exploitation balance (Bierly and Daly, 2007).

2.4.4 Balance

Early scholars treated exploitation and exploration as two opposing elements competing for resources within time frames (Duncan, 1976; March, 1991; Tushman and O'Reilly III, 1996; Siggelkow and Rivkin, 2006). Constant pressure exists to satisfy existing customers' needs whilst experiencing competitive pressure to become innovative (Schreuders and Legesse, 2012). This early research regarded the balance of exploitation and exploration as a point on a continuum. Research has also highlighted an alternative relationship where the

magnitude of the two activities are orthogonal the complementary benefits enhance overall performance (Cao, Gedajlovic and Zhang, 2009), and the combined magnitude presents mutual benefits (Gupta, Smith and Shalley, 2006). More recent work has considered exploration and exploitation as paradoxical challenges which instead of being separately or temporally balanced via dualism look to paradoxical management capabilities to encourage a more holistic approach combining the individual elements as a dualism rather than as dual structures (Papachroni, Heracleous and Paroutis, 2014).

Balancing ambidexterity remains one of the key challenges in management research (Chang and Hughes, 2012). When does a firm know it has balance? Whilst ambidextrous characteristics have been suggested few can provide a practical guidance as to how to measure when a firm has achieved balance. A dynamic environment requires continual reassessment. Measurement is also fraught with difficulty when trying to optimise short and long term outcomes. The financial analysis of short-term exploitation is easier to measure, and the probability of error is lower than attempting the equivalent analysis of future activities, which requires judgmental based modelling and risk analysis. For most owner managed businesses this is outside their skill set and provides another difference from larger firms who have access to the skills and resources to undertake complex investment and risk analysis. If owner managed businesses cannot achieve these capabilities to become ambidextrous then scholars have suggested that it may be more appropriate for them to focus on a different strategies such as cost leadership or differentiation (Ebben and Johnson, 2005). This point supports why this research believes owner managed businesses must link ambidexterity with strategic intent. It remains to be shown in planned or event driven theory that organisations do intentionally plan to achieve balance (O'Reilly III and Tushman, 2007). This is pertinent for firms where environmental forces can drive imbalance (Jansen, Bosch, van den and Volberda, 2005). This research seeks to confirm the strategic orientation of each of the owner managers in the interviews.

2.4.5 Trade-offs

Organisational learning theory has traditionally considered exploitation and exploration as a trade-off being at either end of a continuum (March, 1991). This has been augmented by

subsequent research proposing an orthogonal relationship whereby mutual benefits arise from the interactions and ability to use knowledge, information and skills (Huber, 1991; Shapiro and Varian, 1998; Gupta, Smith and Shalley, 2006; Raisch and Birkinshaw, 2008; Lavie, Stettner and Tushman, 2010).

March proposed both exploration and exploitation to be learning activities, so creating the challenge of ambidexterity balance. Ambidexterity is the capacity for organisations to simultaneously address inconsistent or even directly incompatible objectives equally well (Birkinshaw and Gupta, 2013). This research considers such trade-offs within two specific firm level domains; products and markets, and via cross functional ambidexterity (Voss and Voss, 2013). Similarly the pursuit of incremental and radical innovations helps organisations to be successful at exploring new opportunities and exploiting existing businesses (Michl, Gold and Picot, 2013). This research identifies the practical measures implemented to understand the decision process of such trade-offs, notably resource allocation, short versus long term, present versus future and stability versus adaptability and how they influence the path to ambidexterity (Eriksson, 2013). Additionally, the research tries to understand if these trade-offs result in movement along a continuum of choice between exploration and exploitation or have an orthogonal relationship propagating a complementary relationship.

2.4.6 Time Frames

When identifying antecedents, modes, trade-offs and balance are considered static but the dynamic environment and internal changes mean it is necessary to consider time in balancing equilibrium and modes that may not be mutually exclusive over time (Boumgarden, Nickerson and Zenger, 2012; Goossen and Bazazzian, 2012). Some antecedents strongly emphasise its importance, notably in path dependency, firm's age, experience and appropriability of knowledge. The dynamic environment and modus operandi of the firm constantly challenge the ability to achieve ambidexterity and one consistent ambidextrous mode may be inappropriate to optimise performance over time (Siggelkow and Levinthal, 2003). This is specifically examined in the dynamic case study interventions where a specific event allows controlled changes to be examined over a three-year time horizon.

2.5 Initiation of Ambidexterity - The Second Framework

To understand how to practically and dynamically initiate ambidexterity the Zimmermann framework (Zimmermann, Raisch and Birkinshaw, 2015) is utilised. It allows the selection of either a mandated, top down, or an emergent, bottom up, initiation charter definition to determine the use of contextual or separation modes.

In their proposal of how ambidexterity is initiated the concept of charter definition and execution processes is introduced, as summarised in the following diagram. In this thesis a new sub divisional mode of informal contextual ambidexterity is proposed to be considered. It is not currently identified in literature; this research refers to it as an “**informal contextual mode**”.

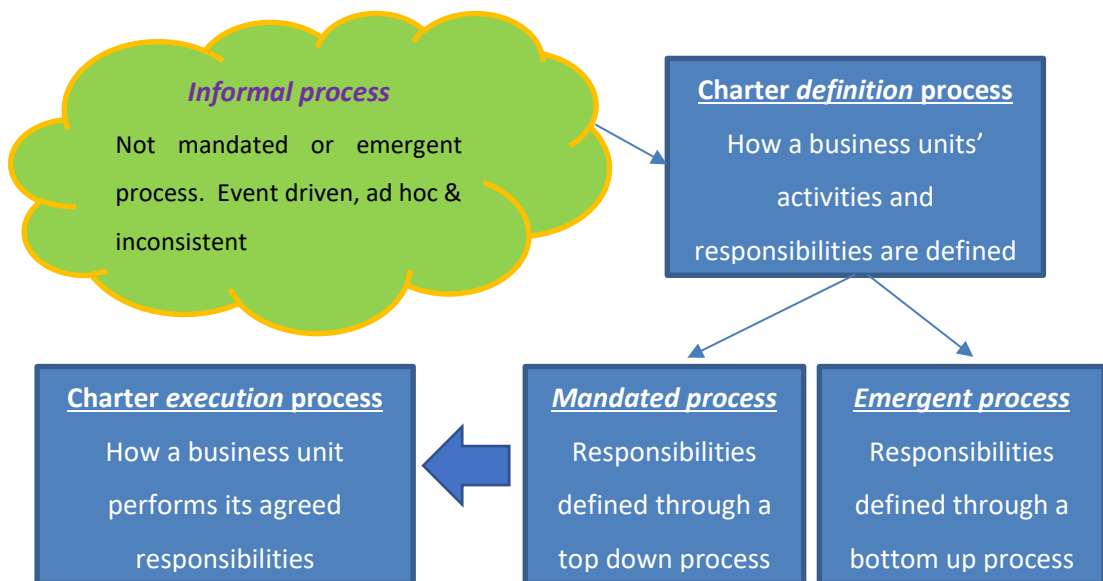


Table 2. 3 Informal Contextual Mode

This thesis purports owner managers, pre- commencement, may operate an informal process, this adds a new mode to the above charter definition. It has distinct characteristics contrasting with Zimmermann who suggest only mandated or emergent process, as shown in the table below. The charter execution process following on from the charter definition

and a specific modus operandi may not be possible because of the existing informal approach of owner managed businesses.

	Initiation charter	Informal Contextual Mode
Achieving ambidexterity	Individuals dividing their time between alignment and adaptability.	Project based often temporal and ad hoc in time allocation.
Decision making process	One business unit of front-line staff and the management team.	Owners or leadership team.
Role of management team	To create the structures and processes to allow the individuals to act.	Micro management and tight control.
People's role	Flexible via empowerment.	Individuals often identified for project-based tasks.
Knowledge and skills	Generalists.	Generalist, complemented by bought in specific external skills.

Table 2. 4 Initiation Charter and Informal Contextual Process

The consideration of an event driven, informal charter definition process is because of the sometimes unique characteristics of owner managed businesses, particularly the top management team. The team is often a combination of owner managers, or managers with a strong link to owners, highlighting the strong influence of leaders, suggesting a more top down mandated approach. However, this paper challenges this view and suggests this is assuming too much formal process by owner managed businesses, not always existing in practice (Voss and Voss, 2013). Recently research supporting a more emergent initiation approach has been proposed (Sinha, 2019). Here rather than the usually top down planned strategic choice it proposes a process from which ambidexterity emerges.

The approach this research takes is semi-structured interviews investigating for any evidence pre commencing of a formal charter definition process or whether a more informal approach exists to add to the work of Zimmermann. This exhibits itself within informal, culturally tight organisations as a reactive rather than proactive approach driven by events. It is led by the

owner managers reflecting their personal risk appetite delegating to line managers. Resources, both people and financial, often determine scope and timing of activities.

2.6 Ambidexterity Pathway Construct - The Third Framework

The initiation process is linked to the Raisch (Raisch and Zimmermann, 2017), three stage ambidexterity pathway of initiation, conceptualisation and implementation. This pathway framework is employed to ensure a dynamic sequential dynamic methodology in clear stages examined separately below to ensure it is applicable to a practical application.

There is considerable research into exploration–exploitation tensions and the different managerial approaches (Smith and Lewis, 2011; Schad, Lewis and Raisch, 2016). However, there are still constant calls to address the static nature of much of this research as these tensions vary over time (Lavie, Stettner and Tushman, 2010; Raisch and Zimmermann, 2017). The pathway is an attempt to address scholars' repeated criticism of ambidexterity literature for its static accounts (Boumgarden, Nickerson and Zenger, 2012) and suggest a more dynamic approach (Zimmermann, Raisch and Birkinshaw, 2015).

Several propositions have been developed to explain a firm's journey to becoming ambidextrous. The case study includes the initiation process as part of the Raisch three stage ambidexterity pathway of initiation, conceptualisation and implementation. This pathway incorporates the initiation process and the Lavie *et al.* exploration and exploitation construct. In doing so this research advances current literature and answers the call for a greater understanding of owner managed firms' uniqueness and consequent ambidextrous performance (Hughes, Filser and Harms, 2018). These organisational ambidexterity conceptualisations are not mutually exclusive and the same literature often identifies these sub categories overlapping and not either / or choices (Smith, Lewis and Tushman, 2016). The case study has selected a route map with three established frameworks as its foundations. However, it is not tied to the testing of any one conceptualisation, but open minded, interested in observing how an organisation develops its own practical pathway to

ambidexterity and so improve performance (He and Wong, 2004; Venkatraman, Lee and Iyer, 2007; Fang and Levinthal, 2008).

The consideration of ambidextrous pathways encompasses a broad definition. They arise from the extensive research into exploitation and exploration dilemmas, tensions and the inherent paradox at the heart of ambidexterity. These research pathways have included, firstly, looking through organisational learning led by March. Secondly, as static approaches emphasise the need for dynamic alignment and adaptability (Gibson and Birkinshaw, 2004) and organisational structures (Benner and Tushman, 2003). Thirdly, as the ability to innovation (Tushman and O'Reilly, 1996), to identify a long term sustainability path (Stadler, 2007). Fourthly, the role of dynamic capabilities and the challenge of path dependency (Heracleous, 2017). These pathway considerations all impact on the ambidexterity journey. Many are prescriptive and static by nature but are what a practitioner needs to consider when attempting to become an ambidextrous organisation. The theme of these research papers tends to attempt to identify the characteristics of how organisations function (Besson and Soulerot, 2010). These various pathways reiterate the core focus and importance of this thesis' research into "how to implement ambidexterity" and to reconcile the two "paradoxical demands" (Benner and Tushman, 2003). The combination of these three frameworks together for the first time, offers a closed loop solution, practically applied via a longitudinal pre-determined action research controlled intervention case study.

The Raisch framework sets out a three stage pathway of initiation, conceptualisation and implementation. These three stages and their recommended approach from the research findings are outlined in the following table. They identify the paradoxical tensions allowing the development of a plan to address them. This third theoretical framework is the pathway which brings together the Lavie *et al.* exploration and exploitation construct and the Zimmerman *et al.* initiation framework. The approach originally followed in the case study is summarised as follows.

Pathway stages	Decisions	Mode	Actions	Reference
Initiation	Senior Leadership team.	Mandated / emergent charter.	Charter process. External triggers. Path dependency impact. Paradoxes.	<ul style="list-style-type: none"> • (Lavie, Stettner and Tushman, 2010) • (O'Reilly III and Tushman, 2007) • (Zimmermann, Raisch and Birkinshaw, 2015).
Conceptual	Senior Leadership team.	Structural / contextual / Hybrid.	interventions. Toolkit questions. Tensions, complexity, turbulence.	<ul style="list-style-type: none"> • (Raisch and Tushman, 2016). • (Raisch and Zimmermann, 2017).
Implement	Line managers.	Structural / contextual mode.	Charter execution, managing paradoxical tensions.	<ul style="list-style-type: none"> • (Smith and Lewis, 2011), • (Jansen, Tempelaar and van den Bosch, 2009).

Table 2. 5 Raisch et al. Pathway Stages

The initiation stage is a charter definition process, identifying the strategy and what specific exploration and exploitation activities are to be undertaken. Firms often find themselves in a repeated challenge as their strategic focus is dynamic (Boumgarden, Nickerson and Zenger, 2012). Once these have been established, they can be put into categories using the Lavie *et al.* framework to consider the impact on antecedents, resource and trade-offs. This is performed by the senior leadership team identifying key managerial requirements utilising the charter definition approach (Zimmermann, Raisch and Birkinshaw, 2015). This allows the senior leadership team to maintain direct oversight of the interventions when ambidexterity experience in the management cohort is limited.

The conceptualisation stage considers the impact of the interventions decided in the initiation stage. This puts in place the appropriate structures and processes whilst understanding the firm's culture. This allows the management team to identify any conflicts

(Schad, Lewis and Raisch, 2016) also helping to identify potential areas of turbulence and complexity. The conceptualisation stage is required to understand and develop scenarios. It also prompts questions to help develop an ambidextrous plan to address key obstacles and ensures consideration of adequate management expertise, effective organisational structure and cultural changes to help determine resource requirements. These questions seek to tease out from the senior leadership team what needs to be considered to reduce complexity and turbulence so improving the ambidextrous journey and achieving the intervention outcomes in an effective timely manner. This orientation towards a dynamic process approach also helps address the criticism of static ambidexterity analysis, providing a practical dynamic solution.

The implementation stage is the charter execution process, which takes the conceptualisation plan for each of the interventions and starts the actual exploration and exploitation actions with specific outcome objectives. Past research has focused on individual competencies and tasks to enable ambidexterity (Rogan and Mors, 2014) which this research process seeks to overcome with a more holistic approach. It is the development of a plan incorporating strategy and ambidexterity, utilising the Lavie *et al.* construct. At this stage resources and trade-offs can be identified with specific reference to the scenario planning completed. It is path dependent and requires project management for each intervention with its own dedicated manager and team to lead and communicate the plan, allowing outcomes to be examined. The actual project management approach is outside of this paper's remit. Firms have their own approach and past experience of what works best for them, often determined by their own organisational context and individual competencies (Mom, Bosch, van den and Volberda, 2009). The stages to this approach can be summarised in the following table.

Implementation categories	Specific actions
Charter execution process	Identify interventions and define goals.
Exploration and Exploitation	Allocate to each intervention to be undertaken independently.

Implementation categories	Specific actions
Mode	Structural as per case study findings.
Measurement	Introduce measurement system and reporting time horizon.

Table 2. 6 Implementation Categories

The three stage pathway as described above needs to be tailored by a practitioner before it can be used effectively. It requires decisions particularly on the charter definition process and mode of operation to allow a process perspective to be considered. This is summarised in the following table.

Pathway	Initiation	Conceptualisation	Implementation
Structural	Top down external triggers (Lavie, Stettner and Tushman, 2010), (O'Reilly III and Tushman, 2007).	Formal structure corporate level (Raisch and Tushman, 2016), (O'Reilly III and Tushman, 2011).	Senior team / line manager coordination and paradoxical thinking (Jansen 2009), (Smith and Lewis, 2011), (Smith and Tushman, 2005).
Contextual	Top down external triggers (Carmeli and Halevi, 2009), or Bottom up internal triggers (Zimmermann, Raisch and Birkinshaw, 2015).	Informal culture / unit level (Gibson and Birkinshaw, 2004).	Line manager internal / external networks and behaviour / cognitive complexity (Jansen, Bosch and Volberda, 2005), (Rogan and Mors, 2014).

Pathway	Initiation	Conceptualisation	Implementation
Sequential	Top down / internal triggers (Boumgarden, Nickerson and Zenger, 2012).	Switching contexts / corporate level (Cao, Simsek and Zhang, 2010).	Senior leadership's active management of conflicts, common identity and objectives (Birkinshaw, Zimmermann and Raisch, 2016).

Table 2. 7 Pathway Options

2.7 Practical Considerations

If there is to be practical guidance for firms attempting ambidexterity for the first time, then they must understand its core construct. However, there is no general agreement on one specific construct that can be used by a firm to achieve ambidexterity (Gupta, Smith and Shalley, 2006). Achieving ambidexterity is a context based process that must be aligned to a firm's unique strategy. It is dependent on firms "organising as they strategize", constantly reviewing to align its own characteristics of culture, path dependency and history to its environment and available resources. There is no one sure-fire approach, one size does not fit all.

What research has provided is piecemeal examples, such as product innovation or specific situations, but no generic typology (O'Reilly III and Tushman, 2011). Therefore, without an understanding of the theoretical background owner managers do not have the tools to be able to develop their own unique approach to achieving ambidexterity.

The practical challenges of linking antecedents, modes and moderators to a firm's vision and strategy are often overlooked in theoretical research, or at best considered as piecemeal examples (O'Reilly III and Tushman, 2011; Hughes, Filser and Harms, 2018). Instead firms are faced with an array of moderating antecedents, often interdependent with multi-faceted performance implications (Lavie, Stettner and Tushman, 2010). There is no pathway

to allow rational decision making in a given time frame, in a dynamic environment with limited resources with measurement of outcomes. Instead research often identifies a specific antecedent, such as the role of the top management team and confirming their importance to outcomes (Cao, Simsek and Zhang, 2010). Alternatively, heterogeneity of senior management is acknowledged, but to what degree and how it should be used is not practically tested (Raisch and Birkinshaw, 2008). This has resulted in a call for practical dynamic research into how to link a business' strategy to ambidexterity which is multi-faceted in its consideration of events, causes and categories (Zimmermann, Raisch and Birkinshaw, 2015).

This literature review allows the researcher to answer the call for dynamic practical investigation by providing a theoretical grounding for firms attempting ambidexterity for the first time. It enables the development of a bespoke pathway as to how to achieve ambidexterity so as to manage their resources to achieve sustainable competitive advantage (Stadler, 2007).

Chapter 3 Methodology

3.1 Introduction

This chapter's objective is to explain the methodology applied to my longitudinal dynamic action research-controlled experiment in a single case study firm to ensure it is academically rigorous and follows appropriate established best practice. The methodology is conscious of the differences between this research as a DBA looking at the practical application of theory and a Ph.D. aiming to contribute to developing theory. The methodology applied enabled qualitative research to give generalised practical guidance wrapped up in strong academic theory and robust practical findings from the case study supported by independent interviews. The methodology has been adapted to reflect the focus on owner managed businesses atypical of much research which is dominated by large public company analysis (Veider and Matzler, 2016). The methodology is grounded by applying three theoretical frameworks in a practical environment. Firstly, an explore and exploit construct (Lavie, Stettner and Tushman, 2010). Secondly, the ambidexterity initiation process (Zimmermann, Raisch and Birkinshaw, 2015). Thirdly, the ambidexterity pathway (Raisch and Zimmermann, 2017).

The doctoral workshops and literature review pre case study gave an extensive understanding of ambidexterity methodology research. Additionally, a series of pre intervention pilot interviews with a common theoretical thread provided the basis for the design of a supporting semi-structured interview questionnaire consistent with the case study interventions (Appendix 6). These pre-commencement considerations led to the decision to undertake an analysis of a firm's companywide move to organisational ambidexterity. This approach helped in the testing of all three frameworks. Firstly, in the exploration and exploitation construct by consideration of whether strategic orientation was in line with ambidexterity. Most academic research only gives passing acknowledgement, it is not, for example, considered in the Lavie *et al.* exploration and exploitation construct. Pilot interviews were particularly informative on the initiation mindset vis a vis strategic

objectives. Secondly, this methodology allowed practical analysis of the Zimmerman *et al.* initiation process. Thirdly, the utilisation of the Raisch *et al.* theoretical ambidexterity pathway methodology could be practically tested and validated for completeness.

A single study can be criticised as too unique with too many boundary conditions. The four rather than one intervention, the use of established theoretical frameworks and a long time horizon reduces this criticism and avoids the risk of the case study becoming a lengthy autobiographical account (Atkinson and Delamont, 2005) with a closed loop literature review approach as research findings emerged. The triangulation of results to literature, interviews and theoretical frameworks also mitigated these criticisms (Baxer and Jack, 2008). This methodology design of piloting, case study and interviews provided a closed loop longitudinal action research project. It focused on data rich information analysed to drive the direction of further questions to produce practical recommendations. In doing so it balanced and positively answered the often voiced challenge as to whether qualitative single case study research is as robust as scientific inquiry methodology. The methodology adopted is explained in the following four sections: philosophical considerations; setting and context; data and analysis.

I was the researcher-practitioner embedded in the day to day case study firm as CEO, so ideally placed to understand the case study actors' behaviour. This research methodology was further enhanced by the clear starting point of a new acquisition which encompassed an extensive strategic review by the owner managers (Appendix 4 What success looks like 3 K, 2017) and a major consultancy firm (Appendix 4 Deloitte strategy 3 P, 2017). It is important to understand this research is not an analysis of acquisition integration or organisational change. What the acquisition enabled was an abundant source of actually experienced practical events during the ambidexterity journey to help design and validate the proposed toolkit.

3.2 Philosophical Considerations

This research methodology is concerned with the phenomena arising from the practical attempt to become an ambidextrous organisation, including intervening; interviewing; observing and participating in events to look at subjective meaning from embedded participants within the context of their own environment. It analysed the data with a mindset that social reality is not singular or objective and is instead determined by personal experiences and ontology as it attempts to interpret the finding through a sense making process. It acknowledged the observed phenomena are dependent on the actors involved and the way in which it forms the basis of their actions (Sandberg and Tsoukas, 2011).

This approach contrasts with the positivist or deductive methodological approach favouring scientific analysis in laboratory environments or survey research to test hypothesis where the start point is a theory to be tested with empirical data. Such an approach looks for proof to support a tangible construct based upon general causational repeatable laws which are relatively independent of the context or can be adjusted via depended variables. My research methodology acknowledged the benefits of quantitative data usually associated with the positivist approach and wherever possible looked to combine quantitative techniques to answer the concern of qualitative data not being as precise and clear in supporting the conclusions of the phenomena of interest (Eisenhardt, 1989). This is achieved by use of the NVivo qualitative software to quantify qualitative data from interview transcripts and case study documents.

My research employed theoretical sampling strategy whereby the case study and interviews were selected on the basis of whether they fit the phenomenon being studied. Clear ambidextrous practices were actioned within the case study firm allowing them to be specifically studied. This interpretative approach allowed simultaneous data collection and analysis so real time adjustments were better captured to assess the ambidexterity actions implemented (Eisenhardt and Graebner, 2007). It also allowed the original interview questions to be reframed from findings to further improve the analysis and eventual conclusions. This contrasts with the positivist approach whereby the data is fixed and cannot be modified, or hypothesis changed without resampling and retesting.

This interpretive approach was ideally suited for this DBA study which focused on the practical applicability of existing theory to understand how an organisation adapts, amends and compromises its approach when attempting to apply theory in a real live environment. This specific interventions in a longitudinal controlled action research setting enabled examination of behavioural logic.

The most appropriate way to answer a “how” question is via qualitative research via interviews and case studies (Eisenhardt, 1989; Yin, 1994; Chang and Hughes, 2012; Riessman, 2012). This thesis objective is a “how” (...firms transform into an ambidexterity organisation) question. The qualitative research approach allowed a more in depth granular look at what “*really happened*” (Goodson, 2010). This contrasts with the positivist or scientific research approach, which moves away from detail towards verifiable findings. One of the claims of scientific research and hypothesis testing is to achieve clean, objective results which can be replicated by another researcher under similar conditions. Although this qualitative research was not going to provide quantitative statistical results it compensated by allowing the researcher to dive to much greater depths to investigate phenomena and provide more support and understanding of patterns and themes (Ridder, Hoon and Mccandless, 2009).

A set of systematic inductive methods were employed, comprising of flexible method strategies including semi-structured interview questions and specifically designed experiments (“interventions”). It is not grounded theory research undertaking data collection to evolve into a theory. The inductive methodology principles usually applied in the context of analysing data to then construct theory, are in this instance used to provide a grounded methodology. This approach gave a flexible, but systematic research methodology, via direct whilst open-ended analysis to support creative theorising to practically contribute to extant theoretical framework enhancement. This follows an accepted approach to conducting systemic induction methodological research of primary analysis and categorisation and concept formation (Woods, 2006).

This research acknowledged and considered these methodologies and conceptualisations whilst not beholden to any specific one. Instead it left the controlled experiments to present findings as to what worked in practice. This interpretive approach was adopted as there was

an acceptance by scholars of the difficulties in obtaining the paradoxical management capabilities to balance competing tensions and of the way an organisation transitions to becoming organisationally ambidextrous (Agyei, 2017). This application of an established workable methodical mechanism using the case study and interview data enabled the development of a practitioners' bespoke toolkit underpinned by theoretical frameworks which acknowledged path dependency.

3.3 Setting and Context

The qualitative methodology design was based on established criteria for both case study and interview research (Eisenhardt, 1989; Yin, 1994; Voss, Tsikriktsis and Fronhlich, 2002; Riessman, 2012). A dual approach methodology was adopted with a longitudinal controlled action research single case study and independent interviews. The semi structured interviews identified practical independent examples of the three frameworks. The combination of two qualitative research methods allowed the interviews to provide a results spectrum to be triangulated to enhance the case study firm's specific in-depth data rich analysis. This helped to mitigate the one case study criticism of uniqueness and inability to generalise (Sato, 2016).

Consideration was given to a multiple embedded case study methodology to gain data not just from different levels in one organisation, but also across several organisations to use replication logic to gain more compelling stronger evidence than in a single study (Eisenhardt, 1989; Yin, 1994). However, this replication logic would not be exactly the same in a second case study firm as the research data could not replicate the position of CEO and access to knowledge and the ability to determine interventions. The pre-planned interventions, real time analysis and access to data and actors' behaviour was in my opinion a more compelling argument for only a one case study firm. The criticism of one study was not ignored, hence the independent interviews to support findings and allow triangulation of data (Voss, Tsikriktsis and Fronhlich, 2002).

3.3.1 Case Study Firm Background

The business started up as a single location distribution business by its two founders who still remain in the business. The firm's 28-year history can be split into three time periods; first 15 years, next 10 years and the three-years of this controlled action research study. After the first fifteen years it had grown sales, organically and by acquisition, to £27m from 11 distribution outlets ("depots") by expanding geographically. Its organisational structure was informal with a long-standing management team, who had grown with the business and so possessed tacit, undocumented knowledge.

After 15 years an approach was made by a competitor to purchase the business. This prompted a review by the founders of their business vision, cumulating in a decision to remain independent and continue to expand the business. After working with consultants, a decision was made to appoint a new external director and shareholder to develop and execute a formal strategy. This appointment was how I joined the business and resulted in me becoming the CEO. This allowed the creation of the company's first documented strategy, including a new organisational structure with measurable financial objectives. A few new managers were recruited, notably in finance, but generally appointments were of long-standing internal candidates. It continued to develop organically and by acquisition with increased manufacturing capabilities resulting in over 50% of outlet sales being of its own manufactured products. In doing so it became a vertically integrated business. At the time of the case study commencement it had grown its depot network from 11 to 46 and sales from £27m to £70m. However, it was the smallest of only a handful of vertically integrated businesses in its market sector with each of its competitors being at least three times larger.

After 10 years of continuous growth an opportunity arose to acquire the largest remaining national distributor, a division of a publicly listed company. After protracted negotiations it was acquired and immediately increased the size of the combined businesses to £120m. This had required an in-depth pre-acquisition strategy review with external management consultants (Appendix 4 Deloitte strategy 3 P, 2017), which coincided with my own doctoral research into ambidexterity. This acquisition provided an opportunity to examine how an owner managed firm attempted to become ambidextrous. It had a clear starting point, with

specific pre-determined action research interventions to be implemented and monitored over a provisional time horizon. The business had reached a point where the informal management culture and structure was no longer effective and needed to consider how to manage its exploitation and exploration objectives to deliver its strategy (Hadjimanolis, 2000).

The case study has three research strengths. Firstly, it was studied in its natural environment, observing actual practice. Secondly, it enabled “what and how” questions to be answered with full understanding of the nature and complexity of the phenomenon. Thirdly, it allowed the testing of theories to see if they can survive the test of empirical historical data and whether the behaviour predicted by the theory occurs (Meredith, 1998).

For several years strategy and business plans had been prepared by the case study firm. The strategy was consistent with an attempt to become an ambidextrous organisation as identifiable future exploration and exploitation activities existed. The preceding doctoral workshops had resulted in the appropriate selection of the three theoretical frameworks. I understood ambidexterity literature to ensure the correct data collection. This helped authenticate the selection of interview firms and the questionnaire construct to work in tandem with the case study.

The case study firm was analysed to identify what *modus operandi* currently existed to ensure a clear distinction could be made between the pre and post interventions. The Lavie *et al.* exploration and exploitation construct was cross matched to ensure its individual categories: antecedents; modes; balance; resources and trade-offs could be identified and monitored. The management team members were aware of the strategy and their role in moving to exploration and exploitation functions, but not of the monitoring of the action research study. This avoided any conscious or sub conscious behavioural change by the management team. This pre intervention analysis made sure a detailed understanding and positioning of the case study firm prior to longitudinal study commencement. The firm had never previously considered ambidexterity and so it fulfilled the criteria of a firm attempting ambidexterity for the first time.

3.3.2 Independent Interview Background

The owner manager interview selection criteria ensured clear definition of research boundaries so limiting independent variables. They were undertaken to support the case study findings and avoid the researcher obtaining data through a single lens. This improved the ability to generalise findings to use in actual business environments, albeit with boundary conditions.

All selected companies were UK based owner managed businesses, with predominately UK sales. Those without a distinct management organisational structure were excluded, because separation of exploration and exploitation would have been unlikely due to the owner manager having to do all aspects of the business with limited delegation options. A judgemental decision was made to select firms with less than 250 employees as the owner managed dynamics were thought to be reduced on larger businesses. Whilst above the European Union definition of SME, it was regarded as still relevant from a behavioural aspect because all the firms interviewed were owner managed. Private Equity backed businesses were excluded because of their notoriously short-term strategy may distort findings. Similarly, listed firms were ignored as ownership structure, governance and access to resources was different (Ebben and Johnson, 2005). A firm's activities were a boundary condition, restricted to those with tangible products, not services, to improve the standardisation of interview questions. This allowed greater comparability of responses to exploitation and exploration examples via two domains; product and market. This selection criteria ensured a similar outlook in terms of risk appetite, resource constraints, culture and organisation characteristics.

Whilst this research is undertaken to provide practical guidance on how to achieve ambidexterity it must be in the context of strategy and its execution. Owner managed businesses' strategy is often reactionary or evolutionary, not mandated or structured with informal undocumented planning. Often evolving by chance, path dependency, trial and error, internal or external events, resource availability and organisational structure. As part of the interview process the strategic orientation is identified to explain how firms are able to articulate and provide evidence of an actual strategy. The discussions in Chapter 6 look to add strategy as an antecedent to the Lavie *et al.* construct.

3.3.3 Researcher – Practitioner’s Position

My role as the researcher-practitioner helps explain the choice of a one firm study, not picked out to be random, not multiple cases to be statistically relevant, but in fact the opposite. The firm chosen was selected following a theoretical sampling approach, more likely to provide data rich sources and content to explain results and contribute to theory and practice (Yin, 1994). This allowed an in-depth reflexive analysis of data and specific controlled interventions to be pre-planned and explained then executed exactly in accordance with theoretical framework constructs and tested in a live practical environment, the phenomenon was situated in a real business context (Yin, 1994). This allows the actions, expected solutions and actual outcomes to be described and analysed back to theoretical frameworks. This is especially valuable as the real time implementation and analysis enabled the impacts and outcomes to be assessed and increased testing of emerging themes and patterns to improve the quality of the findings (Bamford, 2008). This was relayed back to the case study interventions and incorporated into the interviews throughout the time horizon to gain triangularity. However, it is a foolish researcher-practitioner who claims their research methodology is free from challenges. One such challenge is of researcher-practitioner bias. This paper combined several integrated approaches to ensure academic rigour and validity of the research so addressing common challenges levelled at the researcher-practitioner. The following paragraphs explain what measures were taken to overcome the researcher-practitioner challenge.

There is a need to reconcile the research position with independence. It requires methodological as well as ethical consideration to remove any tension; which can invalidate conclusions. It emphasises the importance of research integrity objectives, independence and distance. The issue of being inextricably linked with the methodology and style used are fluid, not static. The researcher’s position is path dependent, relative to what is happening in the project at any point in time. Methodological tools have been applied to construct a justifiable and authentic defence against impartiality and a known research position (Drake, 2011). This means taking a reflexive stance and undertaking a SWOT analysis to assess the issues specific to this research (Hockey, 1995; Drake, 2011). The search for method is a

search for a means of critical reflexivity where the individual circumstances become part of project methodology. This SWOT analysis provides a criterion for trustworthiness and is a critical, methodological approach (Lincoln and Guba 1985).

A reflexive stance is achieved by placing oneself squarely in the frame of the research and considering explicitly what that means for the study. This leads to a position whereby the researcher's commentary, descriptions and analysis of events is only based on interpretation. It acknowledges the commentary is an intermediary between the researcher and the reader. The research gains its strength from the ability of the researcher to reflect on any potential areas of bias and propose solutions wherever possible to maintain distinctions between researcher and participant. A reflexive stance is been taken by understanding the academic questions raised when the researcher is also the practitioner leading the interventions (Schostak, 2002). The strengths and weaknesses relating to these questions are considered (Hockey, 1995, 1996) in the case study and interview designs below.

3.4 Data

This section explains how data can be collected, linked to the case study proposition within the research design (Yin, 2018). The approach followed has been to design the case study to undertake specific interventions and observe the event supported by data. This has come from recording events during the time horizon and looking for internal documentation notable emails and reports from board meetings, planning meetings and project reports. The action research real time collection of data on the four interventions each with a clear but different category within the Lavie *et al.* construct allowed investigation of different structures to achieve ambidexterity each with multiple sources of evidence. The data collected was continuously analysed along with the interview data to form conclusions and help build the toolkit questions and template underpinned by three theoretical frameworks.

The experience of such events, blockages and corrective actions taken helped to ensure the proposed pathway was based on practical challenges and considerations which enabled the

development of a set of robust toolkit questions practitioners should answer prior to commencement of the ambidexterity journey discussed in Chapter 7. The independent interviews designed after pilot interviews provided support to the case study data. This is summarised in the following table.

Data Type	Description
Event logging notes	Case study diary of events maintained separated into 11 functional categories (markets financial etc.). Event timelines cross referenced to internal document or emails with quarterly reviews.
Pilot interviews	Informal notes from 5 pilot interviews, 4 meetings with Doctorate cohort colleagues. 20+ telephone calls with owner managers during interventions.
Case study emails	200 + emails considered out of over 50 emails per day (750 over research period) relating to business issues in my CEO role.
Case study documents	318 documents by business functional categories cross referenced to the 4 intervention files with 100+ referenced in thesis (Appendix 4).
Follow up discussions	Regular phone calls to discuss issues and seek opinion on case study events with interviews including those from pilots.
Independent interviews	8 interviews with owner managers before data saturation. Each was also managing director-decision maker, all had over 20 years' experience. Interviews lasted up to 2 hours, with follow up calls to support transcript interviews.

Table 3. 1 Data Sources

The pilot interviews were held with colleagues on the doctorate cohort, owner managers and professional advisors and consultants. This commenced a year in advance of the case study to understand what data could be obtained. These interviews were to gain an understanding of how exploration and exploitation was undertaken, practical strategy links to ambidexterity and what theoretical understanding existed. It also acted as a rehearsal for myself as the researcher to ensure my interviewing technique was appropriate to tease out the answers from relevant questions and avoid simply listening to owner managers opinions without examples or validation. This was especially important as the interviewees

knowledge of ambidexterity theory was limited and so the actual interview questions needed to avoid use of academic jargon and unknown concepts whilst still gaining an insight into how the owners conducted their exploration and exploitation activities (Appendix 6).

The choice of case study firm followed a theoretical sampling approach to ensure sufficient insights into initiation and pre-commencement issues and case study alignment (Yin, 1994). This was an important factor to allow generalisation of the toolkit. In the case study the initiation was pre-determined as the researcher-practitioner had the benefit of doctoral research, workshops and an extensive ambidexterity literature review and so the case study initiation path is atypical of owner managed businesses. The case study data sources were rich in both content and scope which allowed an in depth understanding of the business, its markets and actors' behaviour. The acquisition of a competitor pre-commencement saw a strategy review undertaken with the input of all stakeholders with strategy consultants.

Case study data sources included board and management meetings and project notes from senior to junior managers with over 130 documents, emails, reports and meeting notes included in the Mendeley referencing system to support findings. Events were cross referenced to an extensive range of documentary evidence allowing analysis from commencement to action to outcome. Normally this information is too confidential for firms to risk passing on to a third-party external researcher or may be withheld for risk of upsetting colleagues or reflecting poorly on performance. This methodology challenge did not exist due to my position as CEO, allowing access to all information. It ensured access to data sources relevant to the research question and provided relevant events from real experience supported by knowledge. The involvement of several key managers avoided the common criticism of research becoming a lengthy autobiographical account, subject to the bias of one individual's view of events (Atkinson and Delamont, 2005).

Real time data collection avoided a looking back or merely observing role. Detailed information was collated within the Mendeley software to compare to the four interventions, measure performance and examine outcomes. The data includes internal and external documents to support statements made and access to a range of managers involved in the decision-making process to avoid subjective unsupported opinions by myself.

The four exploration and exploitation interventions established clear boundaries whilst at the same time were sufficiently broad to ensure companywide testing and analysis to have a holistic view of how a company becomes ambidextrous. Each intervention had a project leader to establish objectives, implement the plans and monitor results. This dynamic iterative approach allowed reflection and return to the data to understand the context (Eisenhardt, 1989).

The predetermined interventions had a sufficient time horizon to allow the observation and continuous collection of data, pre-commencement, during the initiation process and throughout the pathway journey. This cemented action research at a high level, where the researcher has a clear grasp of the theoretical literature, is an embedded academic observer, the experiment originator and part of the management team creating and participating in events. This collection methodology tried to replicate a controlled laboratory field test approach with environment control to minimise random influences or where they did occur able to assess their impact. As with any field test the results are improved by increasing the number of trials undertaken.

The interventions presented a detailed insight and enabled data collection into how antecedents such as organisational structure, resources and environments effect the initiation and pathway to ambidexterity. During the time horizon period several individual identifiable events were documented, some of which resulted in a conscious decision to reassess the methodology used to achieve ambidexterity. This methodology for both the interviews and the longitudinal study help to extend the existing theoretical Raisch *et al.* pathway by providing specific practical guidance and consideration of the additional stages; pre-commencement and monitoring. It also provided practical recommendations to expand upon the Zimmermann *et al.* initiation process, notably the transition to a formal charter definition process.

The interviews are aligned to engaged scholarship, bridging the sometimes irreconcilable gap between theory and practice found in academic papers. This approach creates more penetrating knowledge than a scholar or practitioner pursuing the phenomenon in isolation (Van de Ven, 2007). All interviews were conducted in person to enable body language, mannerisms and personal traits to be recognised. This was useful in determining when to

search further for information and when to keep the conversation flowing rather than simply answering questions and waiting for the next question. In all the interviews the opportunity existed to engage in follow up calls or second interviews if required. The interviews were of no fixed length and the time determined only by the questions, responses and subsequent drilling down to gain a more in depth understanding (Appendix 6). They were all anonymised as agreed prior to the commencement and so gave the interviewee a greater willingness to be open in discussion of sensitive areas of the business. The WBS interview protocol and ethics guidelines. All interviews had the WBS consent forms completed and were countersigned by me. The nature of the consent was also verbal explained prior to the commencement of formal recording to allow an open discussion and any reservations to be discussed. No such reservations were forthcoming. There was a clear explanation of my role and the need for me to follow acknowledged academic research guidelines and the right of the interviewee to subsequently discuss with WBS if they so wished. These consent forms are maintained by me as they contain details which would remove anonymity if stored in the university archives. All interviews were recorded and collated for an initial review to see if any further information or clarity was required. These recorded interviews were transcribed verbatim within a few days to allow for any clarification with the interviewee before details had been forgotten. I was fortunate to have secretarial support, so this allowed for two people to be listening to the recording to avoid missing any words or typing errors. Original recordings and transcripts have been saved, but not included as part of this thesis due to the confidential nature of much of this information.

The interviews were chosen to offset any weakness in the case study selection caused by my atypical situation. The interviewees selection was based on my own knowledge of these businesses where greatest information could be obtained. This risks a bias from not selecting randomly but the theoretical sampling approach was deemed more appropriate (Yin, 1994). However, the objective was not to get statistically valid samples. This understanding of the owners' business models prior to the interviews improved the quality and management of the interview process and ensured the time spent on the interviews was directly relevant to the research (Appendix 6). Because a trust relationship existed the interviewees were more open to discussing commercially sensitive issues. Each of the interviewees was involved day to day as an owner manager, often in the most senior leadership role in the organisation, with at least 5- years involvement in the role. Therefore, knowledge and responsibility for

the firm's strategy and key decisions was a given. The subsequent formal eight interviews with owner managers were conducted throughout the time horizon. They were aligned to support the case study, conducted as and when specific case study findings needed further investigation. They provided an independent source of information to understand how exploration and exploitation was undertaken. This was especially valuable when trying to understand the role of strategic orientation and its impact on ambidexterity discussed in the interview findings in Chapter 4. The interviews are not intended to build theory and so no attempt was made to look for a large number of interviews (Lee and Lings, 2008) and in the latter interviews data saturation was evident.

The interview questions collected data to support the four research objectives (Appendix 6). Firstly, identifying practical approaches to the three theoretical constructs. Secondly, to enable a comparison of findings to the longitudinal case study. Thirdly, to understand a firms' environment when trying to explore and exploit with specific reference to turbulence and complexity; a regular feature of business life often overlooked in theoretical work. Fourthly, to consider how firms initiated exploration and exploitation activities and the relevance of path dependency. The ambidexterity concept, unsurprisingly, was not well understood by many interviewees. The open question methodology allowed this proposition to be gradually introduced by initially using more common business language as the open questions were followed by further in-depth questioning and feedback, allowing the conversations to drill down into how each firm managed exploration and exploitation within its strategy.

Both interviews and the case study collected longitudinal data, selecting businesses where the senior leadership team had been in situ for several years, often more than 10 years. The same semi-structured questions were used in all interviews. These open questions allow interviewees to develop their answers, rather than a more structured yes, no, or short answer collecting data rich content. These questions identified examples of exploration and exploitation within two specific domains; products and markets. This ensured subject focus and avoided becoming personal narratives, even if a structured approach was adopted. The questions included confirmation a strategy existed which could support ambidexterity to exploit and explore, followed by the examination of actual examples of exploration and exploitation undertaken. The process was controlled to allow specific cross reference to

product and market domains. In each example there was consideration of antecedents, resources, trade-offs, moderators and modes used so linking the interviews to the Lavie *et al.* construct. This systematic approach helped tease out answers to specific questions and ensured each framework category was considered and new ideas were not overlooked. This allowed a clear understanding of the exploration and exploitation journey and how it was balanced. This methodology enabled an eight-stage process to be undertaken as summarised in the following table.

Source	Process
Pilot interviews	Owner managers and doctorate cohort known to myself, so I had knowledge, trust and understanding.
Case study pre intervention	An acquisition had reset the strategy with a clear starting point acknowledging path dependency.
Case study conceptualisation	Pilot interviews, literature review and strategy papers enabled design of interventions, initiation charter and pathway.
Case study data	Designed to match strategic goals, real time data collection, reviews, feedback and link to interviews.
Independent Interviews data	Semi structured interviews to compare and contrast to case study or reframe case study to aid triangulation.
NVivo and Mendeley software	Transcribed Interviews and case study documents coding of qualitative data into quantitative results. Foundation categories per Lavie <i>et al.</i> construct, whilst open to new categories.
Analyse of data	NVivo databases separately analysed case study and interview data to avoid blended results blurring patterns. Separate results then combined to analyse, compare and triangulate.
Revisit literature	Cross referencing to three frameworks and practical findings to literature to ensured toolkit aligned and literature extensions.

Table 3. 2 Methodology Process

3.5 Analysis

The analysis of the data requires the correct methodology design, which is provided by the case study, interview and the three theoretical frameworks (Yin, 2018). Firstly, they were valid constructs obtained from extant theoretical research. Secondly, internal validity was achieved from pre-determined interventions reducing causality criticism. Thirdly, external plausibility was achieved by supporting the internal case study with external independent interviews. Fourthly, reliability of data was obtained as I had complete access to all company data. As seen in the previous section a plethora of data existed and the first task was to analysis it to reduce it to only relevant information and look to identify relevant parts for coding within the Lavie *et al.* construct. The interplay and linkage of the data sources of literature, case study and interviews provide the foundations of how this data was analysed as shown in the diagram below.

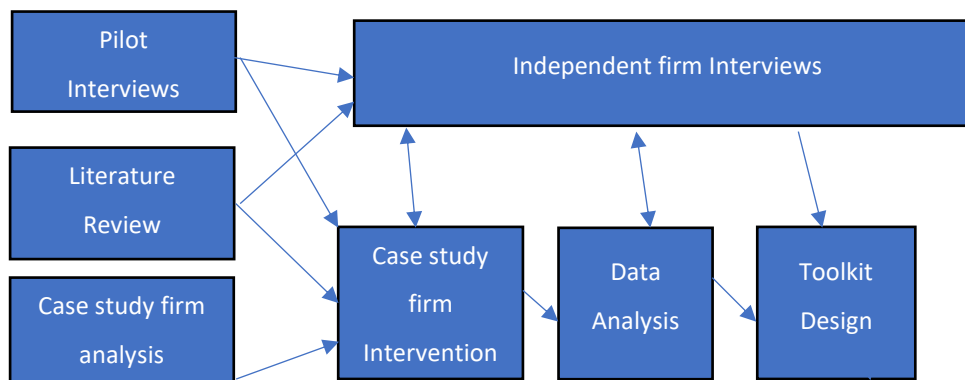


Table 3. 3 Overall Data Analysis

3.5.1 Case Study Design

The design established solid transparent foundations around the three theoretical frameworks underpinning the case study interventions with an embedded methodology (Yin, 1994). The frameworks acted as a reference point when developing the semi-structured interview questions which allowed testing of patterns and themes to support or disprove theory (Eisenhardt, 1989). The research sits alongside the independent interviews and enhances findings by providing a deep understanding of the dynamics of a single case study

(Eisenhardt, 1989), whilst reducing the single case study criticism of its inability to present a generalised contribution (Sato, 2016). The study of organisational change brought about by the attempt to become ambidextrous required a detailed longitudinal analysis (Pettigrew, 1990), approach incorporating ethnographic methods to understand the behaviour and culture of actors in the case study firm (Eisenhardt, 1989) as CEO, constantly observing. The acquisition allowed a clean starting point and a natural separation of the pre and post intervention periods. This resulted in four specific ambidextrous interventions being required, one of which was a cross-functional ambidextrous approach (Voss and Voss, 2013). Each of the four interventions were ring-fenced as a controlled experiment with boundaries, management ownership, accountability and measurable outcomes. Four interventions were required to attempt to transition the case study firm into an ambidextrous organisation. There was also technically a fifth “non-intervention” insofar as the remaining parts of the business were left to operate in the same mode as pre intervention, undertaking day to day exploitation activities. This fifth intervention comprised support services, finance and logistics. At the outset it was possible to define the mode; contextual or structural, the charter definition process; emergent or mandated and determine the exploration-exploitation objectives. At the same time considered vis a vis the interviews and literature review.

This is shown in the schematic below.

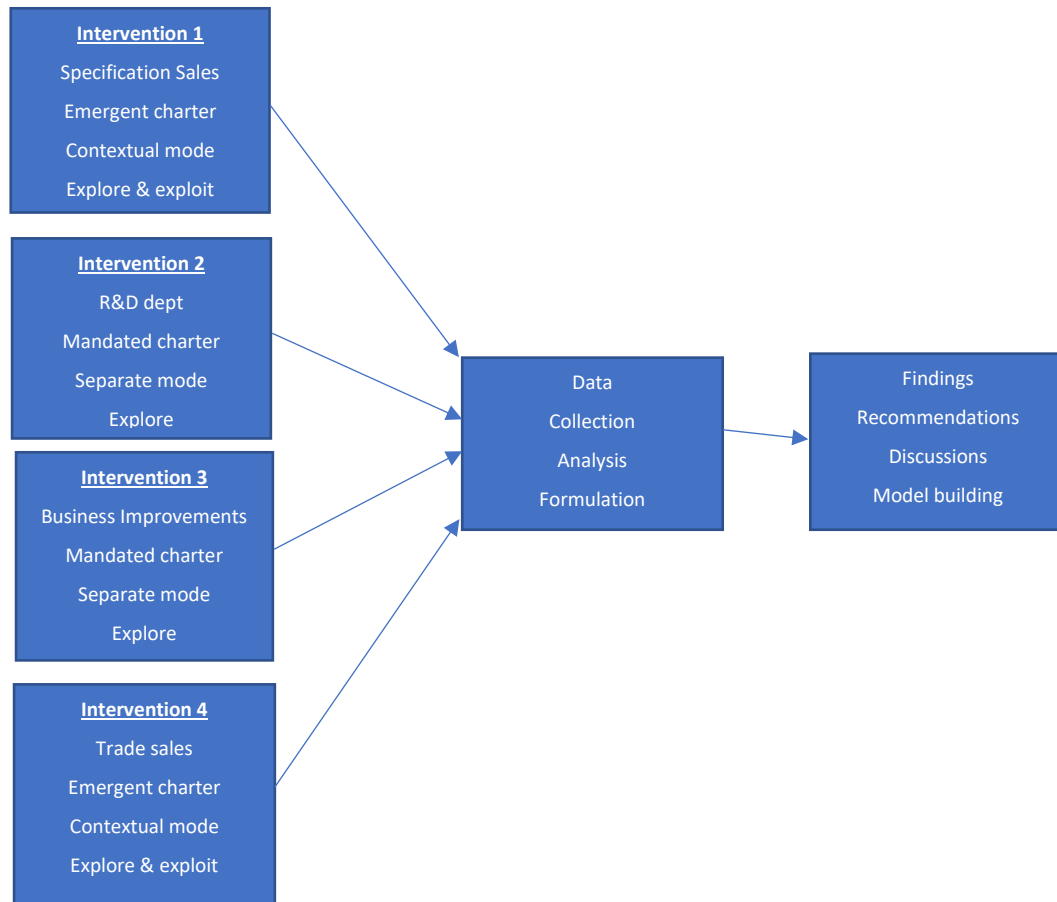


Table 3. 4 Case Study Interventions Analysis

Each intervention was separately designed to guarantee consistency with overall strategic goals. All the interventions commenced at the same time as part of the strategic presentations to the management team (Appendix 4 What success looks like 3 K, 2017). There was no fixed time horizon for any of the interventions, rather specific goals were set which initially were expected to be completed within a two-year period. As seen in Chapter 5 the final outcome took closer to three-years. Pre-commencement the antecedents, resources and trade-offs were reviewed to enable findings to be matched to the frameworks. The collection of qualitative data was continuous, part of the researcher’s day to day role within the business during the time horizon. This data came from a variety of sources described later in this chapter.

These interventions were cross referenced to the Lavie *et al.* construct and relevant documents stored electronically for post event review using Mendeley referencing software. This allowed real time consideration to understand the intervention progress and provide evidence to support the proposed toolkit, cross referencing to each of the relevant interventions to provide evidence to support the narrative. The interventions required various adaptations as the data was collected and analysed to consider the progress made relative to the original outcome goals. The interventions were then amended if required, with the impact of these changes reviewed. This was necessary in two interventions where the modes needed changing in conjunction with the exploration and exploitation objectives. Consequently, the original time horizon to complete the interventions drifted from two to three years. This is discussed in the case study findings in Chapter 5.

3.5.2 Independent Interview Design

The interviewees were selected on the basis they were known to the researcher. This provided two benefits. Firstly, the existing relationship meant there was a greater degree of trust and openness between the researcher and the interviewee, an important consideration in private owner managed businesses where information is not freely available. Secondly, the researcher understood the nature of the interviewees' business and was therefore able to develop semi-structured questions (Appendix 6) and more importantly interpret initial responses to delve deeper with follow up questions to ensure data clarification and themes fully investigated. This selection and design increased the data quality and richness. This design embedded me at the centre of the study from where I was able to understand clearly the organisational context from which the content, organisational behaviour and actions are derived (Pettigrew, 1990). This interview methodology comprised the collection of data to analyse to look for patterns and themes vis a vis the three frameworks.

The robustness of interview findings was verified by posing similar questions to multiple informants and multiple companies (Faems, Janssens and Madhok, 2008). To reduce the risk of cognitive biases and impression management, interviewees were asked to reflect on concrete events on only two specific domains; products and markets, rather than abstract concepts (Miller and Glassner, 1997). The semi-structured interviews ensured consistency

in topics of exploration and exploitation (Atkinson and Delamont, 2005). There was not a pre-planned number of interviews, they were undertaken during the case study time horizon as and when findings required further support or analysis. Also it became evident towards the end of the time horizon there was data saturation (Appendix 5 Interview D, 2019; Appendix 5 Interview A, 2020) with the interviews only confirming previous interviews and no further findings from the case study required verification.

The semi-structured interview questions were designed around the three theoretical frameworks (Appendix 6). There is no attempt to hypothesis test rather to gain a practical deep understanding of the challenges within the categories. The results do not propret to be statistically significant by providing large data samples to utilise quantitative techniques. However, they do allow for categorisation of references to the theoretical frameworks to support the case study recommendations and enhance the validity of the toolkit questions. The results of this NVivo categorisation and the weighting of each category is summarised in Appendix 2.

The interviews reflect and respect individuals' ways of organising meaning, such as the "how and why" leading to theory extension (DeVault, Sagae and Traum, 2009). These interviews provide the data to analyse the journey from introduction to execution to outcome. The prodding, probing and pausing can get more from an interviewee as personal narratives can emerge at unexpected moments in interviews. This approach has resulted in contributions to all three frameworks discussed in Chapter 6.

3.5.3 Strengths of Methodology Design

To obtain confidence in case study findings it is beneficial if an a priori specification of constructs exists as it is valuable, enabling and improves measurability (Eisenhardt, 1989). This was achieved by anchoring the methodology around the three frameworks. The knowledge of an organisation allows a greater ability to analyse. As CEO I had an inherently strong understanding of the case study firm, thus reducing the chance of omission or misunderstanding. Being embedded in the firm ensured a good relationship existed, giving full access to all those participating in the interventions. The interventions were determined

within my overall strategy role, managed coterminously with the role of researcher giving me access to unlimited continuous data sources. The ability to commence actions, monitor events, measure outcomes, amend interventions and analyse their impact defines this case study's strength. The case study also benefits from the ability to instantly return findings back into the business and analyse the results providing strong action research evidence and reducing causality criticism.

The methodology design as an in-depth action research case study supported by independent interviews provided an ideal context and data source to examine the transition to ambidexterity for several reasons. Firstly, there was a clear starting point for the changes. Secondly, each stage of the journey was pre-planned, documented and managed in real time. The data extracted was examined vis-à-vis the three theoretical constructs, so reducing the random chance of patterns or assumed matching of data. Thirdly, as the researcher and also the manager of the process a holistic approach was possible whereby a "helicopter" overview and "micro examination" or "bungee jumping" into short term problems could be combined. Fourthly, the ambidextrous journey was enhanced by undertaking four interventions, not just one. This enabled the cross examination of ambidexterity concepts including initiation, role of antecedents, choice of mode, pathway stages and the impact of complexity and turbulence on each intervention. Finally, the research was undertaken over a three-year period which allowed resetting and changing pathways to find common themes and patterns as real time feedback highlighted issues to further examine (Eisenhardt and Graebner, 2007). The combination of these factors ensured reliable data rich evidence to support the development of the practical ambidextrous toolkit proposed.

The independent interviews provide a valuable additional source of qualitative data. They allow consideration of the same factors as the case study via specific questioning on antecedents, resources, modes, trade-offs and outcomes. They presented real examples of events and how they were managed; useful for comparing to both the framework constructs and the case study findings. They acted as a sense check, reducing uniqueness criticism and improving generalisability. The interviews also contributed in their own right to establishing the initiation and pathway process that firms adopt to explore and exploit.

Remaining close to theoretical constructs is important in the context of longitudinal research as it tries to unravel the underlying dynamics of the phenomena playing out over time. It ensures the practical template is anchored to peer reviewed academic empirical research. As scholars increasingly appreciate the role of dynamic processes, such as path dependency or evolutionary processes, this research answers the calls for rich longitudinal research to provide details of how these processes actually play out (Chang, Hughes and Hotho, 2011; Cantarello, Martini and Nosella, 2012; Divinney, Dowling and Wilden, 2016).

3.5.4 Weaknesses of Methodology Design

All research has potential weaknesses and a single case study research approach is no different. These needs to be brought to the attention of the reader to assess how this research tries to overcome these challenges. Firstly, there is the risk of a loss of broader perspective when there is only one researcher. An individual voice is never as strong as collective voices. This researcher has benefited from two academic supervisors to broaden outlook and regular input from a 16 strong doctorate cohort. There is also data documentation provided by the case study management team from assessment of the interventions expressing their own independent opinion. Additionally, the interviews helped bring a broader perspective from several owner managers which acted as a sense check for the researcher's own assessment of events.

Secondly, as researcher-practitioner there is the risk of a loss of neutrality. Sometimes controversial events may not be recorded, memory loss or misrepresentation (Leonard-Barton, 1990). The real time recording of events addressed the issue of memory recall and the cross referencing to documents minimises post action rationalisation. The neutrality loss is unlikely given I was also the CEO and not testing performance but looking for methodology. Also, there were no external stakeholders so the need for confidentiality and performance justification is diminished. The event recollection is overcome by over 300 documents being cross reference to this thesis to reduce the risk of opinion rather than fact influencing findings and statements. I was focussed on interpreting data rather than defaulting to personal intuition (Saldana, 2013).

Thirdly, there is a concern of theoretical frameworks being influenced by dominant discourse or ideology. This can be dismissed as the three independent frameworks are utilised to cross reference to actual data to avoid unsupported researcher opinions. In addition, the interviews with separate owner manager firms and triangulation also act as a mediator to reduce the researcher's opinions dominating findings.

Fourthly, longitudinal case studies can lack rigour compared to large sample studies due to lack of statistics (Meredith, 1998). This is not true of this research, the case study, coupled with interviews, is a step forward from surveys allowing factual traceable data rich information over an extended time that cannot be controlled or distorted (Yin, 1994). As the CEO I had unfettered access to information so minimised the challenges to longitudinal case study research of limited access (Karlsson and Ahlstrom, 1997).

Fifthly, the causality challenge, the longer the study the greater the risk participants may not recall important events or may be subject to bias with post action rationalisation (Leonard-Barton, 1990). This research approach with premeditated, documented interventions actioned, observed, outcomes analysed and measured in a real time overcomes this risk.

After proposing solutions to all the above weaknesses, the criticism of a single case study being limited in its ability to generalise conclusions may remain. It is up to the reader to reach their own conclusions, but in doing so should remember this thesis benefits from the independent interviews, three theoretical frameworks, four case study interventions and triangulation of findings to address the research method weaknesses identified.

3.5.5 Coding of Data

To assist and improve the data analysis during the time horizon Mendeley referencing and NVivo data management software was used. Mendeley software was used to create databases and mark ups of original documents, interviews and academic papers. All data was recorded in Mendeley to provide a single repository and allow referencing of the actual documents within this thesis. NVivo is a Computer Aided Qualitative Data Analysis Software (CAQDAS) used to find patterns and themes from qualitative documents by identifying from

review of relevant documents (Gioia, Corley and Hamilton, 2012). In my research it was used to turn qualitative documents into quantitative data. Whilst not used for statistical confidence testing it did allow findings to be weighted in numerical values using accepted coding protocol (Linneberg and Korsgaard, 2019). NVivo does not replace established case study and interview methodologies, it still requires the researcher to apply recognised coding practices and methods (Saldana, 2013) to develop questions, investigate documents, analyse data and formulate outputs for large data sets. This made analysis and processing easier (Lee and Lings, 2008) via a case study database which provided a chain of evidence from pilot interviews to design of the practical toolkit. It ensured the case study had confirmatory evidence from multiple sources to validate findings and investigates rival explanations of outcomes (Yin, 2018).

NVivo software also allowed for separate databases to be maintained for the case study, interviews and literature which after individual analysis were subsequently combined to triangulate data to look for overall patterns to support the toolkit framework, allowing a more robust systematic triangulation methodology (Eisenhardt and Graebner, 2007). The triangulation was especially useful when the literature review was revisited as it enabled comparison of practical findings using key themes to be identify with supporting literature. This process is shown diagrammatically in Appendix 7 (Gioia, Corley and Hamilton, 2012). This has enabled contributions to academic papers and validation of the practical methodology of the toolkit in key areas including: strategy as an antecedent (Posch and Garaus, 2020); how ambidexterity emerges (Sinha, 2019) and hybrid ambidextrous modes (Ossenbrink, Hoppmann and Hoffmann, 2019; Foss and Kirkegaard, 2020).

Open coding of both the case study and interviews was performed to analyse data with the Lavie *et al.* construct as a starting point for categorisation to bring clarity and find themes and patterns (Corbin and Strauss, 2012). This enabled the linking of the case study and interview data to the three frameworks of Lavie *et al.*, Zimmerman *et al.* and Raisch *et al.*

During the research time horizon, I performed a monthly companywide review to analyse the four interventions and how the ambidextrous transformation was progressing. It was part of my normal business role to examine the strategy and business planning, so was undertaken in real time, not left for a formal review period or research visit observing events

as in many case studies. In doing so the relevant documents were instantly saved as supporting data evidence. These were stored in the Mendeley referencing system in separate folders, one for each of the four interventions for subsequent analysis. This data analysis was looking for the practical applicability of the three frameworks of exploration and exploitation Lavie *et al.* construct, the Zimmermann *et al.* initiation process, and Raisch *et al.* ambidexterity pathway. This provided an initial NVivo categorisation of information to be used for themes and patterns to emerge and be coded. Each document was examined, and the relevant information highlighted. After this manual analysis the NVivo qualitative analysis software was used to avoid subjectivity and give more quantifiable results rather than just relying on insertion of quotes and references in isolation. The use of the frameworks acted as a first round of coding in the NVivo software and so enabled the large volume of documents to be reduced to allow a more relevant summary of information. At this stage no attempt was made to reach any conclusions rather to wait for the interplay of data (Corbin and Strauss, 2012). From the case study new node categories emerged notably the idea of strategy as an antecedent in the Lavie *et al.* construct. Similarly, the line by line analysis of the data collected led to the development and addition of a second tier of new NVivo node sub-categories notably the pre and post impact of the interventions. This data analysis enabled categories, concepts and themes not covered in any of the three frameworks to be identified and to form part of the discussion of findings of both the case study and interview Chapters 4 & 5 from which the ambidexterity toolkit and specific questions could be designed to provide practical guidance to answer the “how to” question. This data analysis provided several toolkit contributions. Firstly, it brought to the forefront the need to analyse an owner managed strategy for alignment with ambidexterity as questions were designed to tease out the potential disconnect. Secondly, it added a pre-commencement stage to the initiation of ambidexterity by highlighting the importance of path dependency and unique “informal” characteristics of owner managed firms which need to be addressed before commencement of the Zimmermann *et al.* initiation process. Thirdly, it reiterated the need to specifically consider the impact of turbulence and complexity on initiation charter and organisational mode choices. Fourthly, the time horizon revealed the importance of monitoring the ambidexterity journey and in doing so was instrumental in adding a final monitoring stage to the Raisch *et al.* ambidexterity pathway.

The analysis of data collected from each of the interventions and the interviews was put into separate NVivo databases and analysed individually. The four interventions data were then consolidated to analyse again to reduce the criticism of findings from only one intervention. The data analysis looked for patterns and themes in both the case study and semi-structured interviews (Eisenhardt and Graebner, 2007). These were found in the qualitative data analysis via cross reference to the Lavie *et al.* construct categories whilst utilising an open coding technique to identify any new categories. This coding structure is shown in Appendix 8. This approach allowed the theoretical framework categories to act as main categories (NVivo “nodes”) whilst allowing sub-categories (“sub nodes”) to be added. This approach was also used in the interviews. The analysis of data from both interviews and case study allowed the embryonic findings to be further considered and compared to improve the triangulation of results (Baxter and Jack, 2008). This was useful to find data to support the findings of what triggers ambidexterity initiation from an often nebulous strategy (Appendix 5 Interview D, 2019).

This analysis allowed the development of ideas, identification of themes and verification of findings to provide evidence to support the statements made in the case study findings in Chapter 5. Once this analysis had been completed it gave supporting evidence for the practical toolkit in Chapter 7. The data analysis also provided practical experience as to how a practitioner may wish to consider influences on the effectiveness of an ambidexterity pathway, such as complexity and turbulence. The importance of considering turbulence in the environment, complexity of the organisation and the tensions they bring were identified in the literature review (Farjoun, 2010; Papachroni, 2013; Agyei, 2017; Uotila, 2018) and confirmed their relevance and allowed practical solutions to bypass potential obstacles. This was possible as parts of the intervention were trial and error and real time data analysis allowed assessment, revisit, revision and recalibration of the subsequent outcome. It was also useful to understand the path dependency, informality and strategic orientation at the initiation stage (Appendix 5 Interview E, 2018). The NVivo coding methodological stages used

in sourcing, collecting and analysing the data from the case study and interviews is summarised in the table diagram below.

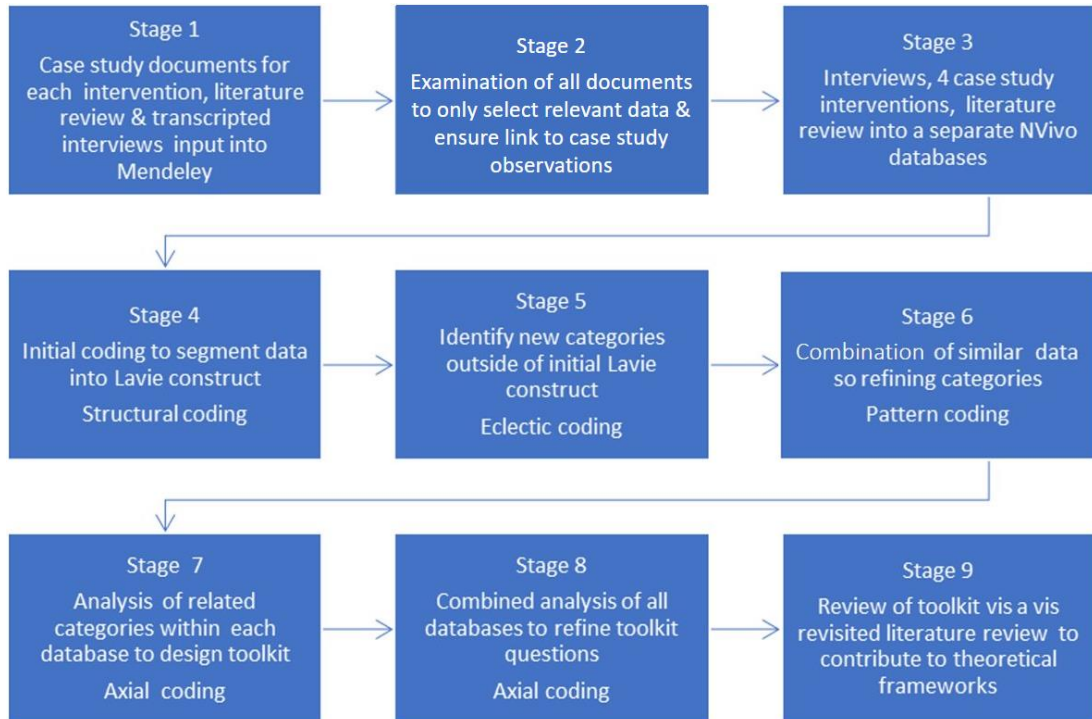


Table 3. 5 Coding Process

The interviews also presented documented companywide data rich content from eight separate businesses. These interviews were also analysed vis a vis the three theoretical frameworks and the case study data to find themes or patterns and triangulate. The interviews were conducted coterminously with the case study which enabled comparison of interview findings and case study data giving immediate feedback to the semi-structured questionnaire process. Equally the interview data could be analysed as the interventions occurred to examine instances where case study data was inconsistent or confirmatory with the interview data. This helped to improve the robustness of the toolkit. The analysis of data and actions applied are summarised in the following table.

Analysis	Actions
Technique	Analysed into Lavie <i>et al.</i> construct. Open to new categories, each separately analysed to find themes or patterns.

Analysis	Actions
Case study data	One database with four intervention sub-databases. Allowed individual themes. Emerging themes used in interviews to support or challenge findings.
Interview data	Same approach as case study but only one database. Again emerging themes were considered vis a vis the case study.
Joint data / common themes	Emerging case study themes during the time horizon were considered in interviews and vice versa.
Jointly of case study and interviews	After the separate NVivo analysis of databases the results were combined to triangulate to considered / identify any joint patterns.

Table 3. 6 Data Coding Analysis

3.7 Revisiting Literature

The data analysis included the case study, independent interviews and cross referencing the practical findings to the literature review. The literature review and theoretical research commenced a year prior to the commencement of the three-year case study and interviews. Equipped with this initial academic research pilot interviews were performed and analysed pre-commencement to design semi-structured questions and helped conceptualise the case study interventions. Literature was constantly revisited during the subsequent intervention period as practical findings needed further investigation and looked to academic papers to support the toolkit. A final literature review was undertaken once practical findings had been analysed to ensure complete cross referencing and triangulation of practice and theory.

Armed with the analysed practical findings from all research sources it was possible to design a set of toolkit questions to integrate into the three theoretical frameworks giving practical robust recommendations. The literature was revisited with specific emphasis on this thesis' key findings to identify any contrary or supporting research. This was particularly relevant for turbulence (Romanelli and Tushman, 1994; Lin, McDonough and Lin, 2013) and leadership

complexity (Havermans, Hartog and Keegan, 2015). The consideration of relevant literature on mode selection and effectiveness was also revisited as two of the interventions moved from contextual to structural modes (Devins and Kähr, 2010; Fourne, Rosenbusch and Heyden, 2019). This change also required a short term punctuated mode intervention by myself during this change (Uotila, 2018) and an eventual hybrid mode (Ossenbrink, Hoppmann and Hoffmann, 2019) or blended (Foss and Kirkegaard, 2020) ambidexterity mode. This enable the toolkit to be derived from an initial theoretical framework, but then as a result of practical findings to look back to add additional theoretical research to extend the toolkit by considering strategy as an antecedent (Posch and Garaus, 2020) and how ambidexterity initiation emerges (Sinha, 2019).

The process methodology adopted of literature review and revisiting, theoretical framework positioning, practical interventions and interviews created a virtuous research circle. It allowed consideration of practical suggestions to expand existing theoretical frameworks. These included proposing that an informal contextual mode may exist for owner managed firms in the initiation process. Additionally, the thesis toolkit proposes an additional pre-commencement stage in the Raisch *et al.* ambidextrous pathway. The revisited literature methodology is summarised in the following table below.

Revisited literature	Actions
Cross referencing	Practical toolkit aligned and a contributed to literature.
Theoretical framework expansion	“strategy an antecedent” (Posch and Garaus, 2020), “Hybrid modes” (Ossenbrink, Hoppmann and Hoffmann, 2019) and emerging ambidexterity (Sinha, 2019).

Table 3. 7 Revisiting Literature

3.8 Generalisation

The methodology has addressed the challenge of generalisation in several ways and avoided the single study criticism of boundary limitations in a unique environment, addressing limited business functions with no practical framework able to be adapted by a practitioner.

Firstly, the methodology has its foundations firmly rooted in extant literature and able to call on three theoretical frameworks which underpin a practical ambidexterity toolkit where its questions allow a bespoke solution to be derived. As such there is a standard approach to design a repeatable solution which is not based on opinions with no theoretical home.

Secondly, each of the four interventions were part of the pre-commencement strategy with a clean starting point as a result of the acquisition of a competitor. The interventions were not drifted into, rather pre-planned projects. This allowed a set of systematic inductive methods for conducting qualitative research aimed toward practical development of existing theory (Cao, Simsek and Zhang, 2010).

Thirdly, the access to information made this case study data rich in depth research with over 300 internal documents used. The extensive cross referencing to statements avoided this research becoming a lengthy autobiographical account (Atkinson and Delamont, 2005). Instead it was able to present actual business examples to support its proposed toolkit methodology as to how to become an ambidextrous organisation.

Fourthly, the single case study was supplemented with cross referencing of the interviews so providing multiple independent sources and avoiding unique findings from one organisation. The use of the NVivo qualitative analysis software provided analytical rigour and statistical logic to this process.

Chapter 4 Independent Interview Findings

4.1 Introduction

The independent interviews were undertaken with owner managed firms over a three-year period unconnected to the case study firm. The formal interviews were developed from pilot interviews and informal discussions with owner managed firms and my doctorate cohort. These initial pilot interviews highlighted a lack of understanding of the ambidexterity concept. This assisted in the design of semi-structured questions to tease out exploration and exploitation information rather than attempting to discuss ambidexterity in theoretical terminology unknown to the interviewee. The interviews are not included to present standalone evidence or recommendations. They are an additional independent source of rich data to allow triangulation of case study themes and support recommendations. The findings of the semi-structured interviews overlays the case study findings to support the proposed toolkit in Chapter 7 and limits criticism of the research being based on my opinions or one case study findings.

4.2 Antecedents

4.2.1 Strategy

The alignment of strategy is often overlooked in ambidexterity research, it is an implied assumption that a strategy is already in place and consistent with an ambidextrous pathway. All but one of the interviewees considered strategy, but none regularly reviewed it. Exploitation and exploration activities were considered, although usually without using such terminology until prompted. Strategy was considered when questioned and could be elaborated on but was undocumented. It was cited in interviews 27 times with three main strategic orientations identified. Firstly, a lifestyle or survive strategy, *“we have no big*

aspirations” (Appendix 5 Interview G, 2019). Secondly, a defender or follower strategy *“we follow the leaders”* (Appendix 5 Interview F, 2020). Thirdly, a growth strategy focused on exploration, *“branch out into other markets”* (Appendix 5 Interview E, 2018). These findings support this thesis’ proposal of an ambidexterity pathway requiring a pre-commencement review to establish if a firm’s strategy is aligned to ambidexterity. If not an attempt to become an ambidextrous organisation may not enhance performance and distract from strategic goal achievement.

Whilst evidence of a strategy could be found there was inconsistent evidence of scenario or *“what if?”* planning, *“we realised it was not long term for us”* (Appendix 5 Interview G, 2019), *“what do we do now”* (Appendix 5 Interview H, 2018). Several examples were described where a pre-commencement analysis may have helped these businesses to identify issues and plan exploration and exploitation activities rather than react, *“adverse conditions are going to take place every year”* (Appendix 5 Interview F, 2020). The commencement of exploration and exploitation activities was always with no formal understanding or consideration of any theoretical ambidexterity construct, *“It’s like the cavemen mentality, if you’ve not had anything to eat you’re just bothered about getting through the day and 5 years seems miles away”* (Appendix 5 Interview D, 2019), *“you go with your gut feeling”* (Appendix 5 Interview G, 2019), *“It’s nearly all down to cashflow”* (Appendix 5 Interview C, 2019), *“all that leads down to my educated guess on red or black”* (Appendix 5 Interview E, 2018).

These findings support the call for a pre-commencement review stage in my proposed toolkit to ensure the alignment of strategy with ambidexterity and consideration of scenarios to assess their impact, notably when turbulence or complexity exists or may increase as a result of the attempt to become ambidextrous. These findings are summarised in the table below.

Antecedent: Findings and toolkit considerations.	
Strategy	
Strategic planning	Not always consistent with ambidexterity goals. Usually undocumented and informal.

Antecedent: Findings and toolkit considerations. Strategy	
“What if” analysis	Rarely undertaken. If considered and analysed may have reduced complexity and turbulence impact.
Strategy as antecedent	Not a category in Lavie <i>et al.</i> construct. Recommended for inclusion into the framework as an antecedent to confirm consistent with ambidexterity goals (Sinha, 2019; Posch and Garaus, 2020).

Table 4. 1 Strategy Antecedents Findings

4.2.2 Organisational

Organisational issues were coded 73 times in interviews, more than any other category, with themes of culture, absorptive ability, slack and structure. A strong culture was identified coupled with clearly established leadership and the frequent use of “I” rather than “we” (as in the management team) when discussing events. This was unsurprising given the interviewees were stakeholders involved day to day in the business. However, it raises an important consideration for owner managers as to the choice of organisational mode. Ambidexterity requires a degree of autonomy and owners to slacken their control and delegate functions and management. This challenge to change may be compounded if informal organic, rather than formal mechanistic structures have grown over many years. Such informal organic structures were prevalent in all but one of the interviews. When combined with a predominately tacit knowledge system it hinders the pathway to ambidexterity making communication, change and knowledge transfer more challenging.

Finally, there was a constant reminder of the lack of slack, notably people capacity, resulting in activities being delayed, “*only so many hours in the day*” (Appendix 5 Interview D, 2019), “*living on a tightrope*” (Appendix 5 Interview A, 2020). Again, this was consistent with the case study findings. These organisational observations are summarised in the table below.

Antecedent: Findings and toolkit considerations.	
Organisational	
Tacit knowledge	Tacit undocumented knowledge held by a few key people.
Structure	Strong owner manager leadership acting as the fulcrum for key decisions. Requires organisational change to enable effective knowledge transfer, communication and delegated authority to undertake change management to grow.
Culture	“Hands on” owner manager unable or unwilling to let go or delegate. This may deter new management teams from initiating emergent charters or operating in a contextual mode.

Table 4. 2 Organisational Antecedents Findings

4.2.3 Environmental

The environment was also one of the most cited categories (43 times), especially the sub categories of competitive rivalry and dynamic markets. In my 30 years in business competitive rivalry has rarely been said to be low by those operating in a market. Therefore, the responses must be treated with a degree of caution. However, themes identified was the inability to influence the market, limited appropriability and product differentiation. These limitations all tended to indicate market or product commoditisation “10 years with no price increase” (Appendix 5 Interview G, 2019) and increased competition “too much competition” (Appendix 5 Interview E, 2018). This was exacerbated by exogenous shocks “markets disappeared overnight” (Interview P, 2018) and frequent dynamic changes “everything has opened up” (Appendix 5 Interview H, 2018).

Interviewees emphasised the turbulent environment often outside their control and the need to react to events. When coupled with no slack, limited resources and a small cohort of key, often multi-tasking people, it created a difficult environment to implement an ambidextrous journey. The environmental observations from the interviews are summarised in the table below.

Antecedent Environmental	Findings and toolkit considerations.
Exogenous / endogenous shocks	Regularly disrupting firms and requiring additional resources. Resulting in reactive management behaviour and strategic orientation as a “follower or reactor”.
Dynamism	Frequent occurrence outside of firms’ control causing turbulence and inability to consider longer term objectives.
Competitive rivalry.	Constant due to inability to differentiate. Differentiation limited by resources and need to focus on short term exploitation.

Table 4. 3 Environmental Antecedents Findings

4.2.4 Managerial

A constant theme was the past experience gained over many years by both the interviewees and the small team around them holding tacit knowledge within an informal structure. This was overwhelmingly positive, with only one negative response. A similar past experience profile existed in the case study, but of limited use when requiring new skills. Whilst performance was not closely linked to experience it would be wrong to dismiss it as the majority of these businesses had existed profitably for over 10 years often overcoming commercially challenging times. It was assumed a degree of self-modesty existed in the answers received as these were owner managers, not employees justifying their value and providing examples of their performance.

Risk profile was referred to in all interviews and found equal weighting between those with high and low risk appetites. These mixed risk profiles could be explained by examining the firm’s strategy with low risk being associated with a defender or lifestyle orientation and higher risk associated with a growth orientation. Irrespective of strategy a common theme was financial prudence with all having a reluctance to financially stretch themselves and only invest once they had their own financial resources. This was a common theme as often their personal and business lives and wealth were intertwined.

This profile of management from interview answers confirms the importance of the pre-commencement stage proposed and toolkit questions in Chapter 7. The interviews confirmed the management profile of owner managed firms supported by a small team with an abundance of past, but similar experience. As seen in the case study this is not ideal when change and paradoxical management skills are required to attempt ambidexterity.

Furthermore, this management profile where the leader is the key decision maker and drives new ventures means a mandated rather than emergent ambidextrous charter is more consistent with the culture and core competencies. This raises the question of what the most appropriate mode is. An informal contextual mode led directly by owner managers was prevalent in all exploration activities whilst overseeing day to day exploitation. Careful consideration is necessary as to whether internal paradoxical management capabilities exist to enable delegation to managers to operate in their own contextual mode with only a supporting and trust role from owner managers. A separate mode allows clearer focus on either exploration or exploitation with less need to balance, allocate resources and develop independent management. This same problem existed in the two sales case study interventions initiated with an emergent charter with managers operating in a contextual mode. After several attempts a mandated charter definition approach operating separate modes was ultimately how ambidexterity was achieved in all four interventions. The management observations from the interviews are summarised in the table below.

Antecedent: Findings and toolkit considerations.	
Managerial	
Risk profile	A clear distinction between those with high and low risk appetites matching a defending / lifestyle or prospector strategy. Additional resources required, so challenging. Financially prudent approach in all interviews. Compounded by difficulty in ring fencing exploration.
Past experience	Long term skilled managers with core competencies led by a strong owner manager. The usefulness of this experience for an ambidextrous journey is questionable. New skillsets and organisational structure required. Experience was useful for exploitation, but not exploration.

Antecedent: Findings and toolkit considerations.	
Managerial	
Past performance	Successful in core commercial activities usually a top down mandated approach with a small team. No past performance or experience of managing via an emergent processes or balancing activities with formal contextual or structural modes, so limiting value in ambidexterity journey. Reliance on networks or alliances.

Table 4. 4 Management Antecedents Findings

4.3 Resources

Resource limitation was the second most cited category, notably insufficient financial resources for exploration activities stopped pathway progress *“the money ran out”* (Appendix 5 Interview H, 2018). All identified finance as a key constraint before considering ambidexterity *“a financial challenge for us”* (Appendix 5 Interview A, 2020), with a reluctance to *“bet the house”* or even leverage the business *“we don’t borrow”* (Appendix 5 Interview F, 2020). This often meant opportunities were not taken *“did not get the finance to push in a bigger way”* (Appendix 5 Interview A, 2020). Therefore, prior to initiating ambidexterity consideration of resource requirements is recommended. The case study also revealed the need for additional financial resources due to turbulence and complexity.

Similarly, people resources, whilst less frequently cited, were also acknowledge as a constraint *“we have not got the right people”* (Appendix 5 Interview C, 2019). The interviews revealed instances where people constraints influenced projects *“only handful of people here who don’t accept the status quo and able to problem solve”* (Appendix 5 Interview B, 2018). This was also a barrier in the case study interventions where existing employees were unwilling to adapt to new exploration and exploitation modes.

The interviews found the approach to managing resources and measuring exploration and exploitation performance was inconsistent. Some suggested measurement processes existed *“data analysing everything”* (Appendix 5 Interview E, 2018) whilst others relied on

their own experience, “do things on an ad hoc basis” (Appendix 5 Interview D, 2019). The measurement system and monitoring of exploration was often an informal unquantified analysis “we have invested a lot of money” (Appendix 5 Interview E, 2018). This informal approach to resource allocation and planning often hindered exploration “the money ran out” (Appendix 5 Interview H, 2018).

All interviews revealed exogenous shocks impacting on resources “market changed” (Appendix 5 Interview A, 2020), “changed at a quick fire pace” (Appendix 5 Interview F, 2020). These issues are addressed in the proposed toolkit questions by scenario planning to identify resource requirements and the potential negative impact of turbulence. The points from the analysis of resource findings are summarised in the following table.

Resources	Findings and toolkit considerations.
People	Limited access to people, reliance on a small cohort of individuals’ tacit knowledge and core competencies. Rarely additional external managers brought in. New activities needed new skills, but instead multi-tasking and juggling exploration with existing exploitation workload.
Financial	Unanimous interview feedback pointed to lack of financial resources. Out of 32 ambidexterity sub categories it was second most cited.
Availability	The inability or unwillingness to access additional finance was a constant theme. Access to finance stopped exploration activities in several of the firms.
Measurement	Exploration and exploitation measurement rarely undertaken to forecast outcomes. When performed it was informal undocumented only in specific project segments. No closed loop holistic analysis.

Table 4. 5 Resources Findings

4.4 Mode

The ambidexterity mode terminology was alien to interviewees, as it was to the management team in the case study. It required a simplified explanation of the concept in terms of a firm's modus operandi to organise exploitation and exploration events. This reiterated the importance of the toolkit recommendations in the initiation and pre-commencement stages, in particular of strategy, path dependency and how antecedents may change post initiation. Most firms undertook exploration and exploitation activities, but in an informal contextual mode with no reference to ambidexterity theory. It was only teased out by seeking examples during the interviews. Most exploration projects were led intuitively by owner managers "*all research and thought is mine*" (Appendix 5 Interview E, 2018) supported by individuals drafted into the project in addition to their existing exploitation role "*got to multi-task haven't you*" (Appendix 5 Interview G, 2019). This research refers to such a mode as ***informal contextual***, as discussed in the literature review in Chapter 2.

The exception to this approach was the use of alliances or networks, usually suppliers, to supplement resources "*working on those alliances*" (Appendix 5 Interview C, 2019). This use of networks as a mode of operation was the most frequently cited mode, more than all the other mode references combined. There was a conscious decision to undertake exploration projects in alliances often utilising the owner's business network "*work with suppliers*" (Appendix 5 Interview E, 2018), "*we joined up with*" (Appendix 5 Interview H, 2018). This was a result of resource limitations and delegation of control to those with additional skills outside the firm's core competencies "*look to learn from the best*" (Appendix 5 Interview C, 2019). Where networks were used it was often as a complementary mode rather than a specific mode selection forming a hybrid mode position linking business contacts, suppliers and customers (Stadler, Rajwani and Karaba, 2014).

Further questioning identified a few instances where sub consciously a defined formal contextual mode operated, albeit with the owner manager involved. This was myself, as a researcher, recognising the mode not one pre-meditated by the firm "*joint venture between myself and the engineer manager*" (Appendix 5 Interview H, 2018), "*I try to keep exploration as separate as possible*" (Appendix 5 Interview C, 2019). Each of these examples support an

intuitive, evolving rather than a pre-planned implementation process. The points from the analysis of modes are summarised in the following table.

Mode	Findings and toolkit considerations.
Understanding	Limited manager understanding of modes. No conscious mode decision making.
Modus Operandi	No formal pre-planned mode selection. Examples of an informal evolving process. Formal contextual mode may fail due to complexity, turbulence, balancing challenges and lack of cognitive depth in teams.
Informal contextual mode	Owner managers operating as “allrounders” able to do everything, sub consciously trying to balance exploitation and exploration. Unaware of ambidexterity research, initiation or pathways. <i>Informal contextual mode</i> , driven by events led by owner manager often “juggling balls” (Appendix 5 Interview D, 2019).
Mode preference	Networks and alliances established for projects with a network mode chosen in 6 of the 8 interviews. More references to this mode than all other modes combined. Compensating for lack of resources to undertake outright exploration.

Table 4. 6 Mode Findings

4.5 Balance

Since ambidexterity was not in the interviewees’ business lexicon it is no surprise to find the interviews confirmed limited understanding of ambidexterity balance. However, whilst no conscious, pre-planned route to balance exploration and exploitation responses did offer insights into how they attempted to balance such projects. In particular, the findings provided support for this thesis to propose a theoretical contribution to add to the Zimmermann *et al.* initiation framework by identifying an informal contextual mode as an initiation starting point influenced by path dependency. It is not mandated or emergent, but instead often driven by external events, “markets disappear overnight” (Appendix 5 Interview H, 2018), or ad hoc opportunities “it was a bit of luck” (Appendix 5 Interview G,

2019), “we tend to do things on an ad hoc basis” (Appendix 5 Interview F, 2020). These were usually led by owner managers following or reacting (Miles and Snow, 2003). This approach to balancing was identified in all but one of the interviews, often coupled with a network mode. The result was no clear identifiable balanced position, because the owners never considered the concept of balancing, it simply evolved as they juggled exploitation and exploration activities. Instead a hybrid situation existed where the owner managers were operating in an informal contextual mode, supported by network mode characteristics “we joined up with a major company” (Appendix 5 Interview H, 2018). Alternatively, but less frequently, trying to separate activities “I try to keep it separate” (Appendix 5 Interview C, 2019). The concept of formally balancing was not recognised with no formal defined balance locus or time frame. However, there were examples of sub conscious balancing, “coming back to balance” (Appendix 5 Interview B, 2018), “balancing is very difficult” (Appendix 5 Interview C, 2019). In addition unintentional imbalances occurred due to resource constraints preventing the implementation of planned exploration activities “a bond had to be found” (Appendix 5 Interview H, 2018). Further imbalance occurred due to conscious risk avoidance decisions to not allocate resources to exploration “we would have loved to invest more” (Appendix 5 Interview C, 2019). The points from the analysis of balances are summarised in the following table.

Balance	Findings and toolkit considerations.
Awareness	Balance as an ambidextrous concept was unknown. However, evidence of actual exploration activities which could be defined as attempts to balance.
Initiation	No evidence to confirm a formal charter initiation definition process to balance exploration and exploitation.
Resources	Limited resources for exploration regularly impacted on balance.
Optimisation	Unable to identify a formal balance locus in any of the interviews.
Time scale	Constantly reassessed due to changing turbulent environment.

Table 4. 7 Balance Findings

4.6 Trade-offs

The trade-off of exploration projects was one of the most frequently cited references, 5% of total. There were constant examples of attempts to undertake exploration including new markets, *“need to branch out into other markets”* (Appendix 5 Interview E, 2018), product development, *“do our own R&D”* (Appendix 5 Interview H, 2018), and new ideas, *“keep innovating”* (Appendix 5 Interview B, 2018). These were often characterised by a struggle to achieve the end goal due to financial limitations, *“little bits at a time”* (Appendix 5 Interview D, 2019), environmental issues and complexity *“very hard as more complex the organisation becomes”* (Appendix 5 Interview B, 2018). This is evidenced in the trade-off citations where exploration clashed with short term business needs, often pulling firms back into exploitation at the expense of exploration, with reference to unquantifiable financial information. However, when in relation to exploration and exploitation events it was always a negative impact *“there is a wish list”* (Appendix 5 Interview F, 2020) *“making some money and trying to put it there (exploration)”* (Appendix 5 Interview C, 2019).

It is difficult to definitively explain the resource impact on the trade-offs for two reasons. Firstly, whilst interviewees referred to resource limitations for exploration cessation, they failed to provide direct financial analysis. This left unanswered how much of the trade-off was due to the actual exploration versus the underlying business environment, i.e. turbulence, complexity or shocks. Secondly, interviewees were often unable to demonstrate the existence of a defined financial model to analyse the exploration undertaken. This lack of analysis confirms the need to scenario plan to understand potential turbulence and is included in the toolkit questions to define measurement systems to analyse the impact on ambidexterity performance.

Once an implementation stage had been finalised constant practical challenges arose which required analysis and adjustments to reset balance as complexity and turbulence impacted. This dynamism and lack of financial analysis limits the scope of the existing Raisch *et al.* pathway so resulting in an additional monitoring stage to my toolkit design, often overlooked in academic research.

Finally, the time horizons were nebulous, unable to define event longevity, revealing difficulties and divergencies in time horizons, which were often due to turbulence, exogenous and endogenous shocks and resource limitations. The points from the analysis of trade-offs are summarised in the following table.

Trade-offs	Findings and toolkit considerations.
Exploit vs Explore	Exploration stopped, replaced by exploitation to maintain short term profitability.
Performance	When cited it was negative, although difficult to assign performance outcomes to exploration / exploitation. Inability to ring-fence events to allow analysis due to lack of measurement system.
Time horizon	Interviewees rarely had pre-determined time horizon.

Table 4. 8 Trade-offs Findings

4.7 Measurement

Measurement of events was mentioned in interviews, but amounted to only 1.5% of all citations, and of a generalised nature *“keep my eye on the cost”* (Appendix 5 Interview G, 2019). Only one interview confirmed detailed data analysis existed, *“data is everything”, “million things you need to analyse”* (Appendix 5 Interview E, 2018). Subsequent follow up calls confirmed most decisions were based on the owner manager’s experience *“had no financial experience”* (Appendix 5 Interview A, 2020). Whilst some financial analysis was undertaken no documented financial management and analysis was evident.

Overall, there was a paucity of references to quantitative measurement between exploitation and exploration actions and outcomes. Qualitative outcomes usually in the form of opinions were more forthcoming, some eluded to quantitative analysis. The need for measurement to improve the exploration and exploitation analysis supports the call for practical decision making tools rather than generalised models (Patel, Messersmith and Lepak, 2013). These assist the practitioner to isolate ambidexterity costs and benefits to give a robust analysis of performance. This is a particularly acute problem for smaller firms who do not have the

resources to trial ideas or have a control group to allow comparison of outcomes. Hence the commercial reality of decision making is often an “either or decision”. The points from the analysis of measurement findings are summarised in the following table.

Measurement	Findings and toolkit considerations.
Definition	Often informally defined with no tangible project measurement.
Analysis	Limited citations of quantitative analysis, some qualitative but subjective opinions rather than factual evidence.
Bench marking	Resource or market constraint prevented operation of a control group for ambidexterity testing.
System	No formal monitoring system to measure exploration or exploitation events.

Table 4. 9 Measurement Findings

4.8 Initiation

As noted all firms had limited understanding of ambidexterity theory, the semi-structured open questions teased out examples of actions consistent with initiation behaviour “*how can I play in this market*” (Appendix 5 Interview B, 2018), “*we were trying to add different products*” (Appendix 5 Interview A, 2020). Evidence of an informal contextual mode in operation was identified in all but one of the interviews. Hence the contribution to the Zimmermann *et al.* framework by proposing an informal contextual mode as a starting position prior to the choice of either a mandated or emergent initiation charter definition process. This is an important cultural change for practitioners to consider as owner managers have to transform themselves from juggling all activities to commence either a top down mandated or a bottom up emergent charter definition process. It was a cultural change underestimated and only belatedly recognised in the case study. It has resulted in the recommendation of a mandated charter definition process to reduce complexity by requiring less organisational change and paradoxical management capabilities. Complexity was greatly increased with an emergent charter process as the business shifts from an owner manager directly controlling all events to delegating to an existing management team used

to taking direction, inexperienced in developing their own emergent charter process. This is further discussed in the two sales action research interventions in the case study Chapter 6. The points from the analysis of initiation are summarised in the following table.

Initiation		Findings and toolkit considerations.
Concept		Interviewees were unaware of theoretical framework.
Pre-commencement mode		An informal contextual mode identified, proposed as a contribution to Zimmermann <i>et al.</i> initiation process. A mandated charter definition process acts as a cultural change stepping stone from owner manager dominance.

Table 4. 10 Initiation Findings

4.9 Pathway

As with initiation process there was limited acknowledgement by interviewees of ambidexterity pathway research, so little to be gained by examining the theoretical construct. However, as with initiation the interviews did shine light on potential additional pathway stages to consider adding to the theoretical framework of Raisch *et al.* implicitly assumed in research which focuses on larger firms with a large management team, often well-endowed with MBAs and well versed in the ambidexterity paradox. However, in smaller owner managed businesses this is rarely the case and a pre-commencement stage analysing its modus operandi and understanding a firm’s strategy before attempting ambidexterity is crucial.

The interviews and the case study provided data findings to design pre-commencement toolkit questions to help guide the practitioner on its ambidexterity pathway. The toolkit questions are designed to tease out these pre commencement issues before initiation. For example in several of the interviews where a lifestyle or survival strategy exists “*we have no big aspirations*” (Appendix 5 Interview G, 2019), “*just bothered about getting through the day and five years seems like miles away*” (Appendix 5 Interview D, 2019). In such

circumstances it is unlikely a practitioner would propose the firm attempts ambidexterity. The points from the analysis of pathways are summarised in the following table.

Pathway	Findings and toolkit considerations.
Concept	None of interviewees were aware of theoretical framework.
Pre-commencement stage	Interview questions confirmed need to align strategy and ambidexterity. This added a new stage 1 to Raisch <i>et al.</i> ambidexterity pathway
Monitoring and Measurement	Measurement questions designed to monitor the direct intervention impact and outcomes. Contribution of an additional monitoring stage 5 after implementation stage.

Table 4. 11 Pathway Findings

4.10 Summary of Findings

The interviews provided additional data rich information to support the case study findings, with triangulation, enabled the design of a generalisable toolkit template. Themes were identified from the data and weighting of categories, such as the relative obscurity of ambidexterity on owner managers' strategic radar. They also confirmed the importance of pre-commencement analysis of strategy to align with ambidexterity. It has emphasised the differences and path dependency of any ambidexterity initiation process as set out in the Zimmermann *et al.* framework, recommending practitioners consider whether an informal contextual mode exists. This is often overlooked in research often focused on larger organisations. This is important as it impacts on the transition of power and decision making which may require cultural change and increase complexity. If an emergent charter definition process with a contextual mode was implemented by an inexperienced management team, limited paradoxical capabilities, suddenly devoid of owner manager direction the challenge would be greater.

The interview and case study data emphasised the importance of dynamic monitoring and measurement systems. The absence of formal measurement systems was a theme of the

interviews but essential to ascertain the performance outcomes. A monitoring and measurement system would have assisted the firms interviewed in trying to understand exploitation and exploration actions and the impact of turbulence and complexity.

The interviews have supported the proposal of two additional stages of pre-commencement analysis and monitoring to the Raisch *et al.* pathway. Also they presented a contribution to the Zimmerman *et al.* initiation framework by introducing the concept of an informal contextual mode. The summary points from the interviews are in the following table.

Summary.	Toolkit findings and considerations.
Ambidexterity understanding	The theoretical understanding amongst owner managers was limited.
Strategy and ambidexterity	Strategic orientation must be aligned with ambidexterity via a pre-commencement stage.
Relevance	Uniqueness of owner managed firms needs a toolkit template which can be adapted to design a bespoke solution.
Monitoring	Financial measurement and analysis limited. Rarely documented, often subjective opinions as to outcomes.
Initiation	The top down, hands on, culturally strong, leadership style of owner managers is best suited to mandated initiation and separate modes.
Turbulence and complexity	Impact on ambidexterity, especially exploration, causing short term focus and abandonment.
Frameworks. Validity	Despite lack of theoretical understanding the interviews presented practical examples to support all three ambidexterity frameworks.
Frameworks enhancement	Evidence found to support expansion of initiation and pathway frameworks.
Toolkit	Interviews provided data to design toolkit and questions, offsetting criticism of one of case study research.
Case study	Triangulation improve generalisability. Also gave independent evidence to support case study intervention findings.

Summary.	Toolkit findings and considerations.
Triangulation	The interviews linked to the four case study interventions so strengthening recommendations. Improved single case study findings and reduced inability to generalise challenge thereof.

Table 4. 12 Summary of Findings

Chapter 5 Findings from Case Study

5.1 Introduction

A case study approach to this research was chosen as the opportunity existed to perform an in-depth practical controlled action research experiment as to how an owner managed firm transforms into an ambidextrous organisation. The firm had never previously considered implementing an ambidexterity strategy. The researcher had an ideal position of being both a doctoral student and the CEO allowing unlimited access to information and individuals. Four separate controlled experiments (“interventions”) were undertaken to minimise one-off unrepresentative data findings and so improve the robustness of results and mitigate criticism from extrapolation of findings and contributions. The validity of which is further enhanced via the interviews in the previous chapter.

This chapter achieves six objectives. Firstly, it summarises the findings of each of the four interventions. Secondly, each intervention’s findings are cross referenced to the three theoretical frameworks ensuring an appropriate foundation for practical implementation of ambidexterity. Thirdly, the intervention findings are consolidated and considered together for common themes to design the toolkit and pathway questions. Fourthly, a pre and post intervention review is conducted to find practical solutions to assist in scenario planning. Fifthly, it identifies issues and pitfalls from a real time commercial environment and possible adjustments to minimise complexity and turbulence. Sixthly, the case study findings, coupled with the interviews and theoretical frameworks triangulate results to support the development of a robust toolkit and questions which can be tailored via the questions to provide a bespoke ambidextrous pathway. A pathway which acknowledged the array of research already been undertaken in specific areas such as the importance of middle management, role of TMT, paradoxical management capabilities and hybrid / temporal / punctuated modes which this research also encounters in a practical setting and is able to contribute.

5.2 Academic Bridge to the Interventions

The literature review in Chapter 2 summarises the academic research underpinning this case study using three theoretical ambidextrous frameworks: the Lavie *et al.* construct; the Zimmermann *et al.* initiation process and the Raisch *et al.* three stage ambidexterity pathways. Empirical research has usually been in the context of larger organisations with greater resources and an implied assumption of an experienced academically grounded management team (Smith-Hudson and Smith, 2007; Cacciotti and Ucbasaran, 2018; Hughes, Filser and Harms, 2018; Yanes-Estévez, García-Pérez and Oreja-Rodríguez, 2018). The case study utilises academic research but does not make such an assumption.

Initially two years were believed to be a sufficient time horizon for the interventions to be monitored and outcomes analysed, it actually lasted three-years to final completion. The cross referencing to real time implementation avoids criticism of the researcher looking into a rear-view mirror through rose tinted glasses having to search historical documents for events to match to theory. The interventions were embedded in commercial reality, consistent with theory and monitored and measured as part of my normal business function, chosen as they were commercially important not just to test theory. Additionally, the interventions were not an analysis of performance outcomes, rather to understand process and applicability of the three frameworks.

Much of data from documents used in the case study was of a qualitative nature so there was constant cross referencing via the NVivo software to provide a quantitative analysis of qualitative data enhanced by a similar analysis of independent owner managed interviews to triangulate data.

A constant practical methodology was adopted for all four interventions. Additionally, in intervention 4 (Trade Sales division), it also considered the implications of domain cross functional ambidexterity (Voss and Voss, 2013) vis a vis market exploration and product exploitation within the Raisch *et al.* pathway. Each intervention pathway was initiated with either a mandated or emergent Zimmermann *et al.* charter definition process and cross

referenced to the Lavie *et al.* categories: antecedents; resources and organisational mode from which the outcomes and trade-offs were observed.

5.3 Pathway to Ambidexterity – Four Interventions

The business was divided into operating units with their own management teams. This provided four interventions with their own objectives and separate management team reporting to me, as CEO. The remainder of the business concentrated on exploitation. The four controlled action research interventions were as follows.

1. Specification Sales division.
2. R&D department.
3. Business Improvements department.
4. Trade Sales division.

For the four interventions the selection of exploration and exploitation tasks, initiation charter used, and mode selected is outlined in the following table.

Intervention	Initiation charter definition	Explore / exploit	Mode	Both explore and exploit
Specification Sales	Emergent.	Explore and exploit.	Contextual.	Yes.
R&D.	Mandated.	Explore.	Separate.	No.
Business Improvements	Mandated.	Explore.	Separate.	No.
Trade Sales	Emergent.	Explore and. Exploit.	Contextual.	Yes.
Remaining business units	Mandated.	Exploit.	Separate.	No.

Table 5. 1 Pathway Interventions.

5.3.1 Specification Sales Division

The Specification Sales division was set up to serve a market requiring both product and technical support service via long term contracts. The management team, internally recruited, had considerable past market experience. This experience was one of the factors in deciding to use an emergent, bottom up, charter definition process to initiate ambidexterity. It operated a contextual mode to set its own objectives with its own resources and management team. This self-contained business unit was to allow both exploration and exploitation and find their own balance.

5.3.2 R&D Department

The R&D department was a newly formed team recruited both internally and externally to provide a flow of new products. Specific exploration projects had been identified from the firm's overall strategy. It initiated ambidexterity under a mandated, top down, charter definition process with projects and objectives given to the team from the Board. It operated in a separate mode with focus solely on exploration with its own physical location, resources and management team. It did not undertake any exploitation activities. It was at the team's discretion as to how it allocated its resources and was responsible for its own project management and delivery against R&D objectives.

5.3.3 Business Improvements Department

The Business Improvements department was new, set up to develop new systems, design processes to improve efficiency and develop unique selling points to differentiate. Whilst some specific exploration projects had been identified in the firm's overall strategy part of the remit was to diagnose the strategy to identify weaknesses and undertake "blue sky" thinking to design innovative solutions and problem solve, notably looking to technology. The people combination brought together past experience attuned to path dependency and

a deep understanding of the business, supported by new cognitively capable outsiders unencumbered by past experience but aware of path dependency. This enabled the team to look at the business with a mixture of experienced and fresh pairs of eyes. As a completely new department with an eclectic mix of individuals it was decided to initiate ambidexterity with a mandated, top down, charter definition process to ensure clarity of strategic objectives. It operated in a separate mode focused solely on exploration with its own location, resources and management team so reducing issues of balance. Exploitation activities were not within its remit.

5.3.4 Trade Sales Division

The Trade Sales division was set up to explore new geographical markets and exploit existing in-house manufactured products. The remit also encompassed a cross functional ambidextrous approach to practically consider the research of Voss *et al.* (Voss and Voss, 2013). The acquisition had brought together a management team with considerable market experience. This experience was one of the factors in deciding to use an emergent, bottom up charter definition initiation process. The new management team understood the market and products therefore geographical expansion was a natural progression. The management team had its own resources to develop its own plan under the Sales Director to achieve cross functional ambidexterity. For this reason, a contextual mode was deemed appropriate to balance product exploitation and market exploration as it would require the same individuals at all levels of the sales organisation to be involved in both tasks.

5.3.5 Remaining Business Units

As a result of the new acquisition all other departments including manufacturing, depot outlets, finance, customers service and logistics were to focus entirely on exploitation activities to maximise short term profits. Each department was to remain unchanged from its previous modus operandi, separate, with its own resources and management team, a continuation of the status quo prior to the ambidexterity attempt. No changes in

management, objectives or balance were required and the department managers continued with their same reporting lines to me, as CEO.

5.4 Findings from Individual Interventions

5.4.1 Specification Sales Division

The Specification Sales division (intervention 1) emerged from a premeditated strategic decision to differentiate in the Specification Sales market. The acquisition immediately prior to the intervention had brought together two experienced sales functions “new team has significant experience” (Appendix 4 Pre acquisition issues 1A, 2017). This combined two sales teams into one standalone business unit to explore and exploit opportunities within the market sector offering a national product and service proposition from a vertically integrated manufacturer-distributor. It had its own resources, back office support function, market segment and strategy. It initiated ambidexterity with an emergent charter process in a contextual mode reporting to the Sales Director (Appendix 4 Advisors board meeting 1 B, 2017).

The new managers informed their team of the plan, with input sought at various “team building and listening” meetings. These proved more difficult than anticipated “*reluctance to accept the proposed vertical integration model*” (Appendix 4 Communication departures 1 ZR, 2019) as it involved redundancies (Appendix 4 legal dispute final 1 ZB, 2019). Additionally, the acquired business’ key supplier, a rival bidder for the acquired business, enticed away one of the new teams joint leaders and within a month several of the sales force joined him departing with tacit knowledge “*he is to accept an appointment with key supplier / competitor*” (Appendix 4 Specification business unit 1 R, 2019), (Appendix 4 Defection to competitor 1 S, 2018). This delayed the intervention plan as time was spent keeping the remaining sales team (Appendix 4 Sales reorganisation 1 K, 2019), (Appendix 4 Specification market 1 AA, 2019), (Appendix 4 Enforced specification 1 D, 2017). These

endogenous and exogenous shocks created a turbulent environment (Appendix 4 Internal 1 Y Competitors, 2019).

The contextual mode did not operate effectively despite numerous meetings and planning sessions. Although the new management team had an abundance of market experience, the ambidexterity concept was new and they struggled to think paradoxically to allocate resources, establish balance and manage trade-offs between exploitation and exploration.

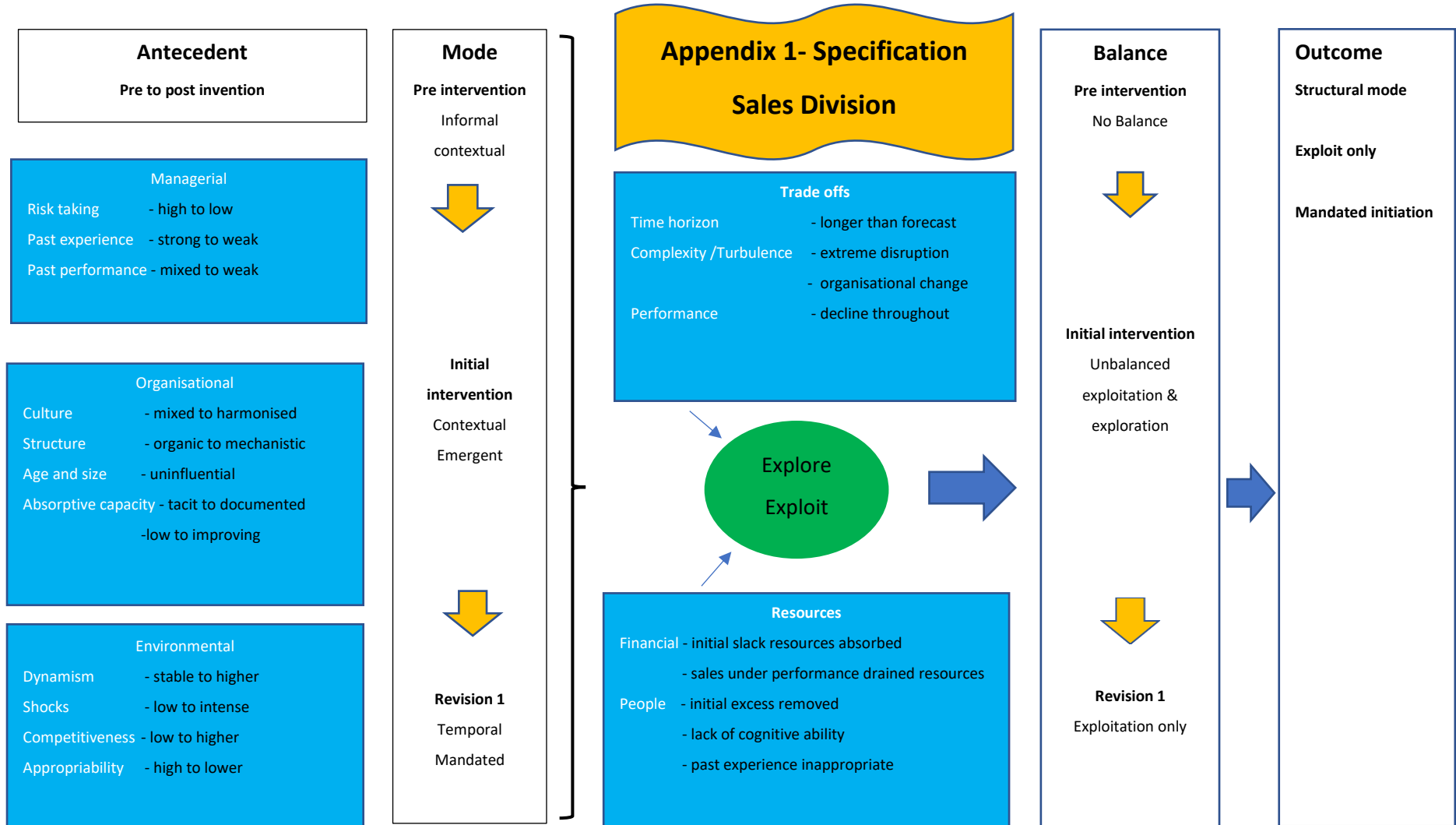
The original objective of market and product exploitation was disrupted by a continuous stream of endogenous and exogenous shocks during a period of organisational change, knowledge loss and a new strategy which added complexity to the business unit. Meanwhile the increased competitive rivalry caused market turbulence, underestimated in the original exploration and exploitation planning. The turbulence caused customer attrition resulting in a decline in profitability, need for more resources and distracted the leadership team from developing a differentiated market proposition.

After 12 months it was evident there were too many changes to expect the managers new to the ambidexterity process to operate in a contextual mode. They were limited by having many years of doing the same process via undocumented tacit knowledge. Cognitive and paradoxical management capabilities were absent resulting in prioritising day to day exploitation issues. The exploration of the new vertically integrated market differentiating proposition took a back seat, there was no exploration and exploitation balance. Consequently, I, as CEO took direct control introducing additional senior management resources to stop the haemorrhaging of the financial performance. This was a move to a temporary punctuated mode to support the management team, but also to add cognitive and paradoxical managerial capabilities, which I referred to as “bungee jumping management”. After six months stability had returned, and a reassessment of the intervention methodology was undertaken. It concluded the management team did not have the cognitive or paradoxical management capabilities to initiate ambidexterity via an emergent charter and were unable to balance exploration and exploitation in a contextual mode. Therefore, a second attempt was made with a mandated charter approach. To simplify the balancing requirements the business unit focused solely on exploitation of the current market. The development of a vertically integrated proposition and product

development strategy was transferred to the R&D and Business Improvement departments. This moved the unit from its original contextual mode balancing exploration and exploitation to a structural separate business unit with a mandated charter focused only on market exploitation.

The schematic below shows the journey and key interventions relative to the three theoretical frameworks and analysis of antecedents pre and post intervention where significant change occurred.

Table 5. 2 Specification Sales Division Intervention



5.4.2 R&D Department

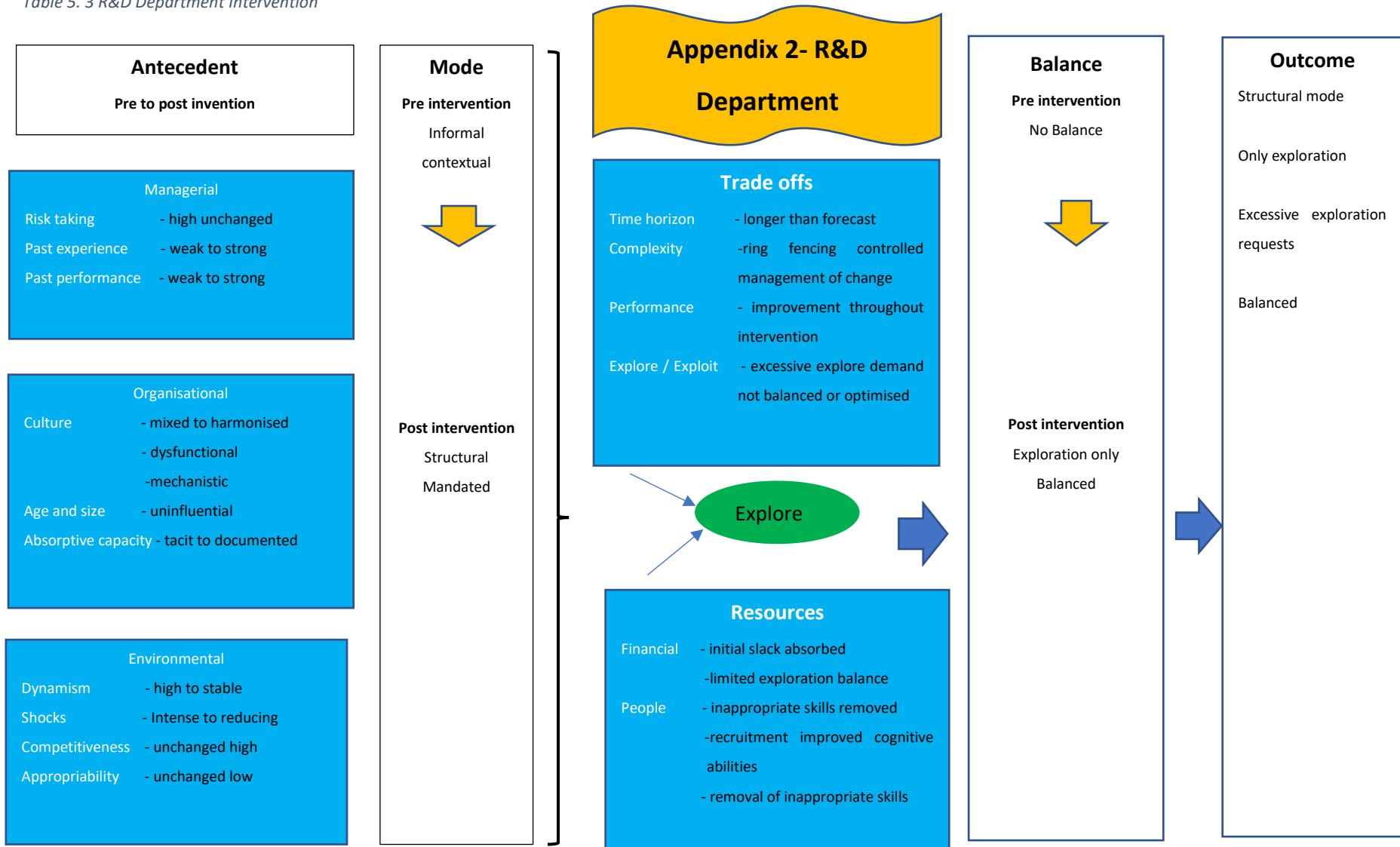
The setting up of a R&D department was a premeditated strategic decision to ensure a pipeline of new product development (“NPD”). Previous NPD had limited formal project management and relied heavily on ad hoc projects and a small cohort of long serving individuals *“R&D is only completed in spare time or when someone starts to shout”* (Appendix 4 R&D planning 2 F, 2019). This was outside an ambidexterity framework and had failed to deliver a constant timely flow of products or adequate returns. An informal contextual mode existed with no clear objective, timeline, commercial analysis or measurable goals (Appendix 4 Manufacturing plan 2 G, 2017).

The intervention objective was to bring together experienced internal management colleagues possessing tacit undocumented knowledge and externally recruited managers experienced in R&D processes *“Need to bring in new external experience”* (Appendix 4 Manufacturing plan 2 W, 2019) to create a new separate business unit to explore for new products and specifically develop the core branded product (Appendix 4 Manufacturing Board meeting 2 H, 2017), (Appendix 4 Strategy presentation 2 P, 2018), (Appendix 4 Business improvements review 1 AD, 2019). It was allocated its own resources, management and operated in a structural mode reporting directly to me, as CEO. This involved a significant disruption to existing individuals who had in the past dabbled in R&D, but now were only consulted when required by the R&D leader (Appendix 4 Manufacturing plan 2 W, 2019). Those previously involved in ad hoc R&D were reassigned to optimise existing products in existing markets (Appendix 4 Manufacturing plan 2 G, 2017).

Initially it was difficult to control, with several managers unwilling to let go of their involvement, notably two long-term senior managers. This continued to disrupt R&D, despite CEO backing and attendance at meetings and resulted in their formal exclusion with both individuals leaving the business *“want to remove from the business”* (Appendix 4 Manufacturing plan 2 W, 2019). This organisational change sent a clear message about the new mandated mode of operation, its separation and remit *“change in organisation, CEO will ensure it occurs and it not ignored”* (Appendix 4 Organisation chart 2 T, 2019).

The Board decided for this new department to succeed it would focus on a few key projects deliverable in an acceptable time scale *“will review all aspects of product development”* (Appendix 4 Manufacturing strategy 2 A, 2018). The R&D team successfully delivered these key projects, even though it was initially criticised for slowing down NPD. However, it did result in a backlog of other projects. The challenge was to meet the internal demand for NPD exploration. A year later the R&D team had delivered on several projects, resulting in more requests. This presented a dilemma to the Board as significant resources were utilised relative to the overall business profitability. It was originally the intention the R&D dept would oversee all NPD. However, after consideration of the amount of outstanding product exploration relative to resources available this remit was too great and risked the dilution of product exploration efforts. It was decided any new manufactured product or components would be in the R&D remit, but any new *“bought in finished products”* would be the responsibility of the commercial teams. This was to be achieved by working with suppliers and other business networks akin to the theoretical network mode (Stadler, Rajwani and Karaba, 2014) so creating a hybrid of separation and network modes This improved balancing rather than achieving optimised balance. The journey and key interventions relative to the applied theoretical framework are shown in the diagram below.

Table 5. 3 R&D Department Intervention



5.4.3 Business Improvements Department

The setting up of a Business Improvements department was a premeditated strategic decision to explore alternative processes and routines to enhance performance (Appendix 4 BI minutes 3 U, 2016) and enable “Blue sky” thinking to challenge the existing business model. This intervention required a radical Board initiated change in the organisational structure with increased problem solving and cognitive managers “*recruit and train superior people*” (Appendix 4 Planning 3 AA, 2019). Existing functional departments such as logistics, manufacturing, depot outlets, support services were to concentrate on exploitation. Two years prior to this intervention a failed attempt had been made to address these problems. An existing high potential manufacturing manager had been appointed as Improvements Manager (Appendix 4 BI manager 3 Y, 2017). The review of this past attempt reached several conclusions. Firstly, the appointment of an internal candidate with no previous paradoxical management capabilities, experience and insufficient holistic knowledge was too great. No single manager had a sufficient range of skills to design solutions to address all business challenges, it was akin to an emergent, bottom up, initiation process. Secondly, it was under resourced and insufficient discipline and control existed in project management. The Improvement Manager had no direct control over any resources so had to negotiate with departmental heads. Thirdly, operating in a specific mode trying to balance his own time, so as to emerge with a balanced exploration verses exploitation plan was too complex. The combination of understanding the scope, knowledge requirements, identifying a Board determined appropriate mandated charter, mode and measurement system within a defined time horizon was overwhelming (Appendix 4 Integration Board review 3 Q, 2018).

This intervention was therefore a second attempt to improve business operations. This time initiated with a mandated top down charter definition process to focus solely on exploration in a separation mode. It had its own ring-fenced financial and people resources, no longer having to negotiate with other departments. Additional people were recruited to increase the team to seven people to cover a range of skills reflecting overall company requirements, including three external recruitments; one of whom had past ambidexterity experience as a result of working for a fellow DBA colleague (Appendix 4 New appointment 3 V, 2019). A second appointment was a technology and systems expert and the third a graduate engineer with a continuous improvement background. The four internal appointments were taken

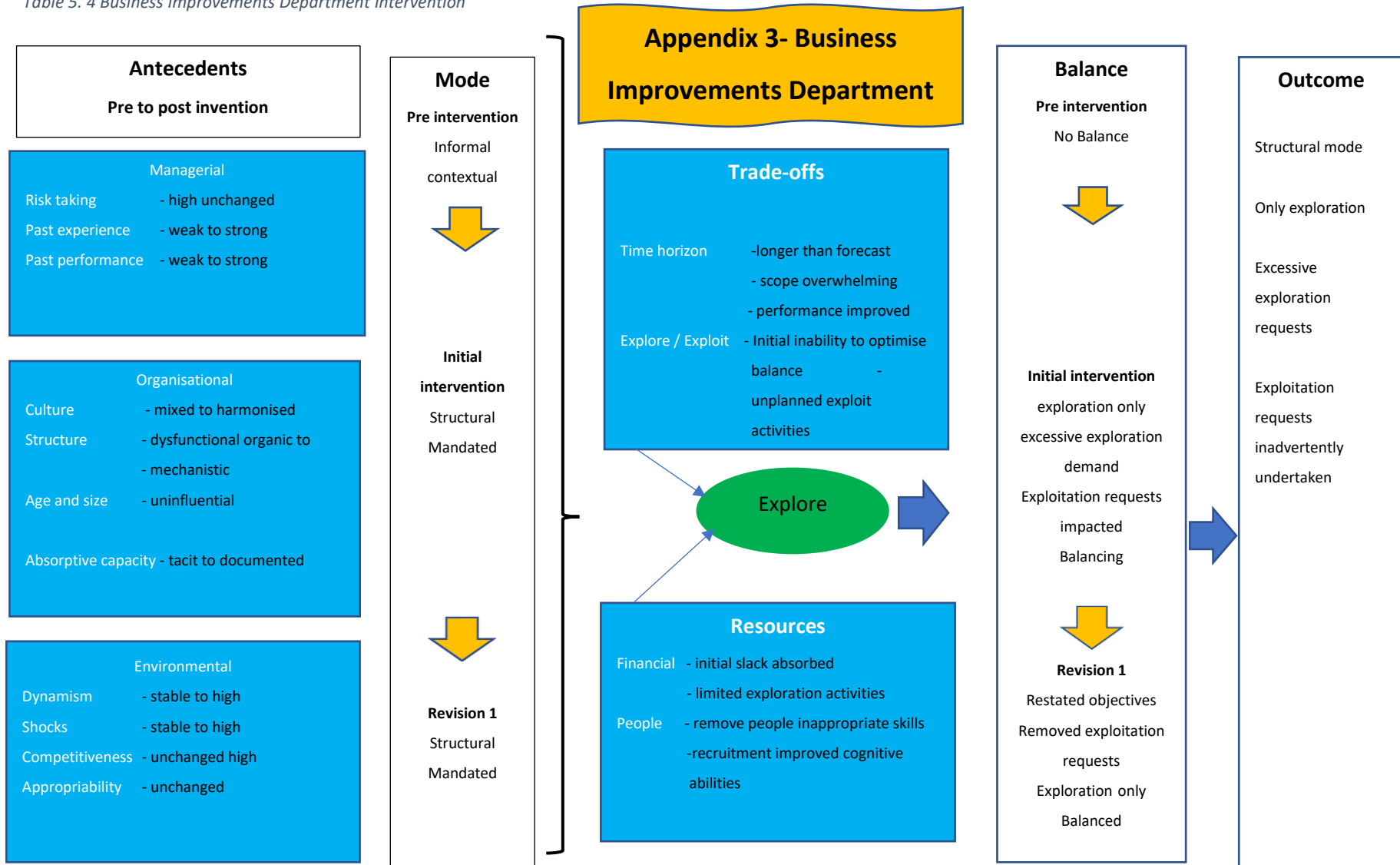
from a range of senior management positions including operations, customers service and technology with the finance function providing analytical support. This provided a mix of skills and cognitive abilities to address the previous failings (Appendix 4 BI agenda 3 A, 2019). The new improvements team reported directly to the CEO.

The Business Improvements department modus operandi was a separated mode whose remit was exploration with no exploitation activities. This was to prevent the previous problem of constant movement between exploitation and exploration as resources were diverted to immediate pressing business issues. The team was physically separated from the rest of the business with their own budget. The company's other functional managers were focused on short term exploitation to maximise the financial return from their own resources (Appendix 4 Implementation plan 3 N, 2018), (Appendix 4 What success looks like 3 K, 2017). One of the first projects was to explore the potential benefits of a new ERP system. However, despite having an external consultancy overseeing the implementation project the scale of change initially consumed most of the team's resources "*special project managers for depots*" (Appendix 4 BI prioritisation 3 F, 2019), (Appendix 4 Deloitte strategy 3 P, 2017). To release the team from the new system implementation; an exploitation project, there was additional recruitment to the technology team.

Despite almost doubling resources and reducing the scope to allow exploration the Business Improvement department was initially unable to fully escape exploitation projects, often a result of exogenous shocks causing turbulence (Appendix 4 Closures 3 G, 2019). This delayed progress in the first 12 months of the intervention, limiting the exploration results from a dedicated exploration resource (Appendix 4 BI issues 3 T, 2019). This was due to several factors. Firstly, as with the original attempt there was resistance to change and an expectancy for it to fail again. This was overcome by a clear mandate to ensure exploration projects were prioritised in a constant structured manner (Appendix 4 BI prioritisation 3 AJ, 2019). Secondly, it initially required the almost daily support of the CEO to ensure all managers throughout the business understood this was non-negotiable and permanent. There was cultural resistance exacerbated by long standing managers' attempts to hold on to power and spheres of influence resisting the new formal structures. Only in the second year were exploration benefits from the projects finally acknowledged (Appendix 4

Reorganisation plan V2 3 D, 2019). The journey and key interventions relative to the applied theoretical framework are shown in the schematic below.

Table 5. 4 Business Improvements Department Intervention



5.4.4 Trade Sales Division

The Trade Sales division was a strategic decision set against a background of consolidating markets. Pre-commencement the market comprised less than ten manufacturers and five national distributors, two of which were already vertically integrated. The acquisition made the case study firm the 3rd largest national manufacturer-distributor. The strategy aligned to the initiation of ambidexterity was to exploit the case study firm's products, by substitution into the acquired business and grow sales by exploring new geographical territories via its successful data analytics sales model "*plugging our customer segmentation and lead generation into the database*" (Appendix 4 Revenue protection 4 L, 2017). This intervention was consistent with cross functional ambidexterity research complementary to revenue growth (Voss and Voss, 2013) and entailed the exploration of new geographical markets and exploitation of its existing product portfolio "*introduce existing products to new geographical areas*" (Appendix 4 Cross functional ambidexterity plan 4 K, 2018).

The internally selected management team was to initiate cross functional ambidexterity with an emergent, bottom up, charter process to develop its own business plan reporting to the Sales Director (Appendix 4 Advisors board meeting 1 B, 2017). A contextual mode was chosen to balance product exploitation and market exploration with its own resources and back office support function. The acquisition provided a clean starting point from which commercially valid changes could be made, not attempts to manipulate an existing structure into an ambidextrous event. The communication of the plan (Appendix 4 Communications 4 I, 2019), added a degree of complexity as new colleagues were still trying to understand where they fitted into the organisation. Meanwhile the news of the acquisition was an exogenous shock which caused turbulence in the market. Competitors and manufacturers, some of whom were previously suppliers, now understood they were supplying a direct vertically integrated competitor, not a "competition light" distributor (Appendix 4 BI review 4 ZG, 2019). Within a month a new group organisational structure led by the Sales Director had been created and communicated to the business (Appendix 4 H, 2019). However, due to market turbulence and internal complexity after six months the implementation of a cross functional ambidexterity plan to explore new markets and exploit existing products had not occurred "*develop a revenue protection plan*" (Appendix 4 Revenue protection 4 L, 2017). The original cross functional ambidexterity plan to explore new markets and exploit existing

products was distracted by the complexity of the attempts to formalise a more mechanistic organisational structure to reduce the reliance upon tacit knowledge. At the same time the introduction of a new ERP-CRM system was itself like an additional exploration activity. It was also realised by the Board there had been a misdiagnosis of cross functional market exploration and product exploitation (Appendix 4 B, 2019). What was originally believed to be product exploitation was, in the eyes of many customers, more akin to product exploration as it appeared to be a change to a new product from a new supplier. The management team had wrongly regarded it as a simple change in a commodity product, because in the past such changeovers had been relatively simple and successful.

This review concluded four exploration interventions were being undertaken concurrently; market; product; organisational change and ERP-CRM implementation. This added complexity to the originally cross functional ambidexterity premise of market exploration and product exploitation. It had been assumed the disruption from the organisational and systems integration would not have affected the cross functional ambidexterity intervention. The Trade Sales team originally tasked with a two-function ambidexterity intervention did not have the resources, experience, or paradoxical management capabilities to undertake four exploration activities. This caused significant short-term customer attrition, so a revised plan was made to return to a two function mode. The original objective of this action research intervention was to introduce a cross functional ambidexterity comprising two actions; product exploitation and market exploration. However, this time it comprised product exploration (not exploitation) and market exploitation (not exploration into new markets as originally planned). This change and time horizon are summarised below.

Event	Intervention 0-6 months	Revision 1 6-18 months	Revision 2 18 months +
ERP implementation	Unrecognised	Exploration	Completed
Organisational change	Unrecognised	Exploration	Completed
Product	Exploitation	Exploration	Completed
Market	Exploration	Exploitation	Exploitation

Table 5. 5 Trade Sales Division Events

The business had inadvertently embarked upon four, not two, cross functional ambidexterity programmes. All of which at some point were exploration interventions, even though two were not realised; ERP-CRM implementation and organisational change “*bugs and problems*” (Appendix 4 Implementation paper 4 R, 2018). It was 18 months before the cross functional ambidexterity focused on only two events was able to be reactivated. The initial cross functional ambidexterity now acknowledged it was product exploration (not exploitation) and market exploitation (not exploration) required to retain existing customers “*need to integrate products to sell*” (Appendix 4 Outlet revitalisation 4 V, 2019). The combination of the above resulted in the loss of 20.1% of the combined businesses turnover over two years (Appendix 4 Sales reactivation 4 F, 2019). Only after 24 months was there a year on year growth in sales. The loss was significantly higher than the 5-7% sales erosion forecast and put significant financial pressure on the business.

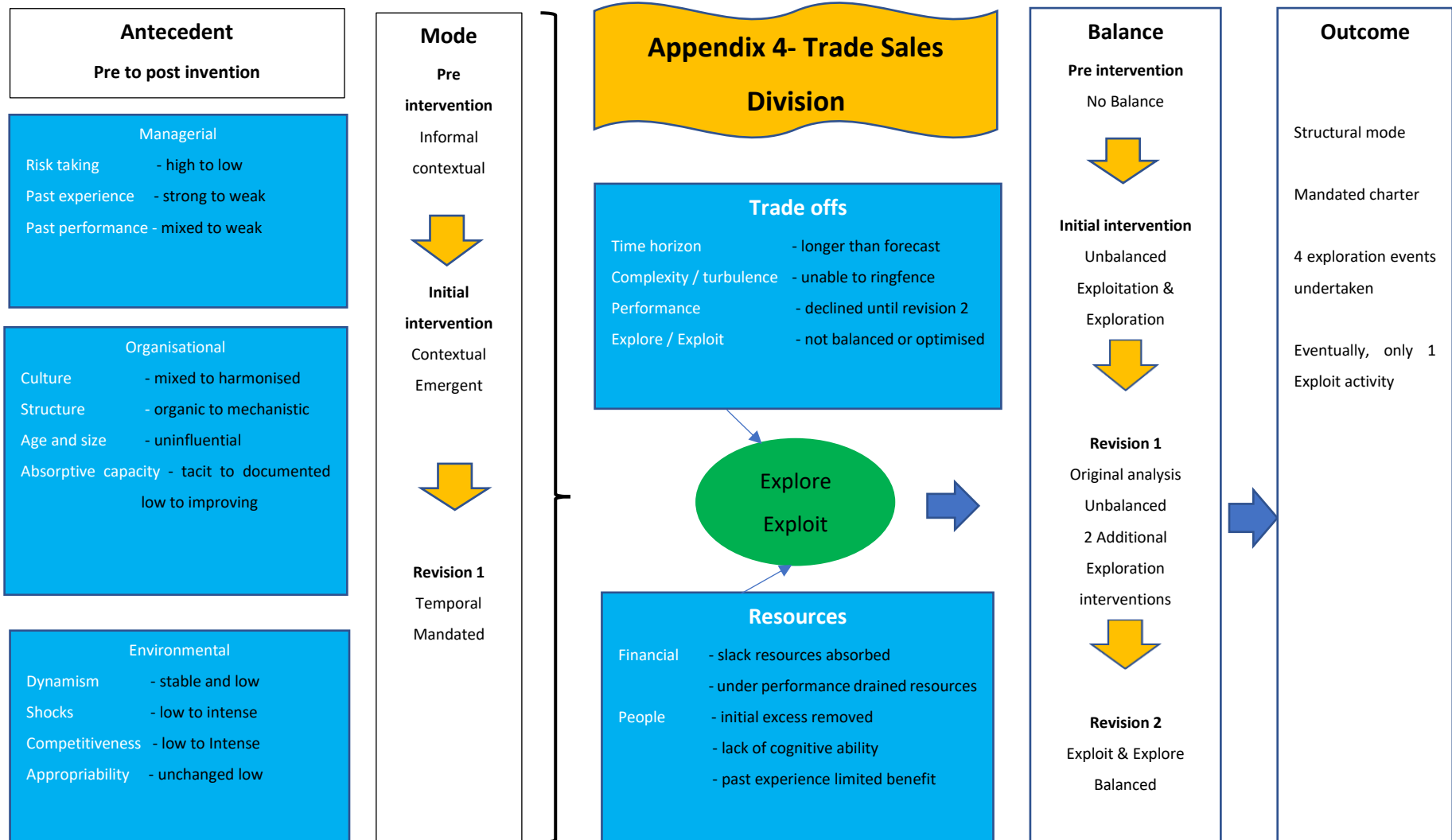
This cross functional ambidexterity intervention needed constant adaption. It was an attempt to replicate past longitudinal research (Voss and Voss, 2013) initially proposing a contextual mode with the team owning both exploitation and exploration activities. In hindsight this was too greater challenge both commercially and as an ambidextrous intervention. Customer behaviour and perception analysis was incorrectly interpreted. It was not possible to start the intervention and then monitor a clear pre-planned route to ambidexterity due to the amount of change both to customers and the management team. The original goals were only achieved by adopting a temporal and then a structural mode to remove complexity caused by the acquisition along with product and market turbulence. Eventually after complexity and turbulence were reduced in a separate mode and focused on only exploiting existing markets were sales stabilised.

A practical commercial finding was insufficient scenario planning was undertaken. Therefore it is concluded strategic planning should be considered as an additional antecedent (Posch and Garaus, 2020) and if absent from an organisation then the possibility of complexity and turbulence being overlooked is increased. The need to consider a firm’s strategic and scenario planning capabilities was not unique to this intervention, it would have helped in the specification sales intervention where exploration goals were not achieved which could probably have been recognised if scenario planning by the management teams. Whilst strategic and scenario planning could be regarded as a normal requirement for a firm it was

not fully considered in any of the interviews performed, nor is it in the Lavie *et al.* construction.

This intervention is a cautionary tale of the impact of unexpected complexity and turbulence. It was not possible to ring-fence the original cross functional ambidexterity intervention as other exploration events impacted. Whilst some scenario planning was undertaken there was a lack of “what if” analysis, possibly because of the Board’s past successful performance, high risk appetite and unexpected change in antecedents. It is especially relevant when ambidexterity is been considered which itself brings change, complexity and turbulence in addition to that within the normal business environment. The journey and key interventions relative to the applied theoretical framework are shown in the diagram below.

Table 5. 6 Trade Sales Division Intervention



5.5 Combined Findings of the Four Interventions

In this section there is firstly a combined analysis of the four interventions findings. Secondly, pre and post commencement changes are considered to understand the impact of ambidexterity and identify findings to assist practitioners to recognise challenges in advance of designing their own pathway.

All four interventions were initiated at the same time from the three frameworks to provide structure to any findings. Firstly, looking at the categories within the Lavie *et al.* exploration and exploitation framework. Secondly, considering the Zimmermann *et al.* initiation process, in particular the starting point and role of path dependency. Thirdly, looking to validate the Raisch *et al.* three pathway stages and consider additional stages to improve the pathway from the practical challenges encountered in this case study.

5.5.1 Managerial Antecedents - Findings Pre and Post Intervention

This review considered the three managerial sub categories: risk, experience and performance. In all four interventions a positive risk appetite was confirmed whereby the owner managers accepted the potential consequences of failure. For the previous 10 years business performance had been encouraging risk taking. The Board were in control of the interventions so felt the risk was in their own hands, backing themselves not having to cede control and responsibility for a successful outcome. This was underpinned by their willingness to invest long term with limited external pressure for short term performance.

The management teams' experience varied in each of the four interventions. In the two sales interventions there was an understanding of the market, reflected in several senior managers who had 15+ years tenure (Appendix 4 Employee turnover 4 ZW, 2019). However, the experience was limited to the same function with limited paradoxical situational experience of handling "wicked" questions (Grint, 2008). The R&D and Business Improvement departments management had a wider past exposure to problem solving.

Both the R&D and Business Improvements management performance antecedent revealed negative past performance from past internal managers. However, the Board believed the negative results were due to the deployment of people with insufficient R&D experience and the informal organisational structure which could be de-risked by the recruitment of cognitively capable managers and learning from past mistakes. New specialists were recruited to both the R&D and Business Improvements departments from the outset, so whilst past experience was mixed the Board believed they had learnt from their past mistakes in the design of these new teams.

The past experience antecedent not directly referenced in the Lavie *et al.* construct and overlooked by the Board was of experience of ambidexterity itself and paradoxical management capabilities. There was minimal academic or practical ambidexterity experience in the case study firm. Despite clear plans and extensive communication in all four interventions the management team were often distracted from the objectives struggling to think paradoxically and manage exploration and exploitation simultaneously. This extended the time horizon, made balance optimisation harder and demanded more resources. The key management antecedent findings from each of the interventions are summarised in the following table.

Table 5. 7 Managerial Intervention Findings

Antecedent	Intervention 1	Intervention 2	Intervention 3	Intervention 4
Managerial	Specification Sales	R&D	Business Improvements	Trade Sales
Risk appetite	Willingness to disrupt a market with strong appropriability regime. Failure to grow so reverted to low risk approach.	Took high risk to redesign key brand. Ability to take more risk limited by overall firm under performance.	High risk approach to ERP system implementation. Successful projects encouraged further exploration risks.	Risk taken with cross functional ambidexterity plan. Misdiagnosis resulted in risk underestimation, reverted to low risk approach.
Past experience	Past experience of minimal benefit to ambidexterity. Struggled with exogenous and endogenous turbulence. Defaulted to exploitation. No paradoxical problem solving capabilities	External recruitment a success. Resulted in few revisions. Focus on only exploration reduced experience required. Some existing managers unwilling to adapt exited from the business.	Benefit from recruitment of experienced specialists. Exploration only reduced experience required. Turbulence caused exploitation tasks to interrupt exploration, experienced specialists regained balance.	Past experience failed to reduce complexity. New sales model required missing paradoxical capabilities, no cross functional balance. Leadership changes with a mandated process reduced complexity
Past performance	Past successful exploitation performance continued but no help to exploration.	Learnt from past failures. New team able to manage exploitation distractions.	Cognitive ability and problem solving improved outcomes. Past experience relevant to maintaining balance.	Past successful exploitation performance enabled eventual exploitation success, but no help to exploration.

The post intervention analysis of managerial antecedent reached several conclusions. When looking at managerial risk taking pre intervention the majority of the people selected to attempt ambidexterity were existing long time served managers, the exceptions were the Business Improvements and R&D departments augmented by externally recruited specialists. Pre intervention there was an entrepreneurial risk-taking approach based on past success. However, there was an absence of in depth scenario planning and “what if” risk analysis instead a “gut feeling” opinion based approach existed where failure was acknowledged and accepted, if not a fully quantified risk. After two years the risk appetite had diminished affecting all four interventions as it constrained resources and dented managers’ confidence, who were used to winning more than losing commercial bets on projects. The intervention performance outcomes were more successful when only exploitation or exploration was undertaken, not both. This was especially true of the two sales interventions where for the first time in the CEO tenure YoY sales had declined. The key findings are summarised in the following table.

Managerial- Pre intervention	Post intervention
Risk appetite - HIGH	LOW
Acquisition requiring high debt leverage. Accepted market challenge and reorganisation required.	Unexpected integration complexity and turbulence dented morale and performance. More cautious risk approach with short term improvement focus. Failure to quantify risk and reliance on “gut feel”.
Past experience - STRONG	LESS RELEVANT
In depth knowledge of existing market and operations. Low employee turnover, long-term employees. Strong exploit ability.	Organisational changes and ambidexterity scope exposed need for new skills. Business Improvements and R&D depts benefitted from introduction of new cognitively capable managers.
Past performance - STRONG	WEAKER
Incumbent management team grown the business, although profits prior to interventions stagnated.	Business performance declined during first two years. Improved only when undertaking exploitation or exploration, not both.

Table 5. 8 Managerial Antecedents Pre and Post Intervention

Three points can be noted for practical consideration from the pre and post analysis of the management antecedent. Firstly, a high-risk appetite initially existed, but future risk was underestimated and not quantified via scenario planning. A more formal risk measurement assessment would have reduced the reliance on the “gut feel” approach of the owner managers. If scenarios are identified a risk profile can be established providing data; even if only to make subjective judgement calls. This takes on more importance if the business is outgrowing owner managers and needs to delegate responsibility to inexperienced managers, as this also increases the risk profile.

Secondly, consideration should have been given to the heterogeneity of management experience. This may be limited if dominated, as in the case study, by long serving members, limiting the breadth of their paradoxical management experience “*There are a number of individuals who I would like to replace*” (Appendix 5 Interview B, 2018). The Specification and Trade Sales interventions achieved more success when undertaking exploitation compared to exploration “*Sales Management team stretched, not undertaking future development*” (Appendix 4 Exploitation plan 1 ZK, 2019). Managers lacked paradoxical management capability to balance both exploitation and exploration, defaulting to their past experience. In the two sales interventions there was not the relevant experience for the new exploration remit given to them. Conversely, the R&D and Business Improvements departments supplemented the internal past experience with external recruitment of managers with high cognitive and problem solving ability “*Business improvements manager appointment*” (Appendix 4 BI manager 3 Y, 2017). The research findings suggest practitioners ensure a heterogenous mix of managers with past experience for exploitation supplemented with externally recruited managers, or business / supplier networks with relevant experience and paradoxical problem solving skills. In both sales interventions many years of selling experience did not help exploration, (Appendix 4 New technical team 2 X, 2019). This contrasted with the success of R&D and business improvement interventions with relevant exploration experience (Appendix 4 New appointment 3 V, 2019). This contribution is relevant to owner managed firms often characterised by long serving, one company managers with limited external experience whose internal experience is narrow and deep.

Thirdly, managers’ past performance had been positive when undertaking exploitation only sales activities, but when asked to combine exploration and exploitation in a contextual

mode performance declined (Appendix 4 Margin erosion 4 G, 2019), (Appendix 4 Sales director departure 4 ZC, 2019). Only when changed to a separate exploitation only mode did performance improved (Appendix 4 Sales director departure 4 ZC, 2019). In the two exploration only Business Improvements and R&D interventions a positive outcome was achieved by operating a separate mode for exploration only from the outset. Practitioners looking to introduce ambidexterity should be aware of the limited value of past experience and skills. To reduce the impact of ambidexterity interventions consideration should be given to maintaining the existing management team’s roles where they have been successful and introduce new managers with relevant past experience and paradoxical capabilities to support the transition and complement existing managers. Furthermore, in all four interventions performance was maintained or improved by reducing complexity. This was achieved by solely focusing on either exploitation or exploration. However, somewhere in the organisation there needs to be sufficient management ambidexterity to assess and manage companywide exploration and exploitation balance, think paradoxically and answer the “wicked” questions (Grint, 2008), ambidexterity often asks. The findings from the analysis of management antecedents are summarised in the following table.

Antecedent	Findings summary
Managerial	
Risk Appetite	High risk appetite based on “gut feel” and owner managers’ direct involvement in determining outcome. When delegating to management team undertake scenario planning to formally quantify risk.
Past experience	Useful for continuation, limited when explore and exploit need paradoxical management capabilities. Business networks can offset exploration inexperience. Recommend recruitment to increase cognitive ability and relevant experience for exploration.
Past performance	Beneficial for exploitation more than exploration. Not a reliable indicator of future performance. Scenario planning assists in identifying turbulence and complexity.

Table 5. 9 Managerial Antecedents Summary

5.5.2 Organisational Antecedents - Findings Pre and Post Intervention

The review considered the five Lavie *et al* construct sub categories: culture; slack; age; structure and absorptive capacity pre and post intervention to identify changes and their impact.

Firstly culture, all four interventions produced inconsistent findings, partly due to the acquisition, itself being the conglomeration of several previous acquisitions, in contrast to the case study firm's own original strong pre-acquisition culture. The acquisition integration had to combine several different cultures at the same time as managing the interventions. Therefore, whilst strong cultures existed within parts of the business, there was no consistent companywide culture so adding complexity. It also added difficulty to communicating attempts to get managers' buy in (Appendix 4 Market positioning 4 ZF, 2018), and acceptance to change to the ambidexterity plan "*will require new special projects managers*" (Appendix 4 Integration review 4 ZE, 2018). Consequently, a lot of time was spent addressing individuals' questions and tailoring plans to get management and employees to accept the process.

Secondly slack, was identified pre intervention in the two sales divisions. The Business Improvements and R&D departments did not separately exist pre-commencement but were set up because of the lack of slack. The Business Improvements department had its plans approved and was sufficiently resourced on commencement. Similarly, the R&D department went from no dedicated resources to a fully resourced team of four specialists and networks developed with key external partners. The two sales interventions were both a combination of two sales functions with slack and overlapping roles as a result of the acquisition. Therefore, on commencement there was headcount slack within the business. However, as noted in the management antecedent review there was not slack in terms of the skills and cognitive abilities needed within this headcount.

Thirdly age, this was the lowest referenced categories, not revealing any influence on the interventions. If age had any influence it was only in causing a degree of fixed beliefs within R&D, overcome by introducing new managers and support from myself, as CEO. The

acquisition took place immediately prior to the interventions so employment longevity was a mix from different businesses.

Fourthly structure, pre-interventions an informal structure had evolved organically with key decisions controlled by the owner managers; delegated management responsibility in an informal ad hoc manner. These organic structures existed due to the founders wanting to maintain the “family” culture despite pre-commencement pressure within the business for more structure, This past informality was unhelpful in the enlarged combined business as it had failed to develop and equip a cadre of future managers, neither did it provide a formal structure to communicate, coordinate and operate defined roles and responsibilities. This change was acknowledged as necessary if the business was to grow irrespective of the acquisition, but it was not implemented prior to commencement of the ambidextrous journey. This added another layer of complexity for inexperienced managers who had to consider organisational changes. This was particularly challenging in the two sales interventions where the internally appointed managers were tasked with developing an emergent initiation charter process to undertake exploitation, and for the first time exploration tasks, whilst also managing resources in a culturally diverse newly restructured team.

The organisational structural antecedents gave two distinct sets of findings from the four interventions. The Specification and Trade Sales divisions pointed to one set, whilst the R&D and Business Improvements departments provided an alternative set. Although two distinct sets of result they were able to be reconciled to explain the anomalies; namely the differences in organisation structure. The combination of the two sales interventions brought together overlapping sales teams with similar organisational characteristics (Appendix 4 Sales structure 4 H, 2017), having both evolved with a bias towards informality within a loose management control structure. The acquisition presented an opportunity for the Sales Director to formalise the structure “*we need someone to own this project*” (Appendix 4 sales reorganisation 1 K, 2019), (Appendix 4 Sales territory 4 O, 2018). This was unsuccessful due to several unexpected departures “*confirmed a few moments ago that he is going*” (Appendix 4 Sales losses 1 AF, 2017), (Appendix 4 Employee defection 4 N, 2019) which created turbulence both internally and externally, continuing for over 12 months causing customer attrition. Also initiating ambidexterity with an emergent charter process

added complexity to the management team's remit as both sales interventions struggled to cope with the turbulence caused by increased competitive rivalry (Appendix 4 legal dispute final 1 ZB, 2019). It was not helped by the underlying desire of the original founders to maintain the informal family culture resulting in the communication of mixed messages. This required a more direct input from the Sales Director and change to a mandated initiation approach resulting in further restructuring of the sales organisation to reduce complexity by flattening the reporting structure process (Appendix 4 2nd revised sales organisation 4 Y, 2019). Eventually both sales teams moved to a separate mode. Contrastingly the two non-sales interventions; R&D and Business Improvements with mandated initiation approach from commencement operated in a separate mode with an exploration only remit. As new departments a formal mechanistic structure existed from day one and initially time was spent extracting tacit knowledge from within the business, resolved by immediately establishing documentation repositories to improve knowledge transfer (Appendix 4 Processing manual 3 W, 2019).

In all the interventions there was a movement from an organic to a mechanistic structure. Only the timing varied with the two sales organisational structures being a reactive change after the initial emergent initiation charter with a contextual mode failed resulting in both sales interventions introducing a mandated initiation charter utilising a separate mode with an exploit only remit. Contrastingly, the R&D and Business Improvements departments initiated a mandated charter with a separate mode to only explore and this remained in situ throughout the time horizon. Hence, eventually all four interventions operated the same mechanistic formal structure, with separate modes undertaking either exploration or exploitation tasks but not both.

Fifthly absorptive capacity, revealed two distinct patterns again separated into the same two groups of interventions; Specification / Trade Sales divisions vs R&D / Business Improvements departments. In the Specification and Trade Sales divisions existed a highly tacit knowledge environment making knowledge transfer difficult and slow, especially noticeable as people left and existing roles changed "*Staff changes at depot*" (Appendix 4 Sales decline meeting 4 P, 2018). In these interventions the lack of easily available knowledge delayed the ambidexterity progress "*feel blind regarding performance*" (Appendix 4 Sales decline meeting 4 P, 2018). The sales teams belatedly formalised

documentation to track customers *“easily look where success or problem”* (Appendix 4 Reporting timetable 4 C, 2018), (Appendix 4 Processing manual 3 W, 2019). This allowed a slow but constant move to a formal absorptive approach where knowledge and procedures were documented. The benefit was seen from formalising knowledge transfer systems, *“sales road map”* (Appendix 4 Sales road map 4 Z, 2019) and better communication (Appendix 4 Communications 4 I, 2019).

Meanwhile the R&D and Business Improvement departments on commencement had introduced knowledge libraries and developed manuals *“documentation of learning, testing, performance”* (Appendix 4 Processing manual 3 W, 2019). They benefited from the appointment of experienced multi-disciplined leaders for the R&D unit (Appendix 4 New technical team 2 X, 2019), (Appendix 4 Development manager 2 V, 2017) and in the Business Improvement department (Appendix 4 New appointment 3 V, 2019), (Appendix 4 Surveyor appointment 3 R, 2019), (Appendix 4 BI manager 3 Y, 2017). Unstructured managers were removed (Appendix 4 Manager departures 2 I, 2019). This contrasted with the tacit knowledge structure in the two sales interventions.

In all four interventions the need for organisational change added complexity and hindered the delegation of ambidextrous activities as existing managers roles changed and external managers were appointed (Appendix 4 New technical team 2 X, 2019). The formalisation was inconsistent due to several of the changes not being implemented by proactive Board instruction as they related to long standing employees, *“part of the family”*. It was only underperformance during the two sales interventions which forced reactive, not proactive, organisational people changes *“is not the right manager...a long term employee”* (Appendix 4 Manager departures 2 I, 2019).

All interventions highlighted the need for organisational change from organic to formal structures, transitioning from tacit to documented knowledge transfer systems, adding delays and requiring additional resources. The findings suggest a mandated charter definition with a separate mode facilitated this process better than an emergent charter definition with a contextual mode by removing ambiguity and providing simplification. It provided a stepping stone for organisational change and delegation to managers. The key

organisational antecedent findings from each of the interventions are summarised in the following table.

Table 5. 10 Organisational Antecedents Findings

Antecedent	Intervention 1	Intervention 2	Intervention 3	Intervention 4
Organisational	Specification Sales	R&D	Business Improvements	Trade Sales
Culture	Several cultures, due to acquisition, uncertainty and poor communication harmonised via a mandated charter.	Initially informal ad hoc leadership. Recruitment of experienced cognitive managers and removal of resistant managers harmonised culture.	New department of internal and recruited managers with a clear mandate, a positive culture immediately existed.	Two different sales team cultures and reluctance to change. Only after a revised approach was cultural harmonised.
Structure	Initial informal structures caused confusion. One formal structure eventually improved results.	New team immediately formalised process and structure. Legacy issues addressed by CEO, departure of managers acting as barriers to new formalised structure.	Clear initial structure with less resistance as no existing power bases. Fewer legacy issues and easier communication.	Joining two teams so cultural behaviour change added complexity. Formalisation process removed non-compliant individuals.
Absorptive capacity	Internal reliance on tacit knowledge, no standard procedures. Improved as knowledge transfer formalised.	Tacit knowledge transferred via a documented system. Managers tried to hold on to knowledge, their exit encouraged information sharing.	New team recruited with cognitive and problem-solving experience, assisted new process introduction.	Limited absorptive capacity slowed progress. Prescriptive approach with fewer, simpler tasks improved performance.

Although the acquisition provided a defined starting point for the interventions it impacted on the organisational antecedent, especially in the first year. It is naive to ignore the impact of the acquisition on the ambidexterity attempt. As it added complexity to organisational change and potential issues of causality of findings. However, due to the access to data, managers and company records it was possible to separately analyse and comment on these impacts, reducing the subjective judgement and addressing causality concerns. Organisational change was necessary, and the acquisition provided a clear step change from not recognising ambidexterity to formally undertaking it. Consequently, the acquisition presented a practical example as to the role of complexity and the challenges it brings when attempting ambidexterity and so helped improve the design of the toolkit questions. The actual impact of complexity in the post intervention analysis has shown the importance of scenario and “what if” planning as a pre-commencement stage in developing an ambidexterity pathway, discussed further in Chapter 6.

The remainder of this section outlines the pre and post organisational impact of the interventions. This pre and post analysis produced four recommendations for future practitioners to consider when designing their own ambidexterity pathway

Firstly culture, it changed pre and post commencement with the replacement of the informal family contextual mode with defined formalised roles (Appendix 4 Manufacturing plan 2 G, 2017). The speed of change was faster and easier in the new Business Improvements and R&D departments as fewer legacy issues and new senior leaders existed. The greatest obstacle was removing legacy managers unwilling to relinquish control of their past ad hoc involvement. The two sales interventions had several years of different cultures adding complexity (Appendix 4 Sales structure 4 H, 2017). It took two years, two revisions and people departures to build an new integrated culture “*physically unite everyone*” (Appendix 4 Sales exploration 4 U, 2019). This had a negative effect on sales performance compared with the successful outcomes in the R&D and Business Improvement departments where a new team culture was quickly established with fewer legacy issues (Appendix 4 Sales survey 4 J, 2019). The findings from all four interventions indicated how with one culture the objectives were easier to establish by reducing complexity. The learning point for practitioners is to consider cultural issues pre-commencement and if they can be harmonised

in advance of the ambidextrous journey to reduce complexity for those responsible for implementation of the exploration and exploitation actions.

Secondly slack, within the organisation disappeared during the intervention time horizon, although ambidexterity was only part of the reason. The acquisition integration, environmental shocks, new ERP system introduction and financial underperformance added to complexity and turbulence draining resources, making it harder for ambidextrously inexperienced managers to initiate an emergent charter in a contextual mode *“Lack of experience of formal remote management”* (Appendix 4 Cross functional ambidexterity plan 4 K, 2018).

Thirdly tacit knowledge and informality, these changed, pre intervention there was no documented knowledge system, instead relying on individual’s tacit knowledge causing difficulty in knowledge transfer and absorptive capacity. A mechanistic structure and knowledge documentation transfer system was introduced on commencement in the R&D and Business Improvements departments alongside experienced cognitive managers for whom formality was the norm and accelerated the completion of intervention events. Conversely, the reliance on informal undocumented tacit knowledge on commencement of the Specification and Trade Sales interventions coupled with the sales team departures (Appendix 4 Communication departures 1 ZR, 2019) increased complexity and delayed knowledge transfer progress.

Fourthly organisational structure, this changed during the intervention time horizon. The initiation charter definition process identified the need to companywide reorganisation if it was to become an ambidextrous organisation *“provides a roadmap for the integration programme”* (Appendix 4 Integration Board review 3 Q, 2018). Initially neither the Board nor interventions managers fully appreciated the importance of limiting complexity and turbulence and managers particularly struggled with the pre-commencement informal organisation structure. This contrasted with the Business Improvements and R&D interventions where the organisational structure was formalised pre-commencement with fewer legacy issues. The Specification and Trade Sales struggled with communication, not helped by salesmen being distracted with concerns about losing their jobs *“this does mean internal disruption”* (Appendix 4 Communication departures 1 ZR, 2019). This resulted in

exploration and exploitation activities stalling and financial underperformance (Appendix 4 sales reorganisation 1 K, 2019), (Appendix 4 Specification teams 1 ZI, 2017) only resolved by reducing the workload by focusing on exploitation for inexperienced managers. The organisational antecedent findings are summarised in the following table.

Organisational Antecedents	Post intervention
Pre intervention	
Culture - MIXED	HARMONISED
Several cultures via acquisition and operating an informal contextual mode.	Slowly harmonised as new culture developed. Long serving managers replaced. New departments unencumbered by past; separation reduced legacy issues.
Slack - YES	NO
Spare headcount not fully optimised. No cognitive slack existed.	Financial underperformance removed slack. Recruitment of lean process specialists mitigating lack of slack in longer term.
Age - LONG SERVING	DECLINING
Promotion based on time served.	Removal of time served employees with next generation. This change in age profile and improved outcomes.
Absorptive capacity - LOW	IMPROVED
Limited with tacit informal knowledge management.	Recruitment, knowledge documentation, formalisation and knowledge transfer improved absorptive capacity.
Structure - ORGANIC	MECHANISTIC
Legacy from desire to maintain “family” firm informal culture.	Formal accountability and measurement via mechanistic structure with hierarchy of decision making, leadership and objectives.

Table 5. 11 Organisational Antecedents Pre and Post Interventions

The remainder of this section brings together the overall conclusions from the individual interventions, common themes within sub categories and changes during the time horizon.

Firstly age, the sub category revealed few findings and had minimal impact, other than that the path dependency had resulted in a large number of long serving employees with an abundance of past experience but often manifested as narrow and deep knowledge.

Secondly slack, the findings were inconclusive as to the impact. There was both financial and head count slack pre-commencement, but human cognitive ability was limited throughout the time horizon. All slack declined during the time horizon despite the addition of specialist human resources introduced to improve paradoxical management capabilities as the demand for their skills outstripped supply.

Thirdly cultural, the findings concluded where an embedded culture existed objectives were more easily established. Multiple cultures added complexity which handicapped progress to achieving outcomes. The culture was often one centred around the owner manager as leader which is not a scalable solution or conducive to managing growth (Hughes, Filser and Harms, 2018).

Fourthly absorptive capacity, confirmed a high degree of pre-commencement tacit knowledge. This added complexity as it was not scalable within the newly enlarged business delaying knowledge transfer. Existing managers with new responsibilities required new skills and externally recruited managers struggled to access undocumented existing knowledge (Appendix 4 Internal communication 1 L, 2019). Formalisation helped to resolve these problems *“Training and implementation - multi channel and systems”* *“Depot manual created with formal sign off”* (Appendix 4 Planning 3 AA, 2019). An online central virtual library, introduced midway into the sales intervention as progress floundered (Appendix 4 Intervention exploitation 1 ZJ, 2019), subsequently increased the speed of actions *“CRM system built to record all customers data to remove from specific salesmen’s own files”* (Appendix 4 Planning 3 AA, 2019). Conversely, in the two exploration interventions effective knowledge transfer was immediately identified by managers as a way to mitigate complexity as organisational roles were changed, new employees introduced, and departments created. This formal documentation provided an efficient knowledge transfer system for existing managers to perform new tasks and for new managers to access existing internal knowledge (Appendix 4 Sales exploration 4 U, 2019). The findings recommend pre-commencement formalisation of knowledge to reduce dependency on employees’ tacit knowledge.

Fifthly organisational structure, it changed as the ambidexterity plan was introduced to new and existing departments and impacted upon managers’ roles and responsibilities, not all

managers were willing or able to change and left the business (Appendix 4 Engineering skills 2 B, 2017). This highlights to practitioners the importance of middle managers and the need to ensure behavioural integration pre-commencement (Taylor and Helfat, 2008) to formalise organisational structures (Appendix 4 Six sigma 2 ZP, 2019), (Appendix 4 Engineering skills 2 B, 2017) and early replacement of managers unable or unwilling to adapt their behaviour (O'Reilly III and Tushman, 2011). The R&D and Business Improvement interventions with formal structures progressed more smoothly (Appendix 4 New technical team 2 X, 2019). Further support comes from seeing how midway through the Trade Sales interventions the informal sales structure was formalised (Appendix 4 Sales structure 4 H, 2017), (Appendix 4 Sales organisational structure 4 X, 2018) putting the project timeline back on course (Appendix 4 Sales survey 4 J, 2019). The findings from analysis of the organisational antecedent is summarised in the following table.

Antecedent	Findings
Organisational	
Age	Infrequently referenced, past experience often accompanied long service.
Slack	Pre-commencement not anticipated. However slack soon evaporated as complexity and turbulence occurred.
Culture	New departments unencumbered by multi cultures and separation reduced legacy issues. Path dependency recognised but pathbreaking ability via new managers' paradoxically capabilities.
Absorptive capacity	Informal undocumented knowledge avoid dependency on employees' tacit understanding. Introduce knowledge repository system to reduce complexity and improve communication.
Structure	Introduce formal mechanistic structure to improve control, communication, measurement and reduced complexity. Removal of managers unwilling to support the ambidexterity journey accelerated progress.

Table 5. 12 Organisational Antecedents Summary

5.5.3 Environmental Antecedents - Findings Pre and Post Intervention

The environmental antecedent is considered using the Lavie *et al.* four sub categories: shocks; competitive rivalry; dynamism and appropriability regime. These are examined pre and post intervention as they were a major determinant of turbulence.

Firstly shocks, endogenous and exogenous shocks were identified in all four interventions. The exogenous shocks mainly impacted on the two Specification and Trade Sales interventions creating turbulence "*business (supplier) entering administration*" (Appendix 4 Supplier cessation 4 S, 2018) damaging customer retention, often overlapping with the competitive rivalry sub category below. The teams constantly pushed towards exploitation activities despite adding additional resources as short term commercial turbulence damaged financial performance. Both Specification and Trade Sales interventions were refocused with a mandated separate mode on exploitation only activities. The R&D and Business Improvements departments were less impacted by shocks which were more of an endogenous nature (Appendix 4 Manufacturing Board meeting 2 H, 2017) delaying rather than disrupting longer term objectives. In contrast the shocks to the Specification and Trade Sales divisions impacted immediately on customer and commercial issues and could only be overcome by providing additional resources "*Proposal for consultancy*" (Appendix 4 consultancy resources 2 L, 2018).

Secondly competitive rivalry, created shocks, but only to the sales interventions (Appendix 4 Enforced specification 1 D, 2017). The acquisition did increase competitive rivalry, anticipated at the time and built into the strategy and sales interventions. This increasing competitive rivalry due to market consolidation was experienced pre-acquisition to a lesser extent and was partly the reason for setting up the R&D department as the business had fallen behind in its core brand market "*market proposition is incoherent*" (Appendix 4 When growth sales 2 J, 2018). Nevertheless the turbulence created was a distraction to the ambidexterity plans which needed revising, "*disruption of supply to customers has been significant*" (Appendix 4 Legal dispute 1 ZA, 2019). The competitor impact on the firm's R&D and Business Improvements department's interventions was more easily ring-fenced.

Thirdly dynamism, both market and product development had been very slowly increasing pre-intervention as there was a need to explore new higher margin products that only the two market leading competitors were large enough to fund. It was the main reason for the acquisition as organic growth was slowing in a consolidating low margin market (Appendix 4 Market strategy Board review 2 K, 2017), (Appendix 4 BI agenda 3 A, 2019). This dynamism post-intervention increased in both Specification and Trade Sales markets, whilst it remained on same trajectory for R&D and Business Improvements throughout the time horizon.

Fourthly appropriability regime, the strength pre-commencement was low with few patents or brands existing in any of the markets. Most competitors had attempted to develop their own brands but were not strong enough to provide differentiation in the eyes of the customer. The case study firm did have one established brand where true technical differentiation existed, but it was tired and growth had stalled (Olson, Bever, Van and Verry, 2008), (Appendix 4 Market strategy Board review 2 K, 2017). The environmental antecedent sub category findings from each of the interventions are summarised in the following table.

Antecedent- Environment	Intervention 1 Specification Sales	Intervention 2 R&D	Intervention 3 Business Improvements	Intervention 4 Trade Sales
Shocks	Past shocks limited. Acquisition disrupted market; turbulence took resources from exploration events.	Low cost alternatives damaged sales without response. Setting up R&D dept. to resolve.	Lower cost entrants forced efficiency focus to maintain profitability. Past attempts failed.	Several past exogenous shocks affected sales. Acquisition disrupted market. Misdiagnosis of cross functional ambidexterity was endogenous shock.
Competitive rivalry	Market consolidation due to overcapacity so margin erosion. Reaction to acquisition underestimated.	Competitor NPD ignored due to management hubris. Reason for R&D dept.	Increased rivalry reduced brand premium. Needing internal cost reduction.	Increased rivalry from two major competitors and start-ups. Few barriers to entry, commoditisation and margin erosion.
Dynamism	Dynamism limited. Two market leaders increasing NPD to gain market share.	Dynamism reducing market share. Reason for creation of separate R&D unit.	Increasing product commoditisation, focus on cost reduction.	Pre-commencement market and products relatively stable. Most NPD from suppliers.
Appropriability	Long term supply agreements, customer acquisition difficult.	Weak brands, few barriers to entry. USP's eroded no new NPD pipeline.	No impact as no patents or licences required in market.	Few barriers to entry. Competitor brand strength underestimated. Price led long term contracts.

Table 5. 13 Environmental Antecedents Findings

The environmental antecedent sub categories was all revealed a significant change during the pre and post intervention time horizon.

Firstly shocks, both endogenous and exogenous increased during the time horizon. Pre-commencement both endogenous and exogenous events had been infrequent with manageable impact providing a relatively stable environment allowing long term planning. The commencement of ambidexterity coincided with several exogenous shocks, notably Brexit, the depreciation of the UK pound (sterling) resulting in cost push inflation and an economic slowdown. This was coupled with endogenous shocks, notably the ERP system implementation, technical problems with key brands and acquisition integration. The R&D and Business Improvements departments were less impacted because the shocks had short term commercial consequences rather than on standalone exploration projects able to be ring-fenced. The major constraint encountered on the original scope of R&D and Business Improvement projects was the companywide decline in financial performance reducing available resources. The Trade and Specification Sales interventions suffered greater disruption as they were dependent on consumer discretionary spend which slowed down post Brexit at the same time as the acquisition integration and ERP system introduction putting the management team under short term commercial pressure.

Secondly competitive rivalry, was closely intertwined with the shocks. The acquisition did increase rivalry as some manufacturers became competitors “*transitional supply agreement had failed*” (Appendix 4 Supplier contracts 1 AB, 2016), (Appendix 4 Supplier strategy 1 ZZ, 2017). The exogenous shock of Brexit also caused competitors’ performance to decline as they tried to maintain market share and profitability (Appendix 4 Specification teams 1 ZI, 2017).

Thirdly dynamism, increased as the case study firm’s key brand continued to be attacked and its own vertically integrated specification model provoked response and impacted on customer profitability (Appendix 4 Digital customer model 4 ZG, 2019).

Fourthly appropriability regime, was low on commencement with few patents and weak brands throughout the industry. These brands together with informal agreements combined

with a reluctance of competitors to continue to supply to the now enlarged case study firm, increased the appropriability regime creating underestimated turbulence

The environmental antecedent sub categories were not a good future indicator in both the Specification Sales and Trade Sales where the post intervention competitive rivalry and appropriability regime had increased with constant exogenous and endogenous shocks. Contrastingly, the R&D and Business Improvements interventions experienced a more stable environment with a more limited appropriability regime and fewer shocks. In such an environment with only the need to explore the balance and resource allocation issues were easier to manage and so the ambidexterity journey was smoother.

These interventions indicate the greater the number of shocks, dynamism and competitive rivalry, creating complexity and turbulence, the harder is the ambidextrous pathway. From only four interventions it is not possible to provide any statistical correlation, but it does provide an important consideration for practitioners because the four interventions are data rich with examples aplenty to recognise the challenges to ambidexterity of turbulence and complexity. The ability to predict and recognise turbulence and complexity is a valuable capability and supports the need for scenario planning as discussed in Chapter 6. The combined pre and post findings from the four interventions are summarised in the following table.

Environmental Antecedent - Pre intervention.	Post intervention.
Shocks - LOW	HIGH
Occasional exogenous shocks, but few endogenous shocks.	Increased exogenous shocks including Brexit. Increased endogenous shocks due to product failings. acquisition integration and ERP implementation
Competitive Rivalry - LOW	HIGH
Stable market share. A few Private Equity and start up competitors.	Acquisition turned suppliers to competitors. Slowing economy and cost led inflation increased rivals' need for market share, increasing price led marketing.
Dynamism - LOW	INCREASING

Environmental Antecedent - Pre intervention.	Post intervention.
Established, but weak brands. A few large competitors, but many smaller firms in size and impact. Steady stream of NPD.	Introduction of new Specification Sales model, largest competitors accelerating product range expansion. Increased commoditisation and margin pressure on core products as economic slowdown.
Appropriability - LOW	INCREASING
Weak brands, limited contractual agreements and commodity products.	Increased product development to contractually lock in customers and develop brand loyalty.

Table 5. 14 Environmental Antecedents Pre and Post Intervention

The environment antecedent findings for each sub category: shocks; competitive rivalry; dynamism and appropriability are summarised for practical consideration in the remainder of this chapter.

Firstly exogenous shocks, mainly impacted on the two Specification and Trade Sales interventions (Appendix 4 Supplier cessation 4 S, 2018). These shocks distracted the management team’s initiation of ambidexterity adding pressure to balance (Appendix 4 Sales decline meeting 4 P, 2018). Despite additional resources both Specification and Trade Sales interventions only succeeded when refocussed on exploitation only, with a mandated initiation charter and separate mode. The R&D and Business Improvements teams were less disrupted by shocks, usually endogenous *“now making significant progress”* (Appendix 4 Manufacturing Board meeting 2 H, 2017), which tended to delay rather than disrupt and were overcome by providing additional resources *“given the time constraints we propose consultancy support for the priority actions”* (Appendix 4 consultancy resources 2 L, 2018). The endogenous and exogenous shocks caused turbulence and negatively affected the ambidexterity attempt *“there will be up to a couple of month’s delay”* (Appendix 4 Operational issues 4 T, 2017). Ambidexterity was easier in an environment where turbulence was minimised and wherever possible shocks avoided as it provided more stable conditions to reduce business risk, costs and avoid extending the time horizon. Whilst this is not always possible the proposed toolkit in Chapter 7 offers practical solutions to the problem.

Secondly competitive rivalry, resulted in turbulence and made it more difficult to achieve ambidexterity “*not be supplying us with material anymore with immediate effect*” (Appendix 4 supplier stock 1 X, 2018), (Appendix 4 Specification sales lost 1 I, 2017). Insufficient customer attrition was built into the sales forecasts. Whilst scenario planning for sales attrition was undertaken as part of the acquisition integration process, it was not directly considered in relation to introducing ambidexterity (Appendix 4 Revenue protection 4 L, 2017). The exogenous, usually short term, competitor led shocks had a greater than anticipated effect on commercial sales activities than on the Business Improvements and R&D projects which were away from the commercial frontline so easier to ring-fence (Appendix 4 Pre acquisition issues 1A, 2017).

Thirdly dynamism, arose from a combination of market consolidation, increasing competition and commoditisation of products, it was the reason for setting up R&D and Business Improvement departments to explore for new products, business efficiency and differentiation. This was also within the two sales interventions remit but was unsuccessful until changed to exploration only interventions. In a dynamic environment separation of exploration activities improved progress and resource allocation is less distracted by market turbulence and business complexity, so diminishing the paradoxical management capability requirements.

Fourthly appropriability, the strength in the market was underestimated and resulted in the inability to change over 40% of the specification sales customers from existing pre intervention suppliers. This was a mixture of increasing dynamism and competition as manufacturing competitors reacted to potential loss of major customers (Appendix 4 Supplier tender 1 E, 2019), by tying them into contractual agreements through price led offers (Appendix 4 Enforced specification 1 D, 2017). This increased resource requirements and weakened the financial performance forcing the two sales interventions to concentrate only on short term exploitation to maintain customers.

These findings concluded a separation exploit only mode especially for commercial interventions is more able to deal with turbulence and complexity. In the two sales interventions exploring and exploiting managers were engulfed by the scale of paradoxical problems causing financial decline until a separate mode with a mandated charter, focusing

only on sales exploitation was introduced. The findings for practitioners to consider from the analysis of the environmental antecedent are summarised in the following table.

ANTECEDENT- Environmental	Findings
Shocks	Endogenous and exogenous shocks had a negative effect on ambidexterity. When undertaking both exploitation and exploration greater resources requirement. Attempt to identify and minimise shocks.
Competitive rivalry	Higher in commercial domains causing short term turbulence. Interventions in separate modes with only exploitation or exploration reduced complexity. Easier for firms to be agile, balance and manage resources.
Dynamism	Separation of exploration activities improved results when turbulence and complexity. Fewer distractions to resource allocation disruption and less management cognitive skills required.
Appropriability regime	If higher appropriability regime likely allow commercial short term focus on exploitation to minimise financial trade-off whilst other functions develop exploration solutions. A separation exploitation only mode suggested.

Table 5. 15 Environmental Antecedents Summary

5.5.4 An Additional Antecedent - Strategy

The pre and post analysis of antecedents revealed considerable change during the time horizon influenced by turbulence from environmental market shocks (Appendix 4 Sales reactivation 4 F, 2019), and complexity from organisational change (Appendix 4 Sales survey 4 J, 2019). Therefore, practitioners should not assume antecedents will remain consistent or a reliable indicator of the firm's future position as ambidexterity is attempted. They may be impacted by different causes, avoidable, unavoidable, within normal business environment and those directly a result of the ambidexterity attempt. For example, an unavoidable business event would be Brexit or market changes. An avoidable event is one directly caused

by undertaking ambidexterity such as organisational change. For these reasons my research recommends strategic analysis and scenario planning as a precursor to ambidexterity commencement to assist in reducing complexity and turbulence. Strategy as an additional antecedent could then be analysed to assess pre and post commencement the impact on resources, trade-offs, resources and influence the choice of initiation charter and mode selection. This practical finding is also supported by research paper (Posch and Garaus, 2020) published after the completion of my case study research. It identifies the role of strategic planning and its impact on exploitation and exploration being contingent on other organisational factors. The strategy planning scenarios should analyse three subcategories; *Identification, analysis and mitigation*.

Firstly identification, the failure to fully identify turbulence and complexity within the firm's strategy over the time horizon caused financial, commercial and organisational strain. A pre-commencement review could identify scenarios occurring naturally in the business environment or directly as a firm's strategy pivots as a result of the transition to an ambidextrous organisation. The three framework construct categories should be used as a checklist to compare to the strategic plan.

Secondly strategic analysis, whilst scenarios had been considered as part of the firm's strategic analysis, they were not directly considered to the ambidexterity plan, which was regarded as an isolated project with other influences taken for granted and not expected to change (Verreynne, Meyer and Liesch, 2016). Consequently, the practical link of ambidexterity to strategy was inadvertently under estimated, insufficiently analysed or measured (Appendix 4 Operational issues 4 T, 2017), requiring later readjustment and additional resources (Appendix 4 Data analytics 4 ZB, 2019). It is recommended for scenarios identified a "what if" analysis is undertaken before attempting ambidexterity to quantify their impact with particular emphasis on turbulence and complexity.

Thirdly mitigation, once strategic scenarios have been analysed consideration needs to be given as to how any negative or disruptive events can be overcome or avoided. The two themes of turbulence and complexity were constant features. Therefore, if the strategic planning, scenario identification and analysis suggests future turbulence during the ambidexterity time horizon consideration should be given to delaying any ambidexterity

attempt until a more stable external environment exists. For example, in the case study, waiting until after Brexit and exchange rate disruptions or when competitive rivalry is lower. However, it is recognised such a delay may not always be possible if there is disruptive, highly dynamic product innovation or market consolidation immediately threatening the future of the firm. Similarly, complexity such as organisational changes (Appendix 4 Specification teams 1 ZI, 2017), (Appendix 4 Organisational structure 1 ZP, 2019), or acquisition integration (Appendix 4 Commercial teams 1 AG, 2019). Strategic scenario planning may have identified this complexity and prompted actions to mitigate (Appendix 4 Sales survey 4 J, 2019). For example, as CEO and with the benefit of hindsight, I could have introduced a formal mechanistic sales organisational structure before the Trade Sales intervention (Appendix 4 Customer retention 1 W, 2018) to mitigate the distraction caused by employees focused on their future instead of the new ambidextrous sales objectives. This was only resolved mid intervention when considering the scenario of whether to continue or change due to underperformance (Appendix 4 sales reorganisation 1 K, 2019), (Appendix 4 Specification teams 1 ZI, 2017). Contrastingly, the Business Improvements and R&D interventions had a clear mandate pre-commencement with a scope of only exploration. Consequently, there was less influence from other parts of the business and so less complexity existed. Also potential disruptive external events were more easily ring-fenced reducing turbulence.

The reduction in complexity assumes greater importance if it is not possible to avoid a turbulent environment, the simultaneous combination provided several negative examples. This research suggests in depth scenario planning examining strategy and ambidexterity jointly to identify, analyse and mitigate turbulence or complexity can simplify the pathway. The findings for practitioners to consider from an analysis of strategy as an antecedent is summarised in the following table.

Antecedent Strategy	Findings
Identification	Identify strategic scenarios occurring as a direct result of ambidexterity.
Analysis	Analyse strategy asking “what if” to examine and measure scenarios before attempting ambidexterity using proposed toolkit questions in Chapter 7.
Mitigation	Avoid or delay ambidexterity attempt if turbulent environment anticipated. Minimise complexity by making changes prior to attempt. Mitigates risk of failure, time horizon and cost of implementation.

Table 5. 16 Strategy Antecedents Findings

5.5.5 Resources - Findings Pre and Post Intervention

The collective impact of the four interventions on resource requirements was considered using three sub categories; financial, people and other. These were collectively examined pre and post intervention as resource allocation and requirements changed over the time horizon. The financial and people resource categories were the dominant issue with minimal identification of the “other” category. Financial resource requirements were pre-planned before commencement for all of the interventions, with no requirement by the management teams to negotiate as all agreed in full. In all four interventions the planned resources were believed to be sufficient, but in the first year in both the Specification and Trade Sales interventions the management team had to seek additional financial resources to cope with endogenous and exogenous shocks “*Not the news that you wanted*” (Appendix 4 Specification sales lost 1 I, 2017), (Appendix 4 Manufacturing enforcing specifcaiton 1 D, 2019). There was additional complexity for the Trade Sales intervention as it attempted cross functional ambidexterity, only to find itself at one point inadvertently undertaking exploration activities in four domains, not the one market exploration and one product exploitation domains envisaged. Although additional financial resources were provided, the expected Specification and Trade Sales growth did not occur. It required two revisions over a two-year period of both sales interventions before sales growth returned. This was by scaling down the cost base and removing complexity, changing to a mandated initiation

charter with direct involvement of myself as CEO in a hybrid temporal-contextual mode eventually becoming exploitation only in a separate mode.

Contrastingly, the two exploration only departments; R&D and Business Improvements experienced the opposite of the two sales interventions in terms of the need for additional financial resources. Again, both the R&D and Business improvements interventions at commencement were believed to be adequately resourced. However, the environmental shocks played a much smaller role and additional financial resources were only required when a decision was made to transfer some of the sales exploration activities to these departments. Within the first year the expected returns from these departments were in line with the forecast. Whilst the financial return on the two exploration interventions was in line with expectations not all exploration activities were undertaken due to companywide underperformance limiting resources. Several of the projects in both R&D and Business Improvements departments had provided an essential platform for the future, without which the company would have struggled to remain competitive. This highlighted the partly subjective intangible nature of measuring ambidexterity performance and challenge of resource allocation.

People resource findings again could be divided into two intervention groups of Specification / Trade Sales divisions and the two R&D / Business Improvements departments. The findings in the sales interventions showed a disproportionate decrease in headcount relative to sales decline. The overall headcount was reduced by 50% although some of this was due to initial over resourcing and downsizing as sales decreased.

For over 18 months the two sales interventions were embroiled in organisational complexity and market turbulence. The eventual introduction of the Business Improvements department's centralised data analytical sales system; an exploration task, removed complexity which helped by simplifying the sales growth process. This efficiency gain was the main reason for a disproportionate reduction in sales headcount. The effectiveness of the Business Improvement department in delivering process efficiency to the sales teams resulted in the decision to revisit the sales interventions and cease their exploitation activities. Hence, the sales management teams no longer had to develop an emergent charter to balance in a contextual mode. Instead, a mandated charter approach was utilised

with a separate mode to only exploit products and markets. Towards the end of the time horizon sales stabilised without requirement of further financial or people resources.

The R&D and Business Improvement departments' ambidextrous journey was smoother and less turbulent. Complexity was present, but the availability of experienced cognitive managers made problem solving easier and delivered expected outcomes on time. This encouraged the transfer of the exploration activities from the two Specification and Trade Sales interventions, as noted above. There were several short term "wins" from the Business Improvement department which improved financial performance, justifying the recruitment of additional similar external managers (Appendix 4 New appointment 3 V, 2019). The R&D recruitment would have also continued were it not for the overall underperformance of the business forcing short term financial costing savings. The key resource findings from each of the interventions are summarised in the following table.

Table 5. 17 Resources Findings

Resources	Intervention 1	Intervention 2	Intervention 3	Intervention 4
	Specification Sales	R&D	Business Improvements	Trade Sales
Financial	Initially sufficient resources. Turbulence required more resources. Inability to maintain explore and exploit balance. Moved exploration to R&D / Business Improvements.	Initially sufficient resources. Scope of R&D limited until proven results. Despite success short term financial issues caused overall company explore / exploit imbalance per original plan.	Initially sufficient financial resources. Turbulence in business exploitation events diverted resources. Short term financial success allowed additional resources.	Initially sufficient resources. Turbulence and misdiagnosis of events drained resources. Required simplified process and focus on exploit only to improve performance.
People	Initially excess people, long time served team with tacit knowledge not requiring high cognitive ability. Top down management style. Struggled to explore and tackle new tasks.	Initial recruitment created cognitive team with skills to complete R&D projects. Short term financial pressure prevented additional people recruitment so limited tasks.	Scope of work increased due to endogenous shocks impacting on overall business. Quick exploration gains encouraged extra recruitment.	Initially excess people, long time served team with tacit knowledge. People reduction meant tacit knowledge loss. Performance declined and delayed until simplified process installed for smaller team.

Both financial and people resources analysis demonstrated considerable pre and post commencement changes *“We have seen trading slowdown”* (Appendix 4 Intervention exploitation 1 ZJ, 2019). The positive relationship between complexity and turbulence and additional finance resources was clearly demonstrated in all four interventions. In the Trade Sales intervention, the implication of inadvertently increasing to four exploration tasks and then moving both interventions to exploit, made definitive findings harder to conclude. What can be said is the simplification of the Trade Sales intervention to an exploit only separate mode with a mandated initiation charter did reduce the requirements for additional financial and people resources *“our focus needs to be in the short term”* (Appendix 4 Intervention exploitation 1 ZJ, 2019).

The people resourcing was of particular interest to a practitioner as it sheds light on the constant question of *“fewer but more capable people”* (Appendix 4 Intervention exploitation 1 ZJ, 2019). Whilst the findings are not sufficient to give statistically valid evidence all interventions support the proposal of fewer but more cognitively capable people being more effective. The bringing together on initiation of experienced cognitively strong managers was consistent with the more successful interventions in terms of time, resources, balancing and outcomes. This is in contrast to the resource hungry, less successful and delayed outcomes when applying an emergent charter definition with a contextual mode undertaking both exploration and exploitation. Overall, the financial and people resource requirements in all four interventions was underestimated. It is difficult to determine exactly the extent it was due to introducing ambidexterity *“all set off with good intentions and tasks to reduce costs”* (Appendix 4 Intervention exploitation 1 ZJ, 2019) as the normal business endogenous and exogenous shocks also increased the resource requirements. This case study’s findings indicate the greater the complexity and turbulence the greater the resources required. The pre and post intervention changes in resources are summarised in the following table.

Resources - Pre intervention	Post intervention
Financial - STRONG	WEAK

Resources - Pre intervention	Post intervention
Sufficient resources for all interventions in original budgets.	Turbulence and complexity negatively impacted on resources. Shocks, competition and organisational changes required more finance. Reduction in exploration to focus on short term profits.
People (number) - SURPLUS	REDEFINED - FEWER
Excess headcount in sales and lack of paradoxical management capabilities. R&D and Business Improvements recruited cognitive skills pre-commencement.	Experienced, cognitive, new recruits performed best as turbulence and complexity occurred. Excess people in sales interventions removed. Roles simplified avoiding need for additional people.

Table 5. 18 Resources Pre and Post Intervention

On commencement of interventions resource budgets were prepared and considered sufficient. However, the resource allocation was more difficult in a contextual mode as managers diverted resources to immediate business exploitation issues “*major revenue protection*” (Appendix 4 Customer analysis 1 U, 2019), inadvertently reducing longer-term exploration, such as developing an integrated customer portal (Appendix 4 Digital customer model 4 ZG, 2019). No similar diversion of resources occurred in the R&D and Business Improvements with an initiated mandated charter, separate mode remit only exploring. Furthermore, when the two sales interventions also changed from an emergent charter with contextual mode to a mandated charter in separate exploit only mode the resources allocation problem declined.

It is difficult to exactly determine the additional costs of ambidexterity project or whether partly unavoidable cost relating to normal business events. Therefore, whilst clear consistent findings were obtained from both interviews and the case study, caution must be taken with conclusions. A practitioner must possess a healthy scepticism to consider if these findings were influenced by poor forecasting, although past project forecasting had been accurate. Also, irrespective of the source of complexity and turbulence its presence increases the resources required so supporting this research’s call for strategic as an antecedent. The findings for practitioners to consider from the analysis of resource findings are summarised in the following table.

RESOURCES	Findings
People	New managers with paradoxical thinking capabilities and cognitive ability improved outcomes. Remove employees unable or unwilling to adapt to changes.
Financial	If turbulence or complexity occurs additional resources required. In contextual mode short term commercial pressure may result in resource diversion from exploration unless a control process in situ. In separate mode easier to maintain resource allocation balance.

Table 5. 19 Resources Summary Findings

5.5.6 Mode - Findings Pre and Post Intervention

In owner managed businesses an informal contextual mode often operates and was seen in this case study firm. Whilst ambidexterity understanding was limited there was an acknowledgement of the strategic importance of future markets and product development whilst maintaining current performance. The original initiation process resulted in two emergent charters selecting contextual modes and two mandated charters selecting separate modes. The choice of mode was independently considered for each of the four interventions. It was coincidence that the two emergent charters in the two Specification and Trade Sales interventions commenced with a contextual mode, whilst the two mandated charters in the R&D and Business Improvements interventions utilised a separate mode.

Both the Specification and Trade Sales interventions initiated via an emergent charter process and contextual mode empowered the leadership with responsibility for establishing its own team, identifying ambidextrous goals, determining and allocating resources, mode selection, balancing of exploration and exploitation and managing trade-offs. However, after six months in both Specification and Trade Sales interventions the ambidextrously inexperienced team had not achieved the expected progress towards balance as they struggled to introduce organisational change, cope with environmental shocks and resource allocation “*national customers want to meet the CEO*” (Appendix 4 People departure 1 Q,

2018). Several attempts were made to reset the ambidextrous pathway (Appendix 4 Sales reorganisation 1 K, 2019).

The management of both sales divisions constantly diverted resources from exploration to prioritise short-term exploitation. Even when additional resources were provided there was no improvement in exploration or exploitation balance. The morale of both teams was affected as customer attrition caused sales to decline. The inability of the Specification and Trade Sales divisions management to balance exploration and exploitation resulted in the need to revisit and review both interventions, eventually resulted in a top down mandated charter definition process, changing from a contextual to separate modes, only performing exploitation activities. The need to allocate resources between exploration and exploitation and balance was removed “*need to repurpose*” (Appendix 4 Sales exploration 4 U, 2019). After initial disruption and a further 12 months operating in this mode progress was made in market exploitation in Specification Sales and product and market exploitation in Trade Sales. Towards the end of the three-year time horizon sales growth had begun to improve.

Contrastingly, the R&D and Business Improvement interventions were initiated with a mandated charter process utilising separate modes chosen to only explore. This reduced complexity as fewer objectives, easier communication and measurement, removing the need to consider balancing and resource allocation. It took time for the new teams to settle into their roles before eventually achieving their objectives. However, even with an exploration only focus the first few months were difficult, especially for the Business Improvements team as the rest of the business tried to pull on its resources to undertake exploitation tasks. It was possible, with the assistance of the CEO “helicoptering” over the whole business, to ring-fence the R&D and Business Improvement departments. The key mode findings from each of the interventions are summarised in the following table.

Mode	Intervention 1	Intervention 2	Intervention 3	Intervention 4
	Specification Sales	R&D	Business Improvements	Trade Sales

Mode	Intervention 1	Intervention 2	Intervention 3	Intervention 4
Pre intervention	Informal contextual mode.	Informal contextual mode.	Informal contextual mode.	Informal contextual mode.
Initiation	Emergent charter revised to mandated charter.	Mandated charter remained throughout the time horizon.	Mandated charter remained throughout time horizon.	Emergent charter revised to mandated charter.
Intervention	Contextual	Separate	Separate	Contextual
Revision 1	Temporal	n/a	n/a	Temporal
Revision 2	Separate	n/a	n/a	Separate
Final	Separate	Separate	Separate	Separate

Table 5. 20 Mode Timeline of Events

The pre and post commencement analysis reveals clear mode findings. The two Specification and Trade Sales interventions initiated with an emergent charter and contextual mode to simultaneously balance explore, and exploit were unsuccessful. Contrastingly, the R&D and Business Improvement departments initiated with a mandated charter and separate mode were successful. To gain overall companywide balance required Specification Sales exploration to be moved to R&D and Trade Sales exploration to be transferred to the Business Improvement department's remit. This left all four interventions operating a separation mode initiated from a mandated charter definition undertaking exploration or exploitation, but not both. These revisions with the business units of exploitation and exploration focus was not pre-meditated, but a reactive decision as a result of ambidexterity stagnation under the contextual mode of the Specification and Trade Sales interventions. Each of the four business units ended up operating structurally separate modes of either exploration or exploitation, but not both. These decisions were made by me, as CEO, who had taken responsibility for overall companywide ambidexterity balance, so operating personally in a contextual mode, "helicoptering" over all the interventions and temporarily dropping into specific events "bungee jumping management" as they arose to provide guidance or problem solve.

The original unsuccessful overall mode structure was conceptualised by the owner managers as shown in the organisational chart below. The categories which had to be changed during the intervention time horizon are highlighted in ***bold black italics***.

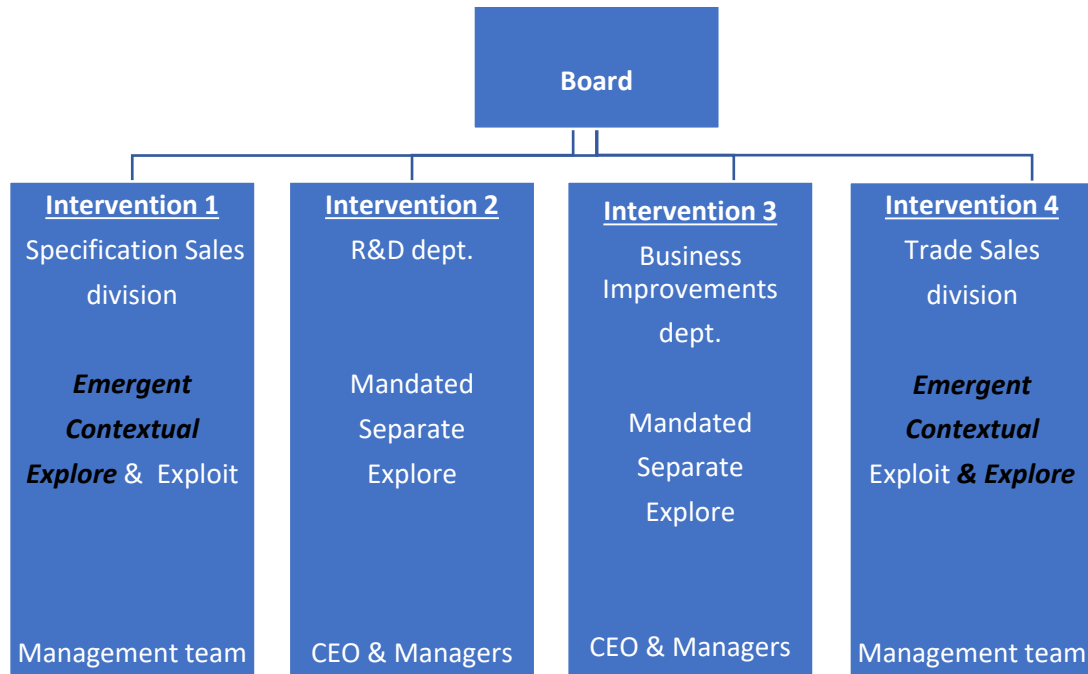


Table 5. 21 Initial Intervention Organisational Structure

As noted above the organisational structure failed, it was necessary to revisit and reset the two sales interventions. This was with the support of myself as CEO who provided “bungee jumping” management to give support, guidance and problem solving capabilities to the existing intervention teams. This “bungee jumping” phrase explains the act of moving from a companywide hands-off overview to a temporary hands-on short term problem solving role. All interventions were now initiated under a mandated charter to ensure one clearly defined and communicated vision. This was a more prescriptive task list to ensure overall companywide exploration and exploitation balance. Each was in a separate mode to simplify the objectives as either exploration or exploitation, but not both. This revised structure is shown in the diagram below with the changes in black italic text.

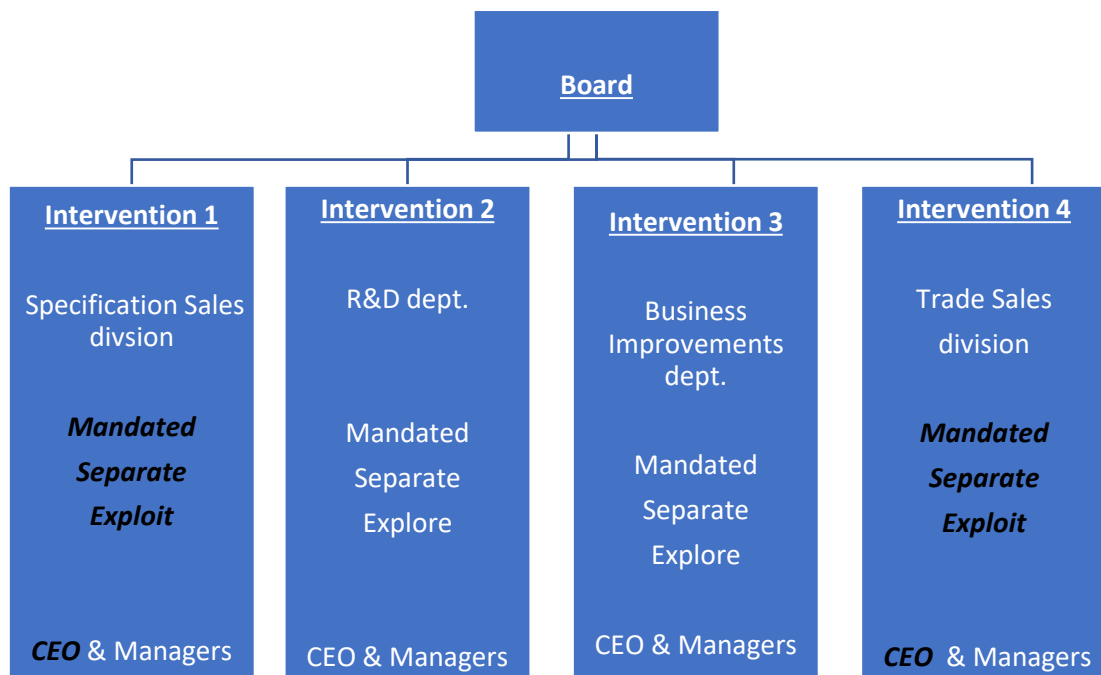


Table 5. 22 Final Revised Intervention Organisational Structure.

These changes were derived from the company learning what worked and what did not, evolving from several monitoring and measurement reviews. A practitioner on commencement may consider an emergent, contextual and simultaneous exploration and exploitation approach where the paradoxical management capabilities, skills and relevant experience are deemed sufficient and turbulence and complexity less likely. It is for this reason the findings are used as questions in the proposed ambidexterity toolkit in Chapter 7 to acknowledge path dependency to help a practitioner diagnose and develop a bespoke approach, not offer a prescriptive one size fits all practical model.

Whilst the final ambidexterity pathway strategy was not pre-planned it was consistent with the Zimmermann *et al.* mandated charter definition process of how ambidexterity is initiated. The company had moved from an informal contextual mode led by owner managers where exploration and exploitation were unstructured and often driven by external events to finally one of exploration or exploitation in separate modes for each of the four interventions. A hybrid balance was achieved companywide with two exploitation only interventions, Specification and Trade Sales divisions and two exploration only interventions, R&D and Business Improvements departments. As CEO, I, orchestrated the four interventions in a contextual mode, offering support and trust whilst requiring stretch

and discipline from each of the management teams (Ghoshal and Bartlett, 1994; Gibson and Birkinshaw, 2004). The pre and post-commencement initiation charters and modes for the interventions are summarised in the following table.

Modes - Pre intervention	Post intervention
Initiation - Mixed	Harmonisation
Informal contextual mode existed. Controlled by owner managers informally mandating with day to day management. Initial intervention had two mandated and two emergent charters.	Informal contextual mode changed to mandated and emergent charters. After revisions of the two sales interventions they changed to a mandated charter. All interventions harmonised via mandated charter.
Modes - Mixed	Simplification
Pre-commencement an informal contextual mode. Commenced with two formal contextual explore and exploit modes and two separate exploration only modes.	Two sales interventions changed from contextual to separate exploitation only modes. R&D and business improvement depts commenced and remained in separation exploration only modes. CEO “helicoptered” over all interventions for companywide balance.

Table 5. 23 Mode Pre and Post Intervention

This research recommends in a turbulent and complex environment a firm attempting ambidexterity for the first time should choose a structural mode to simplify the process and reduce the need for paradoxical management capabilities which are often limited in owner managed businesses (Cao, Gedajlovic and Zhang, 2009; Veider and Matzler, 2016). This simplification comes from fewer goals, avoiding balancing of exploration and exploitation and easing resource allocation to reduce trade-offs. These conclusions showed that interdependency, boundary conditions and path dependency of categories are important determinants of how best to achieve ambidexterity and emphasise the importance of developing a bespoke practical pathway. The findings for practitioners to consider from the analysis of the initiation charter and modes is summarised in the following table.

MODE	Findings
Understanding and selection	Pre-commencement ensure management have a theoretical grounding. Consider whether the team have cognitive ability and paradoxical management capabilities to operate in each mode.
Pre-initiation	Operating in an informal contextual mode. Not mandated or emergent, driven by external events or ad hoc opportunities, led by owner managers following or reacting.
Initiation	Business outgrown owner manager's ability to control all aspects in an informal contextual mode. Initiate charter to delegate control and adapt organisational structure. Recruit managers with appropriate cognitive and paradoxical management capabilities.
Charter selection- Mandated or Emergent?	When strong top down owner managed structure apply mandated charter definition process to enable gradual migration of control and decision to intervention teams, acting as a "stepping stone".
Mode selection- Contextual or separate?	When attempting ambidexterity in a turbulent and complex environment a structural mode is recommended. It simplifies the process with fewer objectives, reducing scope and need for paradoxical management capabilities often limited in owner managed businesses.

Table 5. 24 Mode Summary Findings

5.5.7 Balance - Findings Pre and Post Intervention

The ambidextrous balance was examined pre and post intervention to look for themes using the four Lavie *et al.* construct subcategories: balanced; balancing; not balanced and not recognised.

Pre-commencement balancing exploration and exploitation was not a recognised part of the company's strategy as confirmed by internal documents. During the three-year time horizon changes observed were similar to those in the mode analysis with complexity and turbulence contributing to the failure to achieve the original planned balance. The Business

Improvement and R&D interventions initiated with a mandated separate mode with only exploration tasks did stay with their original exploration objective, but only had to pick up the exploration activities of the two Specification and Trade Sales divisions.

In both Specification and Trade Sales interventions the default response to problems was to divert resources from exploration to exploitation to address short term problems ignoring balance requirements, prompted by turbulence such as competitive rivalry and complexity such as organisational change. Despite extensive pre planning and communication the management team struggled with the cognitive challenges and an inability to adapt their behaviour to think paradoxically to balance conflicting tasks. These practical findings support the academic research emphasising the importance of middle managers and behavioural integration (Taylor and Helfat, 2008). The Trade and Specification Sales interventions initiated with an emergent charter process and utilising a contextual mode resulted in an unbalanced position unable to achieve exploration and exploitation goals. Only after they moved to a mandated separate mode with a focus on only exploitation did the results change to balancing and eventually an exploit only balanced position.

Overall companywide ambidextrous balancing was only achieved by the CEO allocating explore or exploit tasks to individual business units. Even this approach left the company with the challenge of defining balance optimisation. At the end of the time horizon it was still not totally clear to the Board what constituted an optimum balance position and a degree of subjective judgment remained. What is important for the practitioner to note is the dynamic nature of balancing some of which was due to learning from mistakes. However, it emphasised the need for post commencement monitoring. Contrary to what some static academic research implies the ambidexterity journey is not complete at the implementation stage suggesting a right first time process. The key balance timelines and dynamism of balancing each of the interventions is summarised in the following table.

Balance	Intervention 1	Intervention 2	Intervention 3	Intervention 4
	Specification Sales	R&D	Business Improvements	Trade Sales

Balance	Intervention 1	Intervention 2	Intervention 3	Intervention 4
Pre intervention	No balance.	No balance.	No balance.	No balance.
Initial intervention	Unbalanced - exploit and explore, but constant default to exploit.	Balanced - explore only.	Balancing - explore with exploit disruptions.	Unbalanced - exploit and explore misdiagnosis.
Revision 1	Balancing - move to exploit only.	Balancing - taking on sales explore remit – still explore only.	Balancing - taking on sales explore remit - now explore only.	Unbalanced – 4 Explore events to resolve.
Revision 2	n/a	Balanced explore only.	Balanced explore only.	Balancing - move to exploit.
Final position	Balanced- exploit only. After explore and exploit failure.	Balanced - explore only from commencement but greater scope.	Balanced - explore only. Initially disrupted by exploit tasks and greater scope.	Balanced- exploit only. After exploit and explore failure.

Table 5. 25 Balance Findings

There was no consideration of balance before the attempt to become an ambidextrous organisation. Exploration and exploitation could be identified as part of its strategy, but actions and resources were ad hoc. As a result it operated in an informal contextual mode led by the owner managers. Only when ambidexterity was initiated was exploration and exploitation locus of balance determined for each of the four interventions.

In the R&D and Business Improvement departments there was limited turbulence although complexity existed but the experienced cognitive managers took this in their stride and problem solved when necessary “*projects with timelines and ROI not guesstimates*” (Appendix

4 Integration Board review 3 Q, 2018). The Business Improvement department delivered short term performance improvements and as a result additional resources were provided (Appendix 4 New appointment 3 V, 2019), (Appendix 4 Surveyor appointment 3 R, 2019). The balance objectives were achieved in the time horizon, this was a dynamic process requiring a period of learning, readjustment and ring-fencing to remove complexity. In the two Specification and Trade Sales divisions the balance objectives were a constant struggle, often rocked by waves of turbulence and complexity. This required a review of the remit and a move to a mandated charter process with separation modes eventually balanced with exploit only objectives.

The original companywide locus of balance was changed over the time horizon, due to individual interventions not being achieved in the two emergent contextual modes. The balance objectives were revised twice and only achieved towards the end of the time horizon. The overall companywide ambidexterity balance relied on myself, as CEO, operating in a hybrid mode of contextual, temporal and separate modes during the ambidextrous pathway (Ghoshal and Bartlett, 1994; Gibson and Birkinshaw, 2004) to offer trust and support whilst providing stretch and discipline. This was achieved by “helicoptering” over the four management teams or in a temporary mode supporting the Trade Sales division with bungee jumping management dropping in to problem solve. The pre and post-commencement changes are summarised in the table below.

Balance - Pre intervention	Post intervention
No individual balance optimisation criteria. Ad hoc explore and exploit via informal contextual mode. Controlled, but no formal measurement by owner managers.	Initial attempt to explore and exploit revised, resulted in each intervention to either exploit or explore only, defined intangible and tangible measurable objectives.
Overall company balance optimisation was not in the company’s lexicon or part of its strategic objectives.	After 18 months balanced companywide by CEO, acting in a hybrid role of 3 modes- contextual; temporal; and separation via helicoptering and bungee jumping management.

Table 5. 26 Balance Pre and Post Intervention

Balancing was a new and nebulous concept to owner managers operating in an informal contextual mode as “allrounders”, able to do everything, informally balancing, unaware of ambidexterity research, atypical of large traditional public firms. The performance outcomes were often path dependent, influenced not by one but by a configuration of owner managed influences, entrepreneurial orientation and exploration and exploitation balance (Hughes, Filser and Harms, 2018).

This was a hybrid mode situation whereby each intervention team operated in a separate mode to achieve their objectives whilst the CEO was operating in a contextual mode able to deliver the company strategy eventually arriving at a balanced position by simultaneously managing the explore and exploit objectives through parallel semi-autonomous sub units (Fang, Lee and Schilling, 2010). This hybrid approach to balance used a punctuated temporary equilibrium for both the Trade and Specification sales interventions as they moved from a contextual to separate mode (Uotila, 2018). During such punctuated equilibrium periods it was necessary for me, as CEO to parachute (“bungee jumping management”) into interventions for short time periods to provide paradoxical management support. This practical compromise looks to the paradoxical research on duality as against dualism, whereby a more holistic approach is taken to encourage the combination of structural, contextual and individual elements (Papachroni, Heracleous and Paroutis, 2016). This was further supported by the utilised a supplier network mode to overcome resource shortages (Stadler, Rajwani and Karaba, 2014). This practical combination of modes emerged partly from trial and error whilst monitoring and measuring during the implementation stage of the ambidexterity pathway.

It is reassuring for the practitioner to find post completion of my case study the publication of a blended ambidexterity approach which also combines modes. Recent research suggests a blended approach as a meaningful empirical phenomenon with advantages over single mode selection (Foss and Kirkegaard, 2020). This approach is added to by new theoretical research suggesting the combination of structural and contextual modes in a hybrid mode challenging the dichotomous categorisation and proposes reconceptualising them as two ends of a continuum (Ossenbrink, Hoppmann and Hoffmann, 2019). There is no one size fits all to optimise balance, especially when buffeted by turbulence and complexity, a

practitioner must be aware of dynamism and the need to be agile to constantly reassess balance, rather than expect to achieve one locus of balance. This finding is what justifies the additional fifth monitoring stage to the Raisch *et al.* pathway as discussed in Chapter 6 and in the toolkit design in Chapter 7. The conclusion from the balance findings are summarised in the following table.

Balance	Findings
Specific Interventions	Consider undertaking only exploit or explore interventions to simplify the process and act as stepping stones
Companywide	Requires an experienced individual or team to oversee each intervention to manage overall companywide balance.
Optimisation	Dynamism needs to be recognised with monitoring. Accept the need to rebalance rather than expect to achieve one locus of balance.
Process	Adaption over the time horizon. Duality rather than dualism may help to simultaneously operate different modes. Recent other research suggests blended ambidexterity and hybrid modes. Change of mode may be required in a dynamic environment or as managers gain competencies.

Table 5. 27 Balance Summary Findings

5.5.8 Trade-offs - Findings Pre and Post Intervention

Trade-off measurement in purely financial terms is an oversimplification as it ignores intangible costs and benefits, for example, investment in R&D and Business Improvements departments were made to ensure new product developed and efficiency improvements to remain competitive, where no control group exists to compare “go / no go” options. This was also relevant to the two Specification and Trade Sales division interventions where a consolidating and increasingly competitive market made survival unlikely within a “defender or follower” strategic orientation (Miles and Snow, 2003).

In this section trade-offs are first analysed using the Lavie *et al.* construct subcategories: exploration and exploitation; profit performance and time horizon. Secondly, changes pre

and post intervention are analysed examining the dynamic nature and practical monitoring contributions. Thirdly, conclusions are summarised to provide practical recommendations for the toolkit template.

The analysis of exploration and exploitation trade-offs was challenging as the management teams struggled with the two concepts. The Trade Sales division intervention was a roller coaster of product and market exploration switching between misdiagnosis and additional unexpected exploration events. The inexperienced existing managers struggling with paradoxical duality, trying to simultaneously bring together contradictory exploiting and exploring tasks (Graetz and Smith, 2008). This contrasts with dualism which support either/or approaches (Papachroni, 2013). After revisiting and revising over two years there was a trade-off with all the Specification and Trade Sales exploration transferred to the R&D or Business Improvement departments, leaving the sales functions undertaking only exploitation objectives.

At the outset both R&D and Business Improvements department interventions were disrupted, as the management teams were buffeted by the need to support both the Trade and Specification Sales divisions' exploit and explore interventions. Also, the Business Improvements department's remit was slow to be understood by the rest of the business emphasising the dynamic nature of the implementation stage, just explaining the plan was insufficient, project management, discipline and communication was needed. Despite early disruptions adding complexity, progress was observed after the provision of extra resources (Appendix 4 Integration Board review 3 Q, 2018).

A short-term profit decline was expected to achieve longer term competitive advantage from investing in product and market exploration. The actual decline was greater than forecast due to a combination of unexpected costs in the R&D and Business Improvements departments (Appendix 4 Implementation plan 3 N, 2018) and turbulence in the Specification and Trade Sales markets (Appendix 4 Lost sales 4 B, 2018). This performance decline impacted on the short vs long term. This unexpectedly increased costs and sales under performance coupled with several months of confusion, misdiagnosis and learning by mistake put a greater emphasis on the short term to stop customer attrition "*customers sales drop off week by week at moment*" (Appendix 4 Lost sales 4 B, 2018) and prevent longer term

market development taking a back seat (Appendix 4 Implementation plan 3 N, 2018). The Business Improvements department prioritised projects with a quicker payback, becoming more risk adverse, rather than optimising the internal return on investment, "*Low priority*" (Appendix 4 Closures 3 G, 2019).

Eventually companywide ambidexterity was achieved by separating exploration and exploitation into an individual business units requiring compromise, subjective judgment, agility and monitoring. It confirmed the need to regularly assess and revise balance optimisation recognising practical day to day issues involved in transforming into an ambidextrous organisation and the pathway not being a standalone project but dynamically linked to strategy. The trade-off findings from each of the interventions are summarised in the following table.

Table 5. 28 Trade-offs Findings

Trade offs	Intervention 1	Intervention 2	Intervention 3	Intervention 4
	Specification Sales	R&D	Business Improvements	Trade Sales
Time horizon	Exceeded original and revised timeline.	Original timeline achieved.	Exceeded original timeline as initially supporting other interventions.	Exceeded original and revised timeline.
Short vs long term	Short term focus. Market turbulence caused customer attrition.	Long term focus, ring-fenced against short term commercial issues.	Moved to short term objectives as resources constrained due to commercial distractions	Short term goals to overcome impact of internal complexity and market turbulence.
Exploit vs explore	Exploration and exploitation failed. Moved to exploit only to improve short term performance.	Exploration achieved. Scope curtailed due to resource constraints.	Exploration focus achieved after initial exploitation distractions. Not all longer term benefits achieved due to need for short term results.	Unexpected additional exploration tasks. Cross functional ambidexterity misdiagnosis caused exploitation only.

Pre-commencement the trade-off between short and long term was accepted as high risk appetite allowed sufficient resources for each intervention. The limited scenario planning on the impact of ambidexterity meant some subjective trade-off judgements by the Board to integrated and reorganise the acquisition (Appendix 4 What success looks like 3 K, 2017). The four interventions were key strategic steps to create separate sales business units and establish two dedicated exploration functions leaving the remaining business functions to focus on day to day exploitation to generate short term profit. The inability of the two sales interventions to generate forecast profits caused a focus on short term performance at the expense of longer-term objectives with exploitation taking precedence, with R&D investment a casualty and Business Improvements pivoting to projects with shorter term more certain outcomes. It confirms trade-offs as being significant when people and resources are restricted and cognitive ability is lacking (Cooper, Gimeno-Gascon and Woo, 1994; Milliken and Forbes, 1999). The analysis of trade-offs pre and post commencement is summarised below.

Trade-offs - Pre-Intervention	Post-Intervention
Explore vs exploit- No formal documented plan. Ad hoc at discretion of the Board.	Exploit or explore tensions competing for resources. Sales interventions to exploit only to improve performance. R&D and Business Improvements explore only after initial distractions. Under performance drained resources reducing R&D funding. Sales management continuously moved to exploit due to market turbulence diverting resources from exploration.
Short vs long term- Returns accepted within project plans.	Under performance in Specification and Trade Sales prioritised short-term. R&D remained focused on long term, but projects curtailed to conserve resources. Business Improvements prioritised short term exploration payback projects.
Performance- Financial and operational satisfactory.	Operational and financial performance declined only stabilising after two-years. Complexity and turbulence influenced all interventions curtailing exploration.

Table 5. 29 Trade-offs Pre and Post Intervention

It was difficult to exactly apportion the profit decline to specific events or solely to ambidexterity due to the dynamic environment, acquisition integration and shocks. Both the interviews and case study concluded short term performance declines as a firm tries to balance exploration and exploitation “*you are sacrificing short term profit*” (Appendix 5 Interview A, 2020), “*would love to invest more money*” (Appendix 5 Interview C, 2019). For practitioners the probability of short-term performance decline should not be underestimated, especially in a turbulent market or organisational change complexity.

The time horizon was sufficient to conclude the case study firm had become an ambidextrous organisation. Each intervention had a different time horizon, so difficult to suggest a fixed time period to become an ambidextrous organisation, scenario planning analysis would assist in forecasting timelines. The findings for practitioners to consider from the analysis of trade-offs is summarised in the following table.

Trade- offs		Findings
Explore	and	Simplify by separation of exploration and exploitation. This reduces the need to balance, resource allocate and manage trade-offs.
exploit		
Short	and	Likelihood of short-term performance decline. Difficult to solely assign performance outcome to ambidexterity due to influence of other normal business events.
term performance	long	
Time horizon		Difficult to establish a time horizon. Divergence due to unexpected endogenous and exogenous buffeting. Scenario planning would help improve forecasting.

Table 5. 30 Trade-offs Summary Findings

5.5.9 Initiation - Findings Pre and Post Intervention

The initiation choice for the four interventions were each separately considered on purely commercial project management principles. It was by chance two were emergent charters with contextual modes and two were mandated charters with separate modes. This did however provide two clearly defined charters to compare and contrast. The factors which

impacted on the two mandated and two emergent charters when initiated are summarised in the following table.

Factors	Emergent Charter	Mandated charter
Pre Initiation mode	Informal contextual mode, owner manager led.	Informal contextual mode, owner manager led.
Initiation Mode	Initially contextual modes changed to separation modes.	Separation modes.
Management	Internal team limited paradoxical management capabilities and exploit only experience.	Mix of new and internal managers, cognitive and paradoxical thinking skills and experience.
Exploit and Explore	Initially both exploration and exploitation. Moved to exploit only.	Exploration only.
Complexity	Yes.	Yes.
Turbulence	Yes.	Limited.
Time horizon	Exceeded planned timeline.	Achieved planned timeline.
Resources	Additional resources required.	In line with project plan.
Balance	Not achieved until exploit only.	Achieved balance.
Intervention success	Only towards end of time horizon did performance start to improve.	Succeeded throughout the time horizon.

Table 5. 31 Initiation Findings

The analysis and interpretation of these initiation charter findings needs great care and understanding of potential causality logic. It is factually correct to say the findings showed the two emergent charters with contextual modes undertaking exploration and exploitation were not a success, requiring more resources, were imbalanced and exceeded the forecast time horizon. Contrastingly, the mandated charter with separate mode undertaking exploration stayed within planned resources, was balanced and met its forecast time horizon. Furthermore, when the two emergent charters moved to a mandated charter with separate exploit only modes like the two originally mandated charters, they delivered successful outcomes. These are facts and findings! However, the practitioner must also

consider the other factors influencing the outcomes, notably exploration vs exploitation challenges, management experience, paradoxical management capabilities, turbulence, complexity and the commercial nature of the interventions. These issues are discussed in the following Chapter 6.

5.5.10 Ambidexterity Pathway - Findings Pre and Post Intervention

The theoretical ambidexterity pathway of Raisch *et al.* identifies three stages: initiation; conceptualisation and implementation. The practical use and extension of this three stage pathway is examined in the remainder of this section.

Firstly the initiation stage, determined the charter process either mandated or emergent. For larger organisations with strategy and planning departments this may be an appropriate starting point, but the different characteristics of owner managed businesses requires a pre-commencement stage. This new stage 1 considers a firm's path dependency, history and strategic orientation proposing the inclusion of strategy as an antecedent coupled with scenario analysis to ensure it is aligned with attempting to transform into an ambidextrous organisation. After the completion of my research literature was revisited only to find a paper approaching this same issue from a theoretical stance, specifically suggesting strategy as an antecedent and strategy scenario planning having a positive or negative impact on organisational ambidexterity contingent on other organisational factors (Posch and Garaus, 2020), providing evidence to support my additional pre-commencement pathway stage 1 and associated toolkit questions in Chapter 7.

Secondly the conceptualisation stage, helped to determine the appropriate implementation approach, appropriate structures, contextual or separate mode was chosen in light of relevant factors including environmental threats and changes (O'Reilly III and Tushman, 2004). The strategy review had already identified product development, market and process projects improvements, so the exploration remit was easy to mandate. This succeeded in helping to protect the explorative units from the other exploitative areas of the business (Carlile, 2002), by ring-fencing against complexity and turbulence. The Specification Sales and Trade Sales conceptualisation had a strategic objective to explore new sales

opportunities whilst continuing to exploit existing capabilities. The subsequent data analysis showed the management team had market experience, but little exploration experience. These managers were expected, but failed to have the dominant role in influencing the organisational actors behaviour by modelling and subsequently reinforcing their plan (Gibson and Birkinshaw, 2004).

Thirdly the implementation stage, had two categories per the Raisch *et al.* framework. Firstly, the R&D and Business Improvements interventions benefited from the separation mode, limiting need for the team to look for horizontal coordination to ensure cross fertilisation within the overall business. The R&D department's reinvention of the key brand operated as an internal customer-supplier relationship. Any other coordination was performed by the CEO; to whom the two departments directly reported. Secondly, the Specification Sales and Trade Sales division interventions needed to establish how best to maintain existing sales whilst developing a market differentiating future plan operating in an emergent contextual mode. They struggled to deal with the paradoxical tensions between exploration and exploitation in their everyday business (Gibson and Birkinshaw, 2004; Carmeli and Halevi, 2009). Despite an abundance of market knowledge they struggled to balance activities, often leaving exploration tasks incomplete. There was limited evidence of decision making to integrate exploration and exploitation linkages or synergies (Andriopoulos and Lewis, 2008) often reacted to short term commercial events. This was compounded by the complexity caused by organisational structure disruption and increased turbulence arising from competitive rivalry and market dynamism. This resulted in the movement of all the Specification Sales division's NPD into the R&D department and becoming exploitation only to achieve the desired sales growth.

The Trade Sales intervention management team was disrupted more by complexity as the initial assessment of product exploitation and market exploration was misdiagnosed "*fundamental error in assessing whether we were exploiting or exploring markets and products*" (Appendix 4 Cross functional ambidexterity plan 4 K, 2018) resulting in two exploration activities, not one. This was compounded by the complexity of acquisition integration (Appendix 4 Communications 4 I, 2019) and loss of tacit knowledge from employee turnover "*employee turnover up 25%*" again highlighting consideration of strategy and scenario planning coupled with problem solving capabilities to combine and create new

knowledge to consider how to behave ambidextrously (Rogan and Mors, 2014; Papachroni, Heracleous and Paroutis, 2016). Turbulence increased due to market disruption, notably competitive rivalry (Appendix 4 Lost sales 4 B, 2018), (Appendix 4 Operational issues 4 T, 2017) requiring the Specification and Trade Sales divisions' to revise plans to regain sales growth (Appendix 4 2nd revised sales organisation 4 Y, 2019). This supported existing extant literature indicating front line managers not possessing sufficient behavioural and cognitive ability to reduce complexity to succeed in balancing exploitation and exploration in everyday business (Smith and Lewis, 2011), unable to manage paradoxical tensions (Gibson and Birkinshaw, 2004; Papachroni, Heracleous and Paroutis, 2016). There was a lack of team leaders with blended skills, which past research had identified as a key success factor (Birkinshaw, Zimmermann and Raisch, 2016).

Fourthly the monitoring stage, revealed the assumption of completion of the initial implementation plan was an over simplification not acknowledging the dynamism in the ambidexterity pathway. Additional work was required post implementation to complete the ambidexterity pathway journey. This extra stage was a monitoring and measurement process to analyse the interventions and assess whether performance was in line with expectations. Whilst this may be an implicit assumption in theoretical research it was a critical requirement in the practical execution of all four interventions. All the interventions and specific tasks and projects were buffeted by unexpected events, resulting in the need to reassess plans, restate goals, reallocate resources and extend timelines. This review process was only possible as project management was undertaken for each intervention which contained pre-determined tasks, targets and timelines supported by intangible and financial measurement "*what are our targets for reduction*" (Appendix 4 Improvements plan 2 U, 2018). This may seem obvious to a seasoned project manager, but less so for an owner manager attempting ambidexterity for the first time. The case study reviews resulted in major changes to the original plan and measurement was essential. This additional fifth monitoring stage is expanded upon in Chapter 6 and incorporated as part of the design of the toolkit and questions in Chapter 7.

Chapter 6 Discussion of the Findings

6.1 Discussion Points and Recommendations

Both interviews and the case study highlighted how owner managed firms typically multi-task opting for contextual solutions when they are small and agile but finding this informal contextual ambidexterity increasingly difficult to maintain as they grow. As they attempt to execute a growth strategy, they are faced with resource constraints trying to simultaneously balance short term exploitation and longer term exploration objectives which is reflected in the inevitable trade-offs. This becomes all the more challenging in a turbulent and complex environment draining resources.

In the two emergent contextual mode interventions it became apparent managers lacked cognitive ability and relevant exploration experience. Complexity was added to the mix as different cultures and structures combined following the acquisition making it difficult to find common ground. The organisational challenges and dynamic environment added turbulence and complexity, requiring more resources and made it impossible for the inexperienced management team to devise a solution. For the two emergent contextual mode interventions the conclusion was midway through to revise the approach to focus on exploitation only, utilising a mandated charter in a separation mode.

The findings clearly indicated a mandated separated solution worked better by reducing complexity and turbulence by limiting the quantum and influence of endogenous and exogenous shocks. However, this put additional pressure on the top management team to orchestrate individual interventions to ensure overall companywide exploitation and exploration balance, addressed by the CEO “helicoptering” over the business. This was possible because owner managers are more likely to have the relevant experience, cognitive ability and problem solving skills (Aragón and Sánchez, 2005) to deal with such issues having operated in an informal contextual mode. At business unit level successful exploitation was achieved by redirecting existing managers to where they had past experience and hiring new

managers with the relevant skills for the exploration tasks, creating a more problem solving unified structure and culture within the business.

The findings confirmed the unpredictability brought about by complexity and turbulence, the expectation of a linear uninterrupted attempt to introduce ambidexterity would be an exercise of folly. It required changes in the initiation charter from emergent to mandated and contextual to separation modes with a move from both exploitation and exploration to only one. The impact of turbulence may have been mitigated if there had been a more proactive, extensive and detailed analysis of different scenarios, so allowing better consideration of the potential impact of ambidexterity itself and other inevitable events, such as Brexit. Whilst this is obviously speculation on my part as the researcher- practitioner and has not been tested, it is an opinion based on observations from over three-years of hands on involvement, embedded in the business. It was also evidenced in the interview feedback. As researcher - practitioner my conclusions are a decision to formalise scenario planning for each intervention as part of the conceptualisation of exploration and exploitation would have simplified and accelerated the intervention process by avoiding the need to reset some of the intervention objectives. It would have also improved resource allocation and made balance easier with fewer trade-offs.

In both the case study and the interviews path dependency was an important factor. Practitioners must be aware when creating a road map to ambidexterity from initiation to conceptualisation that it will be unique and path dependent, requiring regular monitoring and adjustment, especially in a complex and turbulent environment. This dynamism is acknowledged, incorporated and designed into the toolkit in Chapter 7. The answers to the toolkit questions develop a practical bespoke pathway, with the addition of two new stages, for a firm attempting to become an ambidextrous organisation.

6.1.1 What Worked, What Did Not Work and Why

The three-year controlled action research saw the completion of the four interventions to become an ambidextrous organisation. There were numerous challenges and a steep learning curve which required revisions, but overall, the core approach utilising the three

frameworks worked. This was in part because of a pre-commencement analysis to identify the key business issues such as path dependency, market position, organisational and operating in an informal contextual mode. It had outgrown its informal organisational structure and reliance on tacit knowledge, led by the owner managers undertaking ad hoc, punctuated exploration activities in between day to day exploitation activities. These findings were consistent with those of the interviews. Additionally, I, as CEO, had a strong grounding in ambidexterity literature and recognised the need to align it to the strategy. This alignment was established pre commencement existed as its strategy was as a prospector, not a defender or reactor (Miles and Snow, 2003) needing exploration and exploitation.

Given the above starting point what eventually worked was the application of an ambidexterity plan derived from three theoretical frameworks based upon an exploration and exploitation framework, an initiation process and dynamic pathway stages. The eventual successful outcomes were initiated via a mandated charter with all interventions in separate modes undertaking either explore or exploit activities, but not both. Simultaneously, the CEO operated a hybrid companywide contextual mode, punctuated with occasional “bungee jumping management” into individual interventions, to achieve balance.

What did not work was when initiated with an emergent charter definition to simultaneously exploit and explore in a contextual mode. The move from owner managers controlling the business to delegating to inexperienced management teams with an emergent charter to create a bottom up plan was a big leap from the existing informal contextual mode. There was no stepping stone for the business to transition its organisational structure. Managers were asked to undertake both exploit and explore tasks not just one, requiring cognitive and problem-solving abilities they did not possess. Finally, the turbulence and complexity were also greater in the two sales interventions operating an emergent process and contextual mode, adding further day to day pressures on to the inexperienced management team.

The practical considerations and why they worked are discussion points in the remainder of this chapter. They provide the foundations for the proposal a practical ambidextrous pathway combining the three theoretical frameworks, two additional stages with a toolkit of pertinent questions. These are not all cast in stone recommendations, rather designed to

support a practitioner in building a bespoke solution to become an ambidextrous organisation.

The pathway is summarised in five stages. Firstly, pre-commencement analysis to understand a firm’s strategic alignment to ambidexterity, any path dependency issues and the uniqueness of any business’ starting point. It ensures consideration of whether an informal contextual mode is in operation. Secondly, it discusses how initiation via a mandated charter can act as a stepping stone for owner managed businesses to operate and control a growing business. It suggests a method to delegate control to its management team whilst still setting the vision and strategic objectives. Thirdly, by conceptualising the plan it shows wherever possible how to simplify the process for an inexperienced management team by using a separate mode either exploiting or exploring. Fourthly, the implementation plan is discussed and the impact of turbulence and complexity on the ambidexterity pathway and offers some solutions. Fifthly, it discusses how monitoring can help balancing, resource allocation and manage trade-offs, highlighting the dynamic nature of the pathway and importance of measuring progress with suggestions of appropriate measurement categories to consider. The actions which worked successfully in achieving ambidexterity are summarised in table below.

What worked	Why
Strategy	Linked and consistent with ambidexterity
Mandated	Acted as stepping stone for owner manager delegation. Inexperienced managers struggled when asked to develop emergent process.
Separation	Reduced paradoxical capable requirements and simplified tasks for inexperienced managers.
Exploration vs Exploitation	One business unit undertaking both tasks too complex, insufficient experience to balance Managers defaulted to short term exploitation when commercial problems arose. Only when explore or exploit planned resource allocation and objectives achieved.

What worked	Why
Ambidexterity experience	Leader able to helicopter over all interventions dropping in individual interventions (bungee jumping) to offer support and problem solving.
People resource	Recruit paradoxically capable managers. Remove those resistant to change.
Monitoring	Review, revisit, analyse, measure and re-adjust to compensate for dynamic environment.
Turbulence and Complexity	Simplified and formalise process especially organisational issues pre-commencement. This reduces skill set required.

Table 6. 1 What Worked and Why

6.2 Pre-Commencement Strategy and Ambidexterity Alignment

6.2.1 Informal Contextual Mode

This discussion point is centred on understanding and considering the pre-commencement path dependent position of owner managed firms with respect to their strategic objectives and readiness to become an ambidextrous organisation. In doing so it prompts an additional, *pre-commencement stage*, in the Raisch *et al.* ambidexterity pathway and Zimmermann *et al.* initiation process.

From interviews and the case study there was minimal understanding of ambidexterity. Therefore, no conscious or formal charter process or mode selection was identified in any of the interviews or existed in the case study firm pre-commencement. Instead the interviews revealed owner managed firms undertaking exploration and exploitation activities with no formal understanding or consideration of any theoretical ambidexterity construct; *“It’s like the cavemen mentality, if you’ve not had anything to eat you’re just bothered about getting through the day and 5 years seems miles away”* (Appendix 5 Interview D, 2019).

The interviews revealed firms did not have a conscious, pre-planned route to a balanced exploration and exploitation position. These initial interview findings were useful in assisting the planning process in the case study firm where a similar situation existed. They highlighted how the informal contextual mode was accompanied by a dominant owner managed top down organisational structure. For practitioners this is an important path dependency consideration relevant to owner managed firms, who unlike larger corporations, are less endowed with managers having a theoretical strategic background applied in a commercial environment (Broersma, Gils Van and Grip De, 2016). All the firms in this research considering ambidexterity would have benefited pre-commencement from its management team gaining a theoretical understanding to assist managers to think paradoxically to address ambidexterity complexity (Smith and Lewis, 2011). Practitioners must then consider whether the management team can operate each alternative mode.

This research has found evidence of owner managed firms before considering ambidexterity operating in an informal contextual mode, reacting to external events or ad hoc opportunities, an important pre-commencement consideration for practitioners developing a pathway. This thesis proposes a theoretical contribution of an informal contextual mode to add to the literature of how ambidexterity is initiated (Zimmermann, Raisch and Birkinshaw, 2015). This is shown diagrammatically below.

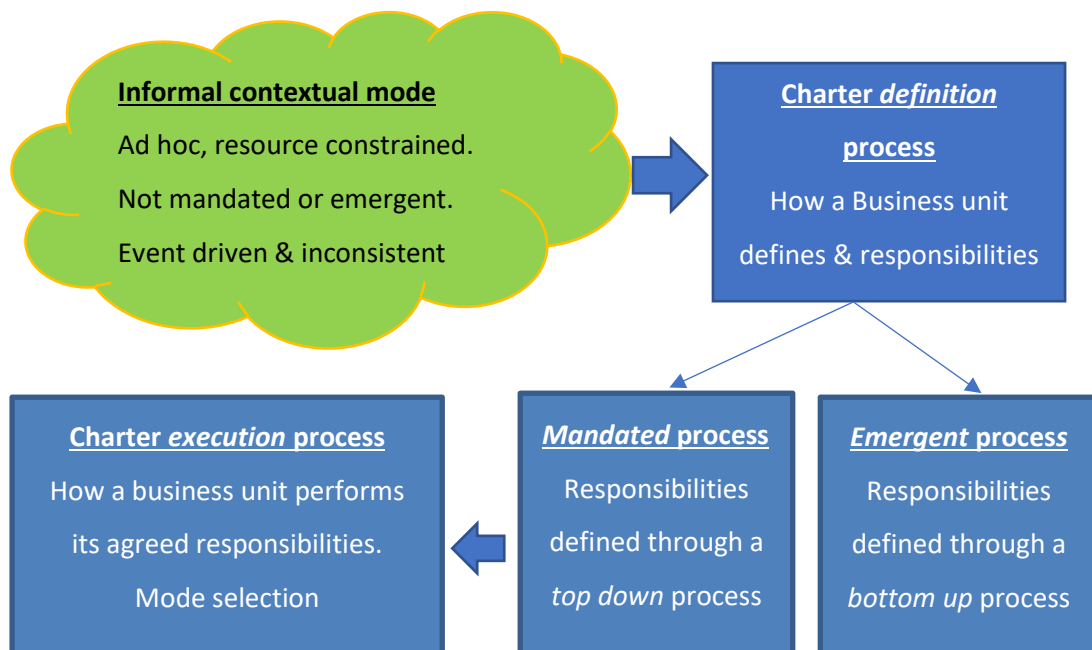


Table 6. 2 Initiation Process

This pre-commencement path dependent position is part of the proposed additional first pathway stage explained in the next Chapter 7, which considers the unique owner managed characteristics, strategic orientation, the alignment of ambidexterity to strategy and design of the toolkit questions.

6.2.2 Strategy and Ambidexterity Alignment

The alignment of strategy is often overlooked in ambidexterity theoretical research, it is an implied assumption that a strategy is already in place and consistent with an ambidextrous pathway. All but one of the interviewed firms considered strategy and how to manage exploitation and exploration activities, although without using such terminology until prompted. The commencement of exploration and exploitation activities was with no formal understanding or consideration of any theoretical ambidexterity construct “you go with your gut feeling” (Appendix 5 Interview G, 2019), “it’s nearly all down to cash flow” (Appendix 5

Interview C, 2019), “*all leads down to my educated guess on red or black*” (Appendix 5 Interview E, 2018).

This is not to say strategy was not considered, in fact it was cited in interviews 27 times. What it does say is it is important pre-commencement to understand the strategic vision of owner managed firms to see if aligned to ambidexterity. The strategy could be elaborated on when questioned, but it was mainly in the minds of the owner managers, none had a fully documented regularly monitored strategy. The data found three strategic objectives existed. Firstly, a lifestyle or survive strategy, “*we have no big aspirations*” (Appendix 5 Interview G, 2019). Secondly, a defender or reactor strategy “*we follow the leaders*” (Appendix 5 Interview F, 2020). Thirdly, a growth strategy usually focused on developing via exploration, “*branch out into other markets*” (Appendix 5 Interview E, 2018). The informal contextual mode may be an acceptable modus operandi for owner managed businesses if it is consistent with its strategic objectives, notably, a defender or reactor strategy (Miles and Snow, 2003).

These findings support this thesis’ proposal of a new pre-commencement stage 1 to the original Raisch *et al.* three stage ambidexterity pathways. This first stage is to understand whether a firm’s strategy is aligned to ambidexterity. If not, then an attempt to become an ambidextrous organisation may not enhance performance and distract from the strategic vision which has no requirement for the formalisation of exploitation and exploration.

[6.3 Initiation and Mode Selection](#)

This discussion point centres on understanding and consideration of the appropriateness of existing theoretical initiation frameworks and impact on mode selection. Whilst the existing literature separates the initiation and mode selection process this research also considers their interdependency found in both the interviews and case study firm.

6.3.1 Initiation

This discussion centres around identifying what triggers owner managed firms to move from an informal contextual mode to initiate a charter definition process. The case study provides practical evidence to answer the question of “how” ambidexterity is initiated. However, to do so requires the answering of “why”, “when” “what”, and “who” questions to link to Zimmerman *et al.* framework. The “why” and “when” in the case study was due to the business outgrowing its owner managers (Hadjimanolis, 2000), consistent with research on it emerging from strategy (Sinha, 2019). As to “what” prompts initiation to be considered this research found the pre-commencement existence of difficult to measure or balance outcomes, evidenced by incomplete exploration and exploitation tasks which were undertaken in an informal ad hoc manner. As to “who” initiates the process it was the owner managers considering their future role and the need to introduce experienced cognitive managers to achieve their strategic goals and oversee the ambidexterity journey. These are fundamental questions to be asked by a practitioner pre-commencement of why, when, what and who, to be able to conclude on the choice of either a mandated or emergent charter definition process.

This case study firm recognised the need to bring in more cognitive management capabilities to execute the strategy alongside ambidexterity moving away from an informal contextual mode. One of the challenges was recruiting these qualified, experienced managers to support future growth and to be confident of letting go of control, seen in both the R&D and Business Improvement interventions. The case study firm initiated a charter definition to delegate control and adapt the organisational structure; including the recruitment of managers with appropriate cognitive ability and skills required for exploration and exploitation management. The case study had two emergent charter processes (both in contextual modes) and two mandated charter processes (both in separation modes). It is important to note the selection of modes was independent of the charter process selection, it was coincidence there were two of each. The two mandated charters were in successful interventions, the two emergent charters were unsuccessful until changed to a mandated charter (and separate modes).

It is recommended that when recognising an informal contextual mode with a dominant top down owner managed structure, practitioners choose a mandated charter, a process more in tune with a gradual migration of control and decision making from owner managers to intervention teams. This recommendation is evidenced by all the four interventions being successful in such a process. However, this research qualifies these conclusions in several areas. Firstly, path dependency is important as in both the case study and interviews the firms all exhibited strong top down decision making owner managers, a mandated charter acted as a stepping stone in the transition of decision making responsibility. They did not immediately lose all influence as they still controlled the vision. If a more collegiate culture exists, where line managers have greater involvement and more strategic cognitive ability, then such a stepping stone may be less important. Secondly, the management were inexperienced so asking them to develop a process involved a slow learning curve. Thirdly, the two sales interventions in an emergent process may have been successful in a contextual mode had the processes and organisational change been less complex and the environment less turbulent.

6.3.2 Mode Selection

This discussion centres around selecting the appropriate mode to undertake exploration and exploitation when attempting for the first time to become an ambidextrous organisation. The analysis and interpretation of these mode conclusions needs care to avoid causality logic. It is factually correct to say the two mandated charter interventions in separate modes undertaking only exploration were successful, staying within forecast resources, remaining balanced and achieved in the time horizon. Meanwhile, the two emergent charter interventions in a contextual mode undertaking exploration and exploitation were unsuccessful, requiring more resources, were imbalanced and exceeded the forecast time horizon. Furthermore, when the two emergent charters moved to a mandated charter in separate exploit only mode; like the two originally mandated charters, they also delivered successful outcomes. These are the facts!

However, the practitioner must also consider other factors impacting on the outcomes, notably turbulence and complexity which made the balancing of exploration vs exploitation in a contextual mode challenging. It expanded the management team's scope requiring more skills and cognitive ability, especially given the frequent short term commercial buffeting. This latter factor is important as it was harder to ring-fence the two sales interventions when day to day commercial challenges existed, relative to the two longer term less buffeted R&D and Business Improvement exploration interventions. Despite this qualification the research clearly supports a separate mode for interventions undertaking either exploration or exploitation, but not both. The discussion points and considerations for charter definition and mode selection can be summarised in the following table.

Initiation and Mode	Discussions and Considerations.
Understanding and selection	Pre-commencement ensure management team gain a theoretical grounding. Consider whether the teams have the cognitive ability to operate in each alternative mode.
Pre-initiation	Operating in an informal contextual mode. Not mandated or emergent, driven by external events or ad hoc opportunities, often led by owner managers following or reacting.
Ambidexterity Initiation	Business outgrowing owner manager's ability to control in an informal contextual mode. Initiate charter definition process to delegate control and adapt organisational structure. Recruit managers with appropriate cognitive ability and skills.
Charter selection- Mandated or Emergent?	If top down owner managed structure apply mandated charter. Enables gradual migration of control and decision making from owner managers to intervention teams. Acts as a stepping stone.
Mode selection- Contextual or separate?	In a turbulent and complex environment attempting ambidexterity for the first time a structural mode is recommended. It simplifies the process allowing managers to focus on fewer project objectives with less distraction.

Table 6. 3 Initiation Considerations

6.4 Balancing

This discussion centres around how to optimise balancing of exploration and exploitation both within individual interventions and companywide. The previous mode section finds pre-commencement owner managers operated in an informal contextual mode as “allrounders”, the interviews confirmed they are atypical of large traditional public firms. Performance outcomes were often path dependent and influenced by a configuration of factors; owner managed influence, entrepreneurial orientation and exploration and exploitation balance (Hughes, Filser and Harms, 2018). The interviews also identified use of a network-supplier collaboration to provide necessary exploration outcomes, often to offset the resource constraints they face (Stadler, Rajwani and Karaba, 2014). The findings support the conclusion of balance, pre-commencement, being a nebulous concept to owner managers who operate in what this thesis terms an informal contextual mode.

6.4.1 Interventions

Achieving balance varied in the four interventions. For the R&D and Business Improvements departments undertaking exploration only via a mandated charter in a separate mode, successfully balanced exploration projects delivered within the pre-set plan. The two Specification and Trade Sales interventions developed from an emergent charter, requiring balance of exploration and exploitation utilising a contextual mode failed, until changing to a mandated charter in a separate mode with a simplified scope of only exploitation. These changes occurred as a result of the monitoring and measurement of the interventions as part of my normal business activity as CEO. Each intervention had a regular view period and meeting with the management team (Appendix 4 BI issues 3 T, 2019). Key performance indicators were used to monitor progress at these meetings (Appendix 4 BI review 4 ZG, 2019). These prompted subsequent meetings if issues arose for example the need remove resistance (Appendix 4 Communication departures 1 ZR, 2019). These subjective judgements were supported by more formal qualitative measures including traditional sales performance

statistics (Appendix 4 Digital customer model 4 ZG, 2019), employee performance (Appendix 4 Employee turnover 4 ZW, 2019) and profit and loss analysis. These were monitored by me, as CEO, to consider if the progress was in line with the original goals, if not as in the case of the two sales interventions they were revisited and readjusted to reset the plans to achieve the goals (Appendix 4 2nd revised sales organisation 4 Y, 2019). The key changes been in initiation charter, mode choice and undertaking exploitation or exploration, not both. The monitoring and measurements provided the data to support the decision to simplify the objectives for an inexperienced management team making it easier to balance, removing the need for the management teams to try to allocate resources and so achieve the performance goals.

6.4.2 Companywide

As discussed in the previous section all four interventions individually moved to mandated separate modes to exploit or explore only. Consequently, there was no exploration and exploitation balancing in individual interventions. Instead balance was achieved on a companywide level by the CEO operating in a formal contextual mode to provide trust, support, stretch and measurement to each of the interventions teams (Gibson and Birkinshaw, 2004). This was a hybrid mode situation whereby each intervention business unit operated in a separate mode to achieve their objectives whilst the CEO was operating in a contextual mode to ensure overall ambidexterity was balanced. Recent literature published after this data had been analysed has reached similar conclusions about hybrid modes (Ossenbrink, Hoppmann and Hoffmann, 2019) and blended ambidexterity (Foss and Kirkegaard, 2020) giving support to the approach recommended in my research. For this approach to be successful it requires an experienced individual or team to oversee these individual interventions to achieve companywide ambidexterity. This may be the owner managers, or in the case study the CEO, experienced in ambidexterity. If neither of these have the experience, then consideration should be given to recruitment of an experienced outsider to lead this process.

6.4.3 Optimisation

Throughout the controlled action research time horizon there was a constant revisiting and review of both companywide and individual balancing in a dynamic environment requiring regular reassessment of resource allocation. This is consistent with other research findings in owner managed businesses (Verreynne, Meyer and Liesch, 2016). Furthermore, exploration activities were deemed necessary, but defining the scope and time frame for measurement was judgemental, in a dynamic environment the ability of managers to reach an optimised balance position during the ambidexterity time horizon is a moving target, it is not static. Therefore, a practitioner should be aware of the need to frequently monitor, review and adapt exploration and exploitation activities, accepting the need to constantly balance and not expect a single locus of balance. To be able to manage in dynamic environments this research highlights the need for fluid monitoring and measurement of the ambidexterity pathway. The balance considerations are summarised in the table below.

Balance	Discussions and Considerations
Interventions	Consider undertaking only exploit or explore interventions to simplify the process.
Companywide	Requires an experienced individual or team to oversee the individual interventions to achieve overall companywide ambidexterity. Hybrid modes or blended ambidexterity.
Optimisation	Review frequently, adapting explore and exploit activities. Accept the need to constantly balance, do not expect to one locus of balance.

Table 6. 4 Balance Considerations

6.5 Turbulence and Complexity

Turbulence and complexity were a common theme: pre-commencement; when initiating; in mode selection; whilst balancing and impacting on antecedents, conflicting with this research's recommendation to simplify processes. The following section discusses where

turbulence and complexity arise and how to minimise the impact on the Lavie *et al.* explore and exploit categories.

6.5.1 Complexity

Complexity was identified in the interviews and case study findings, occurring in several categories of the explore and exploit construct. The organisational antecedents indicated a high degree of tacit knowledge which added complexity in the transfer of knowledge and slowed down completion in all four interventions due to existing managers having new responsibilities requiring new skills and externally recruited managers struggling to access undocumented existing knowledge (Appendix 4 Internal communication 1 L, 2019). This complexity was reduced by setting up an online central virtual library with training videos, technical documentation, specification and process sheets. This research concludes practitioner's pre-commencement should consider knowledge formalisation, introduction of a knowledge repository and documentation systems to reduce dependency on employees tacit informal understanding.

All four interventions required organisational structures to change, emphasising the importance of middle managers and ensuring behavioural integration pre-commencement (Taylor and Helfat, 2008). Practitioners pre-commencement should consider formalising organisational structures (Appendix 4 Six sigma 2 ZP, 2019), (Appendix 4 Engineering skills 2 B, 2017) and remove any managers incapable or unwilling to support the ambidexterity journey (O'Reilly III and Tushman, 2011). This creates a formal mechanistic, rather than an informal organic structure to improve control, communication and measurement to assist in reducing complexity by reducing distractions during the pathway. The discussions and considerations from the analysis of organisational antecedents is summarised in the following table.

Antecedent		Discussions and Considerations	
Organisational			
Knowledge		Formalise undocumented knowledge. Avoid dependency on employees, tacit understanding. Introduce knowledge repository and documentation system so reducing inherent business complexity.	
Structure		Introduce a formal mechanistic structure to improve control, communication and measurement to reduce complexity. Removal of any managers incapable or unwilling to support the ambidexterity journey.	

Table 6. 5 Organisational Considerations

6.5.2 Turbulence

Turbulence was seen in many categories, but no more so than in environmental antecedent sub categories, which were influential in all four interventions, particularly impacting on resources, balance and trade-offs. Exogenous and endogenous shocks distracted the management team (Appendix 4 Sales decline meeting 4 P, 2018) and despite additional resources both Specification and Trade Sales interventions only succeeded when turbulence was reduced by refocus on exploitation only with a mandated separate mode. The conclusions from both case study and interviews indicated endogenous and exogenous shocks had a negative effect on the ambidexterity attempt (Appendix 4 Operational issues 4 T, 2017). Therefore, this research concludes owner managed firms should attempt ambidexterity in an environment where turbulence is minimised and wherever possible shocks avoided. This provides managers with more stable conditions to reduce business risk and costs and extend the time horizon.

Turbulence was also caused by increased competitive rivalry making it more difficult to achieve ambidexterity (Appendix 4 supplier stock 1 X, 2018), (Appendix 4 Specification sales lost 1 I, 2017). The exogenous shocks, usually short term, competitor led had a greater than anticipated effect on commercial sales activities than on the Business Improvements and R&D projects, which were easier to ring-fence as not on the commercial frontline (Appendix 4 Pre acquisition issues 1A, 2017). This research concludes when a high competitive rivalry

exists any commercial interventions are performed in a separate exploitation only mode, with exploration in a separate mode, allowing firms to be agile and removes the need to balance which otherwise may delay exploration if within the same team's contextual mode remit.

Market dynamism was experienced as markets consolidated, competition increased, and product commoditisation occurred. It was the reason for setting up R&D and Business Improvements departments to explore for new products, business efficiency and differentiation. This was also within the two sales interventions' remit, but unsuccessful until these functions were transferred to the other two exploration only interventions. The findings conclude in a dynamic environment separation of exploration activities helps improve results as the management is less distracted by short term market turbulence and able to avoid resource allocation disruption. To do this the business should consider if and how it can try to avoid or minimise turbulence during the intervention time horizon. One option is to undertake scenario planning and analysis, discussed later in this chapter. The discussions and recommendations for practitioners to consider from the analysis of environmental antecedent sub categories are summarised in the following table.

Antecedent Environmental	Discussions and Considerations.
Shocks	Endogenous and exogenous shocks had a negative effect on the ambidexterity attempt, requiring additional resources. Attempt ambidexterity in an environment where turbulence is minimised and wherever possible shocks avoided.
Competitive rivalry	Where competitive rivalry is high perform commercial interventions in separate exploitation and exploration only modes. Allows firms to be agile and removes need to balance which otherwise may delay exploration.
Dynamism	Separation of exploration activities helps improve results. Less distractions, so avoids resource allocation disruption.

Table 6. 6 Environmental Considerations

6.5.3 Resources Impact

The resource requirements in all four interventions was underestimated. It is difficult to exactly quantify to what extent this was a direct result of undertaking ambidexterity and what was due to additional unexpected endogenous and exogenous shocks. Therefore, whilst very clear consistent findings have been obtained from both interviews and the case study, caution must be taken with conclusions and recommendations. The practitioner must possess a healthy scepticism when considering the causes of the resource overrun, as they may have been influenced by poor forecasting, even though past project forecasting had been accurate. Irrespective of the root cause the case study findings indicate the greater the complexity and turbulence the greater the resources required. The interviews also saw a constant theme of firms experiencing turbulence and complexity trying to mitigate for the lack of resources to undertake exploration by developing alliances; *“we joined up with a major waste company”* (Appendix 5 Interview H, 2018), or partnering with suppliers; *“trying to work with suppliers”* (Appendix 5 Interview E, 2018).

Again the lack of experienced cognitive managers negatively impacted on ambidexterity implementation, several long term managers were unable to adapt and struggled to manage the complexity and turbulence (Appendix 4 Departures 1 AH, 2018). As seen in the previous Chapter 5 the practically experienced cognitive managers improved and accelerated the ambidexterity process by coordinating and monitoring each intervention and ensured they communicated performance measurements to monitor progress allowing overall goals to be maintained (Smith and Tushman, 2005).

All four interventions needed to increase financial resources as they exceeded budget, often occurred from increasing turbulence and complexity which changed antecedents during the time horizon. A disproportionately greater budget overrun was observed in the two sales interventions where the management teams attempted an emergent charter process utilising a contextual mode. Resources became unbalanced and were diverted from exploration towards short term commercial exploitation tasks. The findings also complement existing literature which identifies trade-offs being significant where people and resources are restricted and cognitive ability is lacking (Cooper, Gimeno-Gascon and Woo, 1994; Milliken and Forbes, 1999). This research recommends practitioners should

consider additional resources if a turbulent or complex environment is expected. The discussions and considerations for practitioners from the analysis of resource findings can be summarised in the following table.

Resources	Discussions and Considerations.
People	New managers with cognitive relevant experience improved outcomes, recruit from outset. Remove employees unable or unwilling to adapt to changes.
Financial	If turbulence or complexity expected, consider additional resources or a financial contingency fund. Additional resource requirement more probable when initiated emergent charter and a contextual mode balancing exploration and exploitation. Short term exploitation pressure may result in abandoning exploration in a contextual mode unless control process in situ. Separate mode may allow easier resource allocation.

Table 6. 7 Resources Considerations

6.5.4 Mode Selection

It was harder to ringfence the two sales interventions' exploration agendas when day to day commercial challenges existed, relative to the two longer term less buffeted R&D and Business Improvement exploration interventions. This has led to the recommendation for a firm operating in a turbulent and complex environment attempting ambidexterity for the first time to use a structural mode to simplify the process. The simplification comes from fewer goals, avoiding balancing of exploration and exploitation, easier resource allocation and reducing trade-offs, so allowing managers to focus on fewer project objectives with less distractions.

6.5.5 Trade-offs

The case study and interviews provided practical evidence of exploitation and exploration trade-offs associated with complexity and turbulence. The interviews highlighted use of

developing networks to resolving the exploration and exploitation paradox when resources limited, supporting literature in suggesting exploration and exploitation via a network mode can be a complementary as well as alternative mode option (Stadler, Rajwani and Karaba, 2014).

Both the interviews and case study findings showed short term financial performance declined due to increased turbulence and complexity caused by acquisition integration, endogenous and exogenous shocks and organisational change *“you are sacrificing short term profit”* (Appendix 5 Interview A, 2020), *“would love to invest more money”* (Appendix 5 Interview C, 2019). It was increasingly difficult to balance and in such conditions the possibility of significant short-term performance decline should not be underestimated. The practical intervention outcomes support and add to the literature that ambidexterity creates a short versus long term performance trade-off (Lavie, Stettner and Tushman, 2010).

The three-year controlled experiment period was deemed long enough to conclude the case study firm had become an ambidextrous organisation. Each intervention had a different time horizon, it was difficult to establish a time horizon due to unexpected buffeting. Exploration activities were forecast to have longer but more accurate timelines in which it was easier to ring-fence the tasks. Therefore, it is recommended practitioners should look to simplify exploration and exploitation by operating separate modes to improve the probability of achieving the ambidexterity time line.

As recommended in the earlier part of this chapter a more detailed analysis of scenarios would have helped to improve the timeline forecasting. In particular to allow for more contingency planning especially when the interventions, usually commercial exploitation tasks cannot be effectively ring-fenced from complexity and turbulence. The discussions and considerations for practitioners from the analysis of trade-offs is summarised in the following table.

Trade- offs	Discussions and Considerations
Explore and exploit	Simplify by separation of exploration and exploitation into individual departments. Reducing need to balance resource resources manage trade-offs.
Short and long term performance	Likelihood of short-term performance decline. Difficult to exactly assign performance outcome to ambidexterity due to other factors.
Time horizon	Difficult to establish a time horizon. Divergence due to unexpected buffeting usually commercial exploitation tasks which cannot be effectively ringfenced.

Table 6. 8 Trade-offs Considerations

6.6 Strategic Planning Scenarios

The pre and post analysis of antecedents revealed considerable change during the three-year time horizon and not be a reliable indicator of the firm’s future position. They were influenced by disruption from environmental market shocks causing turbulence (Appendix 4 Sales reactivation 4 F, 2019) and by organisational change adding complexity (Appendix 4 Sales survey 4 J, 2019). Some complexity issues such as formalisation of knowledge and organisational structure changes could have been addressed earlier with strategic planning scenarios so avoiding the needs for revisions, such as the impact of competitive rivalry and market change, *“we realised it was not long term for us”* (Appendix 5 Interview G, 2019). If these issues had been identified and addressed in advance it would have reduced time horizons and needed less resources and fewer trade- offs, *“adverse conditions are going to take place every year”* (Appendix 5 Interview F, 2020). The following discussions explain how strategic planning scenarios could improve the ambidexterity pathway. In doing so they recommend strategic planning scenario is added to the conceptualisation stage by proposing a series of toolkit questions to reduce turbulence and complexity. The questions are developed in Chapter 7 based upon identification, analysis and mitigation.

6.6.1 Identification

The failure to fully analyse a firm's strategy to identify potential scenarios over the time horizon puts financial, commercial and organisational strain on the company. Such identification was absent in interview feedback, reiterating the importance in owner managed firms of strategic behaviour and how it links to ambidexterity (Verreynne, Meyer and Liesch, 2016). This research proposes prior to commencement the management team reviews each proposed ambidexterity task vis a vis the Lavie *et al.* construct categories to identify possible scenarios which may occur as a result of the ambidexterity attempt.

6.6.2 Analysis

The practical findings revealed considerable change as unplanned events occurred. Although pre-commencement the antecedents were reviewed, they were not analysed in the context of the firm's strategy to consider the impact of undertaking ambidexterity. The ambidexterity interventions were regarded as something of an isolated project to optimise the firm's exploration and exploitation approach. The importance of the practical link to strategy implementation and possible impact of other scenarios was inadvertently underestimated and insufficiently analysed or measured (Appendix 4 Operational issues 4 T, 2017). This was an oversight and a practical learning point. Consequently, additional resources were required and readjustment to all four interventions (Appendix 4 Data analytics 4 ZB, 2019). It is recommended a "what if" analysis of identified scenarios is undertaken before attempting ambidexterity to quantify the impact.

6.6.3 Mitigation

The disruptions identified in both the interviews and case study concluded scenario mitigation pre-commencement is beneficial with emphasis on two themes of reducing turbulence and complexity. Therefore, if the scenario identification and analysis suggests future turbulence during the ambidexterity time horizon consideration should be given to

delaying any ambidexterity attempt until a more stable external environment exists with fewer exogenous or endogenous shocks. For example, in the case study, waiting until after Brexit and exchange rate disruptions, or when competitive rivalry is reduced. However, it is recognised such a delay may not always be possible, if for example, there is disruptive, highly dynamic product innovation or market consolidation threatening the future of the firm.

The findings highlighted several examples of additional complexity, including organisational changes (Appendix 4 Specification teams 1 ZI, 2017), (Appendix 4 Organisational structure 1 ZP, 2019), and acquisition integration (Appendix 4 Commercial teams 1 AG, 2019). These instances highlight how scenario planning may have identified this additional complexity and prompted actions to mitigate the negative impact on the outcome (Appendix 4 Sales survey 4 J, 2019). For example, this researcher, with the benefit of hindsight, would have introduced a formal mechanistic sales organisation structure before the Trade Sales intervention (Appendix 4 Customer retention 1 W, 2018). This may have reduced the distraction caused by employees focused on their future at the same time as contemplating the new ambidextrous sales strategy objectives. Instead, this was only resolved mid intervention when the ambidexterity attempt was failing and financial underperformance was apparent (Appendix 4 sales reorganisation 1 K, 2019), (Appendix 4 Specification teams 1 ZI, 2017). This is supported by reference to the findings of the Business Improvements and R&D interventions where the teams were formally established pre-commencement with fewer legacy issues, experienced less complexity and progressed more smoothly with less need for additional resources.

The reduction in complexity assumes greater importance if it is not possible to avoid a turbulent environment. The simultaneous combination of turbulence and complexity provided several negative intervention examples in the case study and the interviews. This research recommends consideration should be given by firms attempting ambidexterity for the first time to perform in depth scenario mitigation planning with the objective of reducing turbulence or minimising complexity to allow managers to focus on the challenges ambidexterity itself brings. These discussions and considerations for practitioners from the analysis of strategy as an antecedent and how scenario can improve probability of success outcome is summarised in the following table.

Strategic Scenarios	Discussions and Considerations.
Identification	Identify for strategy possible scenarios which may occur as a result of attempting ambidexterity.
Analysis	Recommend a “what if” analysis to examine and measure scenarios before attempting ambidexterity based around core toolkit questions in Chapter 7.
Mitigation	Avoid or delay ambidexterity if turbulent environment anticipated. Minimise complexity by making changes pre-commencement. Objective to mitigate risk and cost of implementation failure by including strategy as an antecedent to ambidexterity.

Table 6. 9 Strategic Scenario Considerations

Chapter 7 Ambidexterity Pathway - A Five Stage Toolkit

7.1 Introduction - The Five Stages

Based on the interviews and case study interventions I have developed a toolkit to assist owner managed firms to achieve ambidexterity. It has been designed and recrafted along the three-year time horizon to take onboard the successes and failures of what worked and what did not. In doing so it provides a credible methodology able to stand up to the rigorous challenges a practitioner has to face and resolve when outside of the rarefied theoretical atmosphere and instead on the front line facing everyday a dynamic business environment. The pathway developed comprised of five stages, three of which are an adoption of Raisch *et al.* theoretical framework; initiation, conceptualisation and implementation. The remaining two stages are additions derived from this practical thesis research. A new stage 1, pre-commencement and a final stage 5 of monitoring, coming after the implementation stage. This five stage toolkit and recommended approach is outlined in the following table.

Pathway stages 1 to 5	Decision makers	Mode	Actions
Stage 1 Pre- commencement	Stakeholder ad hoc	Informal contextual	Understanding and alignment of strategic goals. Informal contextual mode transition options. Identify explore and exploit framework, consider scenarios.
Stage 2 Initiation	Leadership team	Mandated charter	Understand the paradoxes. Establish path dependency impact. Select charter process.
Stage 3 Conceptualisation	Leadership team	Structural	Answer toolkit questions looking at scenarios. Identify tensions, complexity, turbulence. Select

			interventions to develop an ambidexterity plan.
Stage 4 Implementation	Line managers	Structural	Charter execution process. Managing tensions, thinking paradoxically. Project management and communication.
Stage 5 Monitoring	Leadership team	Hybrid	Reviewing progress and measuring. Analysing performance in dynamic environment rebalancing if required.

Table 7. 1 Five Pathway Stages

Stage 1; pre-commencement, establishes a firm’s starting position and if a strategy exists. If so, analyse strategic objectives and align to ambidexterity via toolkit questions. Once these questions are answered they enable the practitioner to consider whether its strategy is appropriate for ambidexterity. Look to identify strategic scenarios to analyse and mitigate prior to implementation by considering in the conceptualisation stage 3.

Stage 2; initiation, considers what approach and methodology to utilise to develop an ambidextrous charter definition process. It cross references to existing theoretical frameworks as to how to practically initiate ambidexterity (Zimmermann, Raisch and Birkinshaw, 2015), assessing whether to use a mandated (top down) or emergent (bottom up) charter process. This stage also examines the firm’s existing methodology to exploit and explore. In particular, to identify if an informal contextual mode exists, potential disruption during transition and what stepping stones may assist in the ambidexterity journey.

Stage 3; Conceptualisation, uses the charter definition to consider how to build a charter execution plan. The toolkit asks a series of questions to identify scenarios and practical issues which may arise during the implementation. These questions are derived from the case study and interview data based around the Lavie *et al.* construct with the addition of strategy as an antecedent. This is important as it aims to identify and minimise any complexity and turbulence in the ambidextrous plan. The output of this stage is a practical plan agreed by the stakeholders and leadership team ready to be implemented.

Stage 4; Implementation, uses the information from the previous three stages to execute a bespoke exploration and exploitation companywide ambidexterity plan. These are project managed explore and exploit interventions within a time horizon consistent with its strategy and objective to operate ambidextrously.

Stage 5; Monitoring, is a proposed additional stage focused on regularly revisiting the plan to review progress to enable trade-offs to be measured and ascertain whether it remains within its balance coordinates correctly allocating resources. This review process, as seen in the case study, is necessary to allow consideration of resetting or amending interventions to achieve original objectives and maintain overall balance. This sequential five-stage approach is a general template to allow a practitioner to structure a bespoke solution to becoming an ambidextrous organisation based upon theoretical frameworks supported by practical data that allows replicability.

7.2 Toolkit Questions

To make the pathway applicable to each unique situation, considering each firm's own circumstances, whilst remaining sufficiently structured I have developed a toolkit template with questions. It provides guidance on how to proceed using the five stage pathway to transform a generic theoretical construct into a practical bespoke solution which acknowledges path dependency and a firm's uniqueness. There are sixteen toolkit questions embedded in four of the five stages; pre-commencement, initiation, conceptualisation, and monitoring. The questions are derived from three sources. Firstly, practical findings from the case study interventions. Secondly, from analysis of the independent interviews. Thirdly, deduced from the case study and interview outcomes; which may not have been tested, but in hindsight would have helped the process. These questions provide practical empirical support to the pathway, underpinned with a theoretical grounding. The toolkit answers enable the practitioner to build a practical bespoke solution, not a one size fits all "ambidexterity in a box" solution. The sixteen questions are summarised by stage in the following table.

TOOLKIT QUESTIONS - PRE-COMMENCEMENT - STAGE 1	
Q1	Is there a strategy?
Q2	What is the strategic vision?
Q3	Is the strategy compatible with ambidexterity?
	TOOLKIT QUESTIONS - INITIATION - STAGE 2
Q4	Can an existing explore and exploit process be identified?
Q5	What is the proposed charter definition process?
	TOOLKIT QUESTIONS - CONCEPTUALISATION - STAGE 3
Q6	What business scenarios could impact on ambidexterity?
Q7	What ambidexterity scenarios could impact from its introduction?
Q8	Will path dependency affect exploration and exploitation?
Q9	Where may turbulence occur?
Q10	Where may complexity occur?
Q11	What resources are required and what constraints exist?
Q12	What managerial competencies are required to explore and exploit?
Q13	How will companywide balance of exploration and exploitation be achieved?
	TOOLKIT QUESTIONS - MONITORING - STAGE 5
Q14	How will a successful outcome be defined?
Q15	How will ambidextrous interventions be measured?
Q16	How will ambidexterity impact be isolated from other business events?

Table 7. 2 Toolkit Questions

The remainder of this chapter looks at each stage and the relevant questions providing an explanation as to their practical relevance to the pathway stage.

7.3 Pre-commencement - Stage 1

The pilot and formal interviews based upon semi-structured questions, were particularly incisive as they re-emphasised the importance of path dependency and did not implicitly assume owner managed firms' strategic objectives are aligned to attempting ambidexterity. It is acknowledged from an academic stance the pre-commencement questions are broad in

their nature. This is a necessary and intentional starting point for practitioners to ensure the full scope of ambidexterity is considered. This is because the findings in the interviews highlighted the lack of both strategy and ambidexterity understanding by owner managers, and so were seen by interviewees as an opaque concept. Starting the pathway journey via general open questions is helpful because such questions prompt attention without biasing responses (Eisenhardt and Graebner, 2007). They highlighted the often incorrectly implied assumption in ambidexterity literature that owner managed firms have a formal strategy (Chang, Hughes and Hotho, 2011). The practitioner is able to follow up these open questions by drilling down into the firm’s strategy and key objectives to tease out and match to the ambidextrous issues of how they explore and exploit. The analysis of strategy is outside the scope of this research.

Pre-commencement is a proposed additional first stage to the Raisch *et al.* framework. Three toolkit questions are proposed. Firstly, if there is a strategy. If not, the firm is probably not ready to consider an ambidexterity pathway. Secondly, if there is a strategy what is the vision to ensure exploit and explore objectives clearly exist and are within a firm’s capabilities. A practical option is to utilise the Miles *et al.* (Miles and Snow, 2003) strategic orientation categorisation: defender; prospector; reactor or analyser. A defender or reactor strategic orientation is unlikely to benefit from trying to undertake exploration and exploitation activities and look for balance. Thirdly, to consider the various forms of ambidexterity if the strategy is consistent with implementation across the whole business and the ability to consider the various ambidextrous facets of time, organisational requirements, business units impacted and actors’ involvement. The toolkit questions are introduced as a prerequisite to the consideration of ambidexterity to assess if there is a strategy and whether it is aligned to ambidexterity as shown in the table below.

Toolkit Questions - Pre-commencement - Stage 1	
Q1	Is there a strategy?
Q2	What is the strategic vision?
Q3	Is the strategy consistent and compatible with ambidexterity?

Table 7. 3 Pre- Commencement Questions

The outcome of these questions are likely to be “go or no go” conclusions as to whether a firm’s outlook and its path dependency put it at a stage in its evolution to consider becoming ambidextrous. Examples are firms who wish to remain reactors or defenders (Miles and Snow, 2003), both of which may force periods of punctuated exploration rather than proactively seeking to be ambidextrous. This was confirmed in interviews “*you go with your gut feeling and what you feel comfortable with*” (Appendix 5 Interview G, 2019). This thesis research supports this additional stage and questions to ensure practitioners assess the appropriateness of ambidexterity for the firm.

7.3.1 Is there a Strategy?

This question is required as a result of the responses from the interviews revealing a strategy was not always in place, often implicitly assumed in larger firms. A formal strategy cannot be assumed, “*all leads down to my educated guess on red or black*” (Appendix 5 Interview E, 2018). “*It’s like the cavemen mentality, if you’ve not had anything to eat you’re just bothered about getting through the day and 5 years seems miles away*” (Appendix 5 Interview D, 2019). In such firms the ability to identify a strategic vision is unlikely and attempting to analyse strategic goals into exploration and exploitation difficult. In such circumstances if the answer is “no formal strategy can be identified”, ambidexterity should not be undertaken.

7.3.2 What is the Strategic Vision?

This question is derived from the analysis of the interview data which showed a mixed informal strategic vision. The interviews highlighted not all visions were compatible with ambidexterity. For example, if a firm’s objective was only to exist for a short period to remain a lifestyle business, to support owners nearing retirement, to exit via sale or to stay focused on maintaining existing operations. This was seen in interviews, “*looking at what we currently produce and what we need to buy to maintain what we are producing*” (Appendix 5 Interview G, 2019). Whilst the long-term sustainability may be questionable in such

situations the practitioner may wish to consider if the firm's strategy can be categorised into defender, reactor, analyser or prospector (Miles and Snow, 2003). This will help to understand the strategic vision in terms of short and long term and exploration and exploitation actions. One interviewee explained how a small acquisition was considered and dismissed because of the risk and resource constraints (Appendix 4 AD SPA agreement, 2018) and so unable to identify any exploration and exploitation balance criteria. The strategic vision needs to identify exploration and exploitation goals compatible with attempting ambidexterity.

7.3.3 Is Strategy Compatible with Ambidexterity?

This question has been deduced from interview data responses and is essential to ambidexterity success. Therefore, having identified the strategic vision objectives this question is designed to bring together strategy and ambidexterity to ensure consistency with companywide organisational ambidexterity. This is an important boundary condition given the ambidexterity scope expansion to over 6000 Web of Science and 20,000 Google Scholar citations (Wilden, Hohberger and Devinney, 2018) including: Organisational learning; dynamic capabilities and knowledge management; exploration and exploitation and technology and Innovation. This thesis is applicable only to the fourth category of explore and exploit organisational ambidexterity so a boundary condition.

The answers to this question enable strategic objectives to be assessed and categorised as either an exploitation or exploration intervention, or both. The two interventions which combined exploration and exploitation in a contextual mode were unsuccessful and required a change to a separation mode. This does not exclude a firm from deciding to explore and exploit in a contextual mode if the firm has the appropriate capabilities, but such a decision is inconsistent with this thesis' findings. Three pre-commencement questions and the practical recommendations arising from the case study and interviews are summarised in the following table.

Pre-commencement Questions		Recommendation
Q1	Is there a strategy?	If no formal strategy, no ambidexterity attempt.
Q2	What is the strategic vision?	Identify vision. Consider using defender, reactor, analyser, prospector analysis to understand lifestyle, exit, growth vision.
Q3	Is strategy compatible with ambidexterity?	Ensure strategy is to become an ambidextrous organisation comparable with exploration and exploitation goals.

Table 7. 4 Pre- Commencement Recommendations

7.4 Initiation - Stage 2

This thesis research supported the findings of Hadjimanolis (Hadjimanolis, 2000), suggesting firms outgrow their owner managers' cognitive ability and bandwidth to operate in what this research defines as an informal contextual mode. The initiation of a charter definition process considers how to delegate control and adapt the organisational structure to formalise exploration and exploitation, utilising the Zimmerman *et al.* construct. The starting point to initiate ambidexterity is important as it influences the effectiveness of the two charter definition options; mandated or emergent. The emergent charter was a leap in the dark, passing responsibility for the first time to inexperienced owner managers, compared with the mandated charter which was a stepping stone for owner managers who were able to provide a pre-determined vision and so reduce complexity. Two toolkit questions are proposed as follows.

Toolkit Questions - Initiation --Stage 2	
Q4	Can an existing explore and exploit process be identified?
Q5	What charter definition process is appropriate?

Table 7. 5 Initiation Questions

7.4.1 Can an Existing Explore and Exploit Process be Identified?

The interviews and case study found exploration and exploitation being undertaken as and when resources existed via an owner manager led informal contextual mode, no conscious, pre-planned route to balance exploration and exploitation existed. In no interviews was a formal charter process or mode selection identified. The trigger to initiate in the case study and some of the interviews (Interview B, 2018), was the business outgrowing its owner manager's bandwidth, no longer able to multi task and consequently, cannot juggle exploration and exploitation activities. This thesis found evidence (Appendix 5 Interview D, 2019), (Appendix 5 Interview E, 2018), (Appendix 5 Interview C, 2019), to suggest owner managed firms before initiating ambidexterity operate in an informal contextual mode with an owner manager dominated, top down organisational structure.

This question helps to incorporate path dependency in owner managed firms, who unlike larger corporations are usually less endowed with strategically experienced managers in a commercial environment (Chang, Hughes and Hotho, 2011). This question identifies if an informal contextual mode is operating and if so to assess the impact on organisational structure, culture, delegation and required cognitive skills. There is a transition process and this question provides the information to determine the appropriate charter process; emergent or mandated.

7.4.2 What Charter Definition Process is Appropriate?

This question assists in the analysis of the informal contextual mode; the starting point of how owner managers make decisions, delegate and maintain control strategically and day to day. Armed with this information they can identify the impact on organisational decision-making, culture, structure and leadership to understand core capabilities and resource availability, essential to initiating a charter.

In the case study both emergent and mandated charter processes were used twice in the four interventions. Both mandated charters delivered successful outcomes. The two emergent charters were unsuccessful and changed to mandated charters undertaking only exploitation to achieve successful outcomes. The research revealed a hands-on dominant owner manager led decision making process in which the next tier of managers were not fully engaged in strategy or long term planning. Hence, the emergent charter was a step too far culturally, organisationally and cognitively. The intervention managers struggled to develop an emergent bottom up plan as they were unfamiliar with the ambidexterity concept of balancing exploration and exploitation, returning to their past exploitation experience unsure how to allocate resources. This led, unintentionally, to a hybrid situation whereby both the senior leadership and intervention teams were looking to each other for advice, or making independent decisions resulting in a loss of direction. A mandated charter acts as a transitional process to provide a stepping stone for owner managers out growing their business, allowing control of the strategic vision to be maintained whilst passing on experience and delegating to the intervention team. On initiation managers would have also benefited from an introduction to the three theoretical frameworks to build paradoxical thinking and management capabilities to address understand ambidexterity complexity (Smith and Lewis, 2011). The questions and the recommendations to assist a practitioner in initiation are summarised in the following table.

	Initiation Questions	Recommendation
Q4	Can an existing explore and exploit process be identified?	Determine if an informal contextual mode is operating. Introduce managers to the theoretical frameworks to develop paradoxical thinking and capabilities.
Q5	What charter definition process is appropriate?	If strong owner managers with a direct hands-on leadership style and culture acting as a fulcrum of all key decisions, with inexperienced managers with only a past exploit background then a mandated, top down, charter is recommended. It acts as a stepping stone, rather than a leap in business evolution and disruptive radical organisational change.

Table 7. 6 Initiation Recommendations

The case study found a mandated charter to be more effective, providing a clear vision and communication as the firm transitioned from direct owner manager control to delegation to the intervention managers. It simplified the pathway journey by reducing the scope, volume of decisions and juggling of tasks. This was even more pertinent in times of turbulence and complexity.

7.5 Conceptualisation - Stage 3

The conceptualisation stage is based upon the Raisch *et al.* construct and with the toolkit questions is used to design and verify the organisational structures, cultures, processes, and determine mode selection. These semi-structured questions identify, and analyse scenarios designed to open up debate and allow for each firm to design its own tailored. This approach transforms the generalised conceptualisation literature into bespoke advice.

These questions shift the analysis from a static to process orientation approach reflecting the call for dynamic paradoxical thinking (Schad, Lewis and Raisch, 2016). The first two toolkit questions consider pathway scenarios to enable initial framing of the paradox over the time horizon. This permits a problem solving approach building paradox management issues to conceptualise an optimal solution. This helps develop an ambidextrous plan identifying obstacles such as management ability, resource allocation and organisational changes. These questions seek to tease out from the senior leadership team what needs to be considered to limit the impact of trade-offs, achieving outcomes in a cost effective timely manner. This leaves the owner managers still providing the strategic vision, but delegates responsibility for conceptualisation and implementation to the management teams, a stepping stone, as the business outgrows their cognitive and managerial bandwidth.

In the case study the intervention plans initially included two explore only separate modes and two exploit and explore contextual modes. However, all interventions over the time horizon became separate modes. Therefore, this thesis is in favour of a mandated charter and separate mode structure with each intervention undertaking either exploration or

exploitation, but not both. However, the questions are designed to allow each firm to reach its own conclusions. The eight toolkit questions designed to achieve this goal are as follows.

Toolkit Questions - Conceptualisation - STAGE 3	
Q6	What business scenarios could impact on ambidexterity?
Q7	What ambidexterity scenarios could impact from its introduction?
Q8	Will path dependency affect exploration and exploitation?
Q9	Where may turbulence occur?
Q10	Where may complexity occur?
Q11	What resources are required, and constraints exist?
Q12	What managerial competencies are required to explore and exploit?
Q13	How will companywide balance of exploration and exploitation be achieved?

Table 7. 7 Conceptualisation Questions

7.5.1 What Business Scenarios Could Impact on Ambidexterity?

This question tries to identify from the existing strategy what scenarios may occur and influence the ambidexterity actions. These business scenarios are defined as events that will, or will not, occur irrespective of the ambidexterity interventions. This question is derived from the case study data, where only limited business scenario planning was performed to consider the impact on the ambidexterity process. A comprehensive analysis and design of a scenario plan is outside the scope of this research, but it is recommended that a risk analysis approach is used to identify events that may impact on ambidexterity such as “PESTEL” analysis.

The importance of scenario planning increases as the probability of turbulence and the longer the time horizon increases. Since exploration looks more to the future it tends to have a longer time horizon and so increases the probability, *ceteris paribus*, of shocks occurring.

As seen in the case study findings two of the interventions failed mid-way through and required resetting. This was partly caused by endogenous and exogenous environmental shocks and organisational disruption. The belated use of scenario planning vis a vis the ambidexterity plan helped to identify future external issues and develop solutions to mitigate their impact, notably the separation of explore and exploit activities which were buffeted by turbulence and complexity.

Business scenarios	Recommendation
Impacting on interventions	Undertake scenario planning, identify and quantify potential impact of exogenous or endogenous events. Consider how to avoid or ring-fence ambidexterity pathway.

Table 7. 8 Conceptualisation Recommendations

7.5.2 What Ambidexterity Scenarios Could Impact from its Introduction?

This question is approached by considering the categories within the Lavie *et al.* construct. The potential changes on each antecedent of each intervention should be considered to see how they impact on resources, trade-offs and outcomes. Whilst this question has many of the undertones of the previous question it differs in one important respect. Unlike business scenarios independent of ambidexterity these identified scenarios cannot be avoided. They occur because of a firm's decision to become an ambidextrous organisation. These ambidexterity scenarios can be mitigated with a path breaking approach and improved paradoxical management processes.

The changes caused by attempting ambidexterity can be significant, as experienced in the case study. For example, the need to change and strengthen management was only undertaken when recognised mid-way through the two sales interventions. Similarly, the increased competitive rivalry was underestimated and in hindsight fewer commercial changes may have been instigated if this scenario had been more fully considered. Hence, this question gains in importance as turbulence and complexity increases.

Ambidexterity scenarios	Recommendation
Impact on explore-exploit framework	From scenario planning identify and quantify potential turbulence and complexity impact on categories and attempt to simplify processes.

Table 7. 9 Scenario Recommendations

7.5.3 Will Path Dependency affect Exploration and Exploitation?

This question considers the firm’s historical pathway prior to the commencement of ambidexterity to understand how it may influence behaviour and decision, important in any attempt to make an organisation ambidextrous (Clausen, 2013). The interviews highlighted different development paths influencing ambidextrous behaviour characteristics (Appendix 5 Interview F, 2020). In particular, there was evidence of firms continuing to do what they had done in the past to exploit core competencies, so falling into the competency trap (Bierly and Daly, 2007; Sollosy, 2013; Uotila, 2018). In the case study sales interventions they tried to explore and exploit simultaneously but fell back into exploitation (Appendix 4 exploration board plan 1 AE, 2018) requiring the separation of exploration and exploitation and recruitment of new managers with relevant exploration experience to resolve (Appendix 4 Manufacturing plan 2 W, 2019).

The path dependency in the case study was impacted by a reluctance to change culture, long established managers entrenched in past methods resisted organisational change (Appendix 4 Manager departures 2 I, 2019). This threatened to derail the case study firm’s exploration and exploitation journey and best summed up by the Machiavelli quote on resistance to innovation and change, *“who innovates will have for enemies all those who are well off under the old order of things, and only lukewarm supporters in those who might be better off under the new”* (Machiavelli). The Raisch *et al.* research suggests the different pathways to paradoxical management create a certain path dependency. However, these capabilities engrain a certain problem solving default methodology, which ironically risks reinforcing processes which limit a firm’s flexibility to think outside the box to address new emergent paradoxical tensions. This was experienced during the case study interventions’ time horizon

when increasingly negative trade-offs forced a pathway shift needing path-breaking capabilities. This path dependency question and the two toolkit scenario questions encourage a firm to build such capabilities.

This pathway question ensures consideration of management expertise, heterogeneity, organisational structure and culture to help determine resource requirements. By asking relevant questions and analysing the responses the senior leadership team can develop a bespoke approach to organisational ambidexterity acknowledging path dependency and incorporating path breaking capabilities.

Path dependency	Recommendations
Existence	Different paths seen in interviews and case study need to think paradoxically.
Process homogeneity	Path breaking capabilities required.

Table 7. 10 Path Dependency Summary Recommendations

7.5.4 Where May Turbulence Occur?

Turbulence is not a category identified in any of the theoretical frameworks but was a constant feature throughout the time horizon. It compounds the ambidexterity challenge as the analysis of past antecedents and the status quo becomes less relevant to future performance. The management, environmental and organisational antecedents should be analysed, and scenarios considered to look for potential turbulence before ambidexterity commencement to conceptualise turbulence reverberations on resources, trade-offs, balance and mode selection.

The analysis of turbulence should be considered in two parts; external and internal. The external turbulence is outside the firm's control and the analysis has to find a solution for a fixed event and conclude whether it can mitigate or delay the impact on the ambidextrous process. Examples were seen in the case study of increased competitive rivalry (Appendix 4

Sales organisational structure 4 X, 2018) and endogenous shocks which had to be analysed and mitigated, but could not be avoided (Appendix 4 EU leave strategy 1 AI, 2017). For internal turbulence it may be possible with scenario planning to stop the turbulence or wait for it to pass as it is more likely to be in the firm's control. Where possible these impacts should be risk assessed and financial costs quantified. This will help resource allocation, both people and financial, to ensure sufficient resources exist and contingencies considered. It is difficult to exactly quantify to what extent turbulence was a direct result of undertaking ambidexterity and what was due to additional unexpected but abnormal endogenous and exogenous shocks. However, irrespective of the quantifiable magnitude, turbulence negatively impacted on ambidexterity implementation increasing the need for financial resources and demanding greater cognitive skills (Milliken and Forbes, 1999).

Whilst all firms are different a practitioner must consider this research evidence showing that endogenous and exogenous turbulence had a negative effect on the ambidexterity attempt (Appendix 4 Operational issues 4 T, 2017). If the scenarios indicate a significant amount of turbulence this may cause the firm to consider delaying ambidexterity or undertaking a punctuated equilibrium approach (Uotila, 2018), until the external conditions are more favourable or stable.

Turbulence	Recommendation
Identification	Examine scenarios to develop a plan to minimise turbulence.
High external turbulence	Consider postponement until lower turbulence or a punctuated equilibrium approach.
High internal turbulence	Mitigate, complete before commencement or delay plans.

Table 7. 11 Turbulence Summary Recommendations

7.5.5 Where May Complexity Occur?

Complexity like turbulence is not a category identified in any of the frameworks but was also a constant impediment to achieving organisational ambidexterity. However, unlike

turbulence much of the complexity was self-generated from the intervention plans and a failure to fully analyse vis a vis the other events occurring within the business.

To answer the question of where complexity may occur it is recommended four domains of the ambidexterity pathway are examined; antecedents, initiation charter choice and mode selection. This review should examine how and where the strategy and business plans may bring complexity and analyse the potential impact on each of the proposed interventions. These answers can be complemented by considering scenarios in the conceptualisation stage which may add complexity.

Addressing complexity prior to the interventions was one of the thesis' conclusions. The acquisition required organisational integration and cultural change which if completed pre-commencement it would have simplified and accelerated the process. Similarly, the complexity of cultural alignment distracted management teams in the two contextual mode interventions. Contrastingly, the two structurally separate interventions starting with a clear organisational structure, new team culture with no legacy issues was successful. The ability to remove some complexity for the management team is a contributing factor as to why this thesis recommends growing firms in a complex environment select a structurally separate mode. Additionally, in light of the difficulties the inexperienced management team had in developing an emergent, bottom up charter this research also recommends a mandated, top down charter to also reduce complexity. This mandated approach frees up the owner managers to "helicopter" over the business to monitor progress and maintain overall balance whilst being able to delve into a problem if dynamic events trigger the need to change the locus of balance. The answers to these questions provide the senior leadership team with a pre-commencement cross check of complexity issues and potential solutions, highlighting any core competency or resource gaps. The recommendations to assist practitioners in answering the question of complexity and where it may occur and how it may be addressed are summarised in the following table.

Complexity	Recommendation
Organisational structure	Formalise structure (Jansen <i>et al.</i> , 2009), to give clarity of vision and new / changing managers' roles.

Complexity	Recommendation
Reluctance to change and legacy issues	Address people obstacles to remove resistance (O'Reilly III and Tushman, 2011). Coordinate and motivate management teams.
Endogenous and exogenous shocks	Ensure organisational flexibility (Nadkarni and Narayanan, 2007). Consider delaying process.
Informal tacit knowledge	Create a documentation system to reduce dependence on tacit knowledge i.e. knowledge transfer libraries, manuals, training aids.
Mode selection	Undertake a structurally separate mode, so only have to focus on either explore or exploit (Benner and Tushman, 2003).
Initiation charter process	Mandated charter from owner managers removes need for intervention teams to develop their own charter. Also acts as a stepping stone for owner managers in growing businesses to delegate whilst supporting line managers.

Table 7. 12 Complexity Summary Recommendations

7.5.6 What Resources are Required and Constraints Exist?

All businesses face resource constraints and the role of management is to efficiently allocate resources to optimise outcomes. This question is necessary as interviews, case study and literature research (Bierly and Daly, 2007), confirmed the mixture of inertia, turbulence, complexity, trade-offs, risk aversion and the competency trap causes exploitation to become a default modus operandi of management. The case study and interviews also highlighted the practical problem of ensuring planned allocation was maintained throughout the interventions.

This question needs to be semi structured to allow the opening up of discussions as to the quality, not just quantity of human resources required. This is important because whilst the interventions had an abundance of people and past experience there was a lack of cognitive and paradoxical management capabilities (Milliken and Forbes, 1999). Consequently, this

research came out strongly in favour of a mandated charter utilising separate modes of exploitation or exploration only, so simplifying the process for the inexperienced management teams. Additionally, by operating a separate mode only on exploration or exploitation the probability of misallocation of financial resources was reduced and allowed people resources to be focused on the one task. The case study firm's experience of the practical repercussions of resource constraints and allocation difficulties has enabled it to present several recommendations used to adapt to such constraints. This helps answer the question posed of what resources are required and what constraints exist. It acts as a checklist to assist in the effective allocation of scarce resources. These are summarised in the following table.

Resources	Recommendation
Turbulence	Requires more financial and cognitive resources. Ensure correct people mix with paradoxical management capabilities. Consider contingency financial resource planning.
Complexity	Identify where pre-commencement simplification can be undertaken. Develop paradoxical management capabilities. Mandate charter objectives and explore / exploit separation reducing scope.
Antecedents	Scenario planning for each antecedent to see how they may be affected. I.e. reconfigure organisation's structure, formalise tacit knowledge, create correct management team for future not past.
Balance	Mandated charter ensures clear resource allocation without conflict by either explore or exploit. Owner managers oversee companywide balance.
Maintaining planned allocation	Managers defaulted to exploit tasks when problems arise. Separation mode ensures planned resources remain focused on original objectives. CEO oversight has still to allocate resources between interventions.
Monitoring	Regular review process to address problems both by intervention team and CEO companywide oversight.

Table 7. 13 Resources Summary Recommendations

7.5.7 What Managerial Competencies are Required to Explore and Exploit?

This question is derived from the case study findings where management competencies were a constant resource consideration, confirming literature (Lubatkin, Simsek and Veiga, 2006; Taylor and Helfat, 2008; Carmeli and Halevi, 2009; Koryak, Lockett and Hayton, 2018). The earlier conceptualisation questions identified what challenges may lie ahead. This question asks if management have the core competencies to solve these challenges in three areas: scope; ability and behaviour.

Firstly scope, the case study showed the ambidexterity remit was too great in the emergent contextual mode, the teams did not have the bandwidth or experience to create an emergent bottom up charter. A mandated top down charter in a separate mode reduces the scope and simplifies process acting as a transitional intermediary stage whereby the overall vision is provided by owner managers, so reducing the responsibilities of the intervention team for resource allocation, trade-offs and balance.

Secondly ability, can managers deliver the interventions? This question requires the assessment of the cognitive ability to problem solve and think paradoxically to undertake both exploration and exploitation and maintain balance. It was lacking in the two contextual modes causing imbalance, resource misallocation and time overruns. A separate mode is recommended to reduce breadth of cognitive ability required so reducing the tensions arising from the exploration vs exploitation paradox.

Thirdly behaviour, there is a need to examine management behaviour as well as ability, the case study and literature review confirmed exploration and exploitation trade-offs (Cooper, Gimeno-Gascon and Woo, 1994). In the Specification Sales intervention, the team's natural behaviour was to default to exploitation activities where their core competencies existed, leaving exploration uncompleted.

Armed with the answers to these three questions the practitioner can cross reference the management competencies to intervention requirements and scenario planning challenges. This provides the senior leadership team with a checklist of competency gaps. The case study

presents several recommendations to adapt to such competency constraints and are summarised in the following table.

Managerial competencies	Recommendations
Ambidexterity scope	Limit by use of mandated charter to reduce management bandwidth requirements.
Management experience and skills	Despite sufficient number of people, cognitive problem solving capabilities were limited in the face of complexity and turbulence. Separation mode reduces scope to compensate for lack of managers' cognitive ability and heterogeneity.
Behaviour of management	Managers defaulted to past exploit experience when given choice to exploit or explore. Separation mode to either exploit or explore resolved this behaviour trait.

Table 7. 14 Managerial Summary Recommendations

7.5.8 How will Companywide Balance be Achieved?

Turbulence and complexity makes the ambidextrous journey challenging and mandated structurally separated interventions reduce scope and managerial capabilities required. However, this separation raises the problem of how to ensure overall companywide balance. A senior leadership team is proposed to oversee the overall companywide exploration and exploitation balance so harmonising the interplay between the senior leadership and intervention management teams. Its remit is to initiate, contextualise and design the objectives for each exploration and exploitation intervention to provide overall balance. Simultaneously it monitors the overall ambidexterity plan ensuring dynamic align to strategy.

The companywide balance emanates from the senior management team acting in a contextual mode with periods of punctuated activity in interventions. This creates a hybrid situation within the organisation whereby the intervention team operates in a separate mode, whilst the senior leadership team operates more akin to a contextual mode, providing support, trust, stretch and measurement (Gibson and Birkinshaw, 2004). This approach

acknowledges a top team or stakeholders with paradoxical management capabilities who “helicopter” over the business to act ambidextrously integrating exploitative and explorative activities. They can simultaneously and longitudinally work through tensions, reframing paradoxes (Papachroni, Heracleous and Paroutis, 2014). This hybrid ambidexterity was found in recent other case study research after my own field work and findings had been completed (Foss and Kirkegaard, 2020). It is also consistent with a blended ambidexterity approach combining structural and contextual modes (Ossenbrink, Hoppmann and Hoffmann, 2019) and so reconciling initial contrasting separation (Tushman and O’Reilly, 1996) and contextual approaches (Raisch, Birkinshaw and Probst, 2009). This companywide balance approach is summarised in the table below.

Companywide balance Recommendation	
Individual interventions	Mandated charter operated by managers with regular monitoring by leadership team in a hybrid approach
Overall ambidexterity	Paradoxical capabilities of leadership team allow “helicoptering” over all firm interventions to balance,

Table 7. 15 Balance Summary Recommendations

The complete summary of conceptualisation questions and recommendations is show in the following table.

Conceptualisation Questions		Recommendation
Q6	What business scenarios could impact on ambidexterity?	Events occurring irrespective of ambidexterity to identified via strategy scenario planning analysis. If numerous or severe consider delaying (Brexit) or resolving pre commencement (organisational change).
Q7	What ambidexterity scenarios could impact from its introduction?	Similar to Q6. Only now considering scenarios arising from ambidexterity introduction, notably need to align or change managers, reframe functional roles and ring-fence interventions.

Conceptualisation Questions		Recommendation
Q8	Will path dependency affect exploration and exploitation?	Starting point is an important consideration (Clausen, 2013). Does a competence trap exist (Uotila, 2018), if so do path breaking capabilities exist.
Q9	Where may turbulence occur?	Analyse Lavie <i>et al.</i> construct particularly environmental antecedent and proposed additional strategy antecedent looking for pre and post commencement impact.
Q10	Where may complexity occur?	Analyse Lavie <i>et al.</i> construct particularly management and organisational antecedents. Assess core capability to utilise a contextual mode or emergent initiation charter to simultaneously explore and exploit
Q11	What resources are required and what constraints exist?	Match resources to scenarios identifying complexity and turbulence issues for companywide interventions, part of pre commencement and conceptualisation stages.
Q12	What managerial competencies are required to explore and exploit?	Assessment of managers paradoxically and cognitive dynamic capabilities (Koryak, Lockett and Hayton, 2018). Inadequate or resistance managers may require changing (O'Reilly III and Tushman, 2011)
Q13	How will companywide balance of exploration and exploitation be achieved?	Consider duality of exploration and exploitation and if dynamic capabilities exist to balance conflicts. Evaluate informal contextual mode and owner managers willingness to delegate. Consider contextual vs. separate modes and emergent vs. initiation charter options. Hybrid or blended ambidexterity approach may assist transitional period (Ossenbrink, Hoppmann and Hoffmann, 2019; Foss and Kirkegaard, 2020).

Table 7. 16 Conceptualisation Summary Recommendations

7.6 Implementation - Stage 4

The output of the conceptualisation stage is a detailed implementation plan to commence ambidexterity and manage the interventions. Path dependency considerations having been teased out via the toolkit question answers to determine the organisational context, playing to the individual and firm level processes and competencies (Mom, Bosch Van Den and Volberda, 2007). The timing of the implementation should try to remove complexity and avoid times when turbulence is expected to be at its lowest or can be avoided. This approach addresses the criticism of static ambidexterity analysis by providing a dynamic solution. The implementation stage is akin to the Zimmerman *et al.* charter execution process. It takes the conceptualisation plan and project manages the exploration and exploitation objectives within the firm's strategy.

This requires project management for each intervention with its own dedicated team to lead the plan, communicate and measure outcomes. The actual project management approach is outside of this thesis' remit. Firms will have their own past experience of what works best for them, utilising their competencies and capabilities. The case study implementation recommendations are summarised in the following table.

Implementation	Recommendation
Initiation charter and mode	Mandated charter and separate mode to simplify process limiting impact of turbulence and complexity.
Exploration and exploitation	Project manage either exploration or exploitation only with dedicated resources. Owner managers collectively overseeing all interventions.
Charter execution process	Use toolkit to tease out answers to determine the individual and firm level processes and competencies. Constant awareness of dynamic nature of the implementation process.

Table 7. 17 Implementation Summary Recommendations

7.7 Monitoring - Stage 5

To integrate exploration and exploitation activities a measurement and review process must exist. Despite the rich insights into exploration and exploitation tensions and the different managerial approaches to address them scholars have repeatedly criticised the ambidexterity literature for its rather static accounts (Lavie, Stettner and Tushman, 2010; Zimmermann, Raisch and Birkinshaw, 2015; Raisch and Zimmermann, 2017). The tensions are persistent over time (Schad, Lewis and Raisch, 2016) and recognised in Raisch *et al.* three stage pathway literature. However, no practical guidance is forthcoming.

This thesis proposes an additional monitoring stage to complement the work of Raisch *et al.* framework and add dynamic context. During the three-year study there was a constant need to review, reassess and reset as complexity and turbulence buffeted the journey toward becoming an ambidextrous organisation. This required project management for each intervention which contained pre-determined tasks, timelines and both intangible and financial measurement (Appendix 4 Improvements plan 2 U, 2018). This may seem obvious to a seasoned project manager, but less so for an owner manager firm attempting ambidexterity for the first time. A monitoring process was absent in all interviews.

Three toolkit questions are proposed. Firstly, to define success so practitioners have clarity of what is being monitored, recognise divergence and when outcomes are achieved. Secondly, to understand how the ambidexterity journey is to be measured, acknowledging financial and non-financial factors. Thirdly, to see how ambidexterity outcomes can be separately monitored to ensure the ambidexterity measurement outcomes are mutually exclusive from other business events. The questions are summarised in the table below.

Toolkit Questions - Monitoring - Stage 5	
Q14	How will a successful outcome be defined?
Q15	What are the proposed measurements for ambidextrous interventions?
Q16	How will ambidexterity impact be isolated from other business events?

7.7.1 How will a Successful Outcome be Defined?

The objectives of each intervention are established in the conceptualisation stage. Defining a successful outcome is challenging and subjective dependent on stakeholders' strategic objectives. However, if the organisation is to monitor progress it is important the stakeholders have clear objectives within a set time horizon acknowledging both tangible and intangible factors. This question requires the establishment of a measurable relationship between ambidexterity, performance and outcomes over a fixed time horizon. This will include hard and soft measures. Hard measures should include resource usage, time horizon and financial performance. Soft measures should include proximity to the firm's original balance objectives, management turnover, morale and subjective judgement, such as whether exploration ensured survival! These softer qualitative measures wherever possible should have a quantitative value to provide easily understood KPI's to build their own measurement dashboard system, such as a balanced scorecard model (Kaplan and Norton, 2000). Ultimately the outcome is the judgement of the senior leadership team to define in the pre-commencement and initiation stages what success looks like.

7.7.2 What are the Proposed Measurements?

The interviews highlighted the lack of formal measurement and so the interviewees were often unable to reconcile their strategy or explore-exploit statements with how they actually measured them. Each intervention needs a measurement system to allow a standard performance assessment and comparison of both financial and non-financial measurements to avoid an oversimplified financial analysis. The inclusion into the toolkit measurement questions heeds the literature call for practical decision making tools rather than generalised models (Patel, Messersmith and Lepak, 2013). Qualitative and quantitative objectives will exist, wherever possible numerical values should be applied to qualitative objectives. This qualitative measurement may require management judgement. I.e. "improving process"

may be measured as the number of process improvements completed in each time horizon or “exploring new markets” may be the quantity of completed market research projects. Such an approach is akin to the development of a balanced scorecard which *“allows a firm to express in numbers, something you know about; but when you cannot measure it in numbers, your knowledge is of a meagre and unsatisfactory kind”* (Kaplan and Norton, 1992).

Developing a measurement system is outside the scope of this study. However, three suggestions are made below for a practitioner to consider; financial modelling, timing and intangible factors. Firstly, earlier in this chapter scenario planning was recommended. These should be financially modelled to identify costs and benefits and consider contingencies associated with complexity and turbulence to be monitored and measured during the intervention time horizon. An array of financial measurements already exist for firms, and it is left to the practitioner to choose the relevant measurements.

Secondly, a time horizon with review dates is recommended for each intervention to ensure events do not drift indefinitely. This helps to practically allocate resources, determine a payback period and apply a weighted discount rate for the time value of money. The longer the time horizon the greater, *ceteris paribus*, the uncertainty; which can be reflected in a higher weighted discount interest rate.

Thirdly, the interventions revealed several intangible costs and benefits such as business disruption, culture change, employee morale and knowledge transfer improvements. Some impacts had both a tangible and intangible influence. These were difficult to measure or directly assign to ambidexterity as other factors affected the business, such as competitive rivalry and business and technology integration. Consideration of how to measure intangibles is outside the scope of this research. As noted above one option is a balanced scorecard (Kaplan, 2016), which allows tangibles to be incorporated and is a natural future practical research progression to add to this toolkit.

7.7.3 How will Ambidexterity Impact be Isolated from Other Events?

In all four interventions it was difficult to isolate the costs and benefits directly or indirectly attributable to ambidexterity. The research found some were a direct result, such as increased competitive rivalry, whilst others, such as organisational change, were a combination of ambidexterity and unrelated business events. Others, such as Brexit (cost push inflation), occurred irrespective of ambidexterity. This presented a challenge to calculate the return on investment without defaulting to a degree of judgemental analysis. This thesis recommends practitioners attempt to separate and quantify non ambidexterity impacts to attempt to isolate results to be able to solely measure the ambidexterity impact.

A strategic decision or action is often an “either / or” decision, with no control group and so no status quo outcome comparison. This is a particularly acute problem for owner managed firms that may not have the resources to trial ideas or experiment outside of their existing business model. For example, in the case study it was not possible for the R&D team to compare the market performance of its redeveloped core branded product, it was either stay with existing or replace. This made it hard to isolate and measure the benefit of the R&D intervention.

This research concludes it is important for practitioners to recognise and make stakeholders aware of the inability to always isolate and benchmark outcomes when transforming to an ambidextrous organisation. This emphasises the importance of scenario planning to isolate events, so helping owner managers to identify and understand the limitations, consequences and risks in comparing the ambidexterity journey to a status quo decision. This review process is the responsibility of the owner managers to analyse the data provided by the intervention management teams. Specific milestones should be set within the intervention time horizon to formally review progress to spot any disruption or divergence and understand whether it is caused by ambidexterity pathway or general business occurrences. If these challenges still cannot be resolved, then it may be necessary to review and reset the locus of balance. This was necessary in the case study where financial under performance led to a reduction in the scope of the exploration tasks in order to improve short term financial performance. The recommendations for practitioners to consider from the monitoring and measurement is summarised in the following table.

Monitoring Questions		Recommendation
Q14	How will a successful outcome be defined?	There needs to be core financial metrics in place. However subjective judgement, dependent on stakeholders' strategic objectives, may exist such as social responsibility of employee welfare or removal of competitor. For owners it may be reduction in perceived risk or improved innovation orientation. Each of which are softer more personal values. Each intervention will have its own goal definition.
Q15	What are proposed measurements for ambidextrous interventions?	Three categories: financial modelling; time lines and intangible. The time value of money and a time frame needs to be included. Intangible and tangible goals required. Qualitative information quantified by applying numerical values, even if subjective. Specific measurement proposal is outside of this thesis' scope. However the use of Balanced Score Card model is an option.
Q16	How will ambidexterity impact be isolated from other business events?	Achieved by successfully answering questions 6 and 7 with scenario planning to identify differences, some subjective judgement. Each intervention can then be measured with impact separated per pre commencement criteria. Formalised progress reviews.

Table 7. 19 Monitoring Summary Recommendations

Chapter 8 Summary of Findings

8.1 Introduction

This final chapter is a summary of the thesis findings and recommendations for the practitioner to digest. It considers the limitations and boundaries, proposed general recommendations and those specific to each of the three frameworks. Even after almost half a century of research ambidexterity is still a relatively unknown concept for owner managers and so any attempt needs to first be accompanied by extensive understanding and communication to the future actors at all levels of the business. My research cannot guarantee a successful journey to becoming an ambidextrous organisation or optimisation of exploration and exploitation balance. It will always contain business risk, be depended on the appropriateness of a strategy and the ability to execute it. If the wrong projects are chosen to explore then no matter how well a firm acts ambidextrously it will not improve business performance. What it does provide is a toolkit template which can be tailored to incorporate a firm's uniqueness. It presents the practitioner with a tested practical methodology grounded in extant theoretical research so de-risking the ambidextrous journey and improving the probability of success. The boundaries and findings are summarised in the following two sections establishing the scope of this thesis' research contribution whilst acknowledging its limitations.

As seen in the discussions of findings in Chapter 6, after implementing two contextual and two structural mode interventions the two contextual interventions had to be revised to a structural mode solution with the pathway being reset via a mandated top down approach to give clearer objectives, improve communication, reduce complexity and cope with a turbulent environment. The eventual structure utilised to operate as an ambidextrous organisation was one where separate business units existed each with a mandated charter from myself, as the CEO, either exploiting or exploring in **a hybrid contextual mode**. This was characterised by me "helicoptering" over the business with the occasional need to perform temporary short term in and out "bungee jumping" management. This is the

structure recommended as a result of the case study and interview research. This is shown in the following schematic.

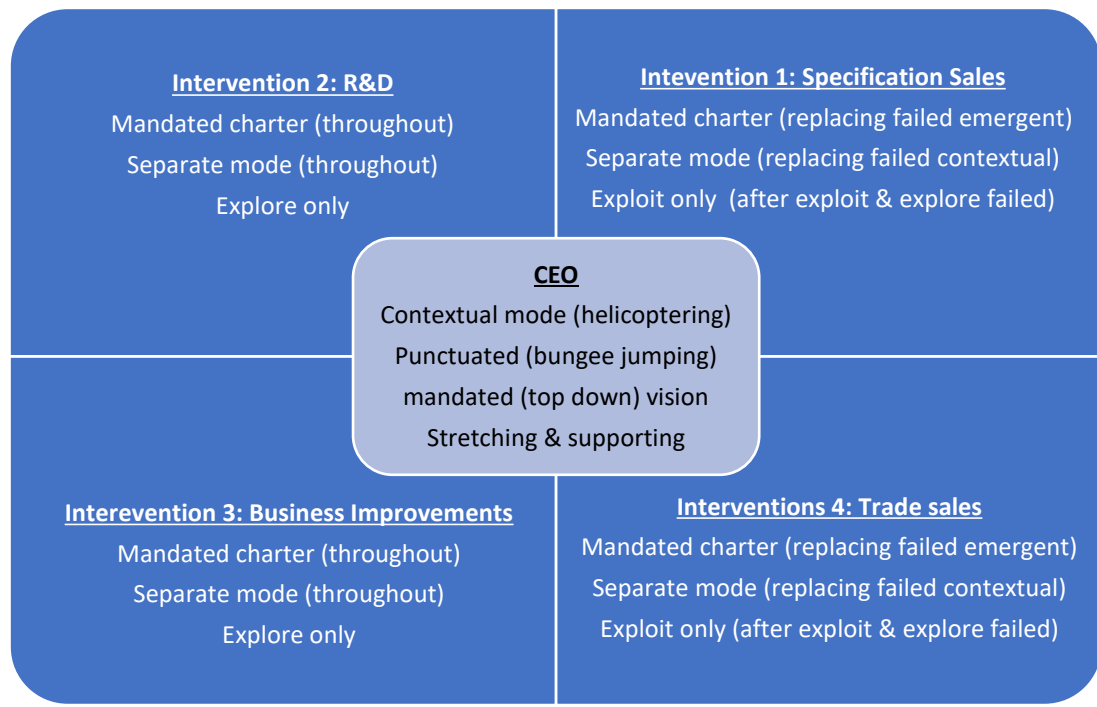


Table 8. 1 Hybrid Companywide Organisational Mode

8.2 Boundary Conditions

This research has focused on owner managed businesses that extant research confirms as exhibiting their own unique characteristics and culture. They are not agents of shareholders, but risk owning stakeholders whose personal and business affairs are intertwined (Konig, Kammerlander and Enders, 2013; Bammens, Notelaers and Gils Van, 2014). They have a less formalised structure which this research refers to as an informal contextual mode. They do not have the same access to funds, are more risk adverse and more resource constrained relying on a small cohort of managers unlike larger organisations with a more heterogenous

cognitive management team. This presents the first boundary condition of this thesis being relevant to owner managed businesses, rather than larger public companies.

Secondly, the initiation requires an alignment of strategy to ambidexterity to optimise the outcomes. As the interview data revealed some owner managers' strategy was one of a defender or follower (Miles and Snow, 2003). In such circumstances the benefits of becoming an ambidextrous organisation are potentially diminished or inappropriate. Therefore, this thesis proposes a defender or follower strategy as a boundary condition.

The Third boundary condition was prompted by the case study firm outgrowing the owner managers' bandwidth. This made it relevant as a new approach was required to enable it to continue to grow. If business is not outgrowing its existing organisational structure, then commencing a journey towards becoming an ambidextrous organisation may be inappropriate or unnecessary.

Fourthly, a firm commencing ambidexterity must ensure it can afford the potential trade-offs from a decline in short term performance as seen in the case study and interviews. There is a step change requiring reallocation of financial and human resources. The people aspect is relevant as seen in the case study, because it required departures, recruitment and learning of new skills, such as paradoxical problem solving and path breaking capabilities. A culture change is required to be accepted by the management team. These changes are best summed up by the Machiavelli quote *"who innovates will have for enemies all those who are well off under the old order of things, and only lukewarm supporters in those who might be better off under the new"*.

Fifthly, the presence of turbulence and complexity significantly distracted the case study firm's progress and negatively impacted on trade-offs. There is no simple line, no stick in the sand point, beyond which this thesis can say turbulence and complexity is too great, too risky, or causing too much uncertain beyond which a firm may not benefit from becoming an ambidextrous organisation. It confirmed the importance of scenario planning. However, it does represent a boundary condition that there needs to be a tipping point, which even if nebulous is subjective and unique to each firm's impact assessment.

Sixthly experience, this research focused on the first attempt of a firm to trying to transition to ambidexterity. Hence, the constant theme of wherever possible to try to simplify process, by using a mandated charter with separate modes exploring or exploiting only. This acts as a stepping stone to delegate to managers and simplify the transition process. Whilst beyond the scope of this research it may be after being part of a journey to become an ambidextrous organisation the now more paradoxically experienced, heterogeneous, battle hardened management team may be able to create their own emergent charter and operate contextually to simultaneously deliver exploration and exploitation balance.

Finally, this toolkit is recommended only when considering an exploration and exploitation pathway to enable companywide organisational ambidexterity. This is a boundary condition as the scope of ambidexterity has expanded significantly with over 6000 Web of Science and 20,000 Google Scholar citations (Wilden, Hohberger and Devinney, 2018). This toolkit is not appropriate as a toolkit for all ambidexterity definitions.

Boundary Condition	Recommendation
Ownership	Relevant to owner managed businesses, not larger public companies.
Strategy	Defender or follower strategy potentially diminishes benefit or is inappropriate.
Resources	Ensure it can afford the potential decline in short term performance. Resource requirements need to be reviewed pre commencement to ensure sufficient in all scenarios.
Turbulence and complexity	Have a negative impact on pathway, increasing trade-offs. Consideration of scenarios where a tipping point may exist that prevents commencement.
Experience and first attempt	If inexperienced, cognitively weak management in a turbulent and complex environment, then mandated charter in a separate mode is more appropriate to simplify the pathway and reduce disruption.
Ambidexterity vision	Toolkit templated is designed to be relevant only to firms wishing to become an ambidextrous organisation.

Table 8. 2 Boundary Conditions

8.3 Key Findings and Recommendations

To avoid repetition but allow the reader to obtain a consolidated view of the findings and recommendations the table below presents a concise analysis from the previous chapters. If further detail is required, it can be found within this thesis mainly in Chapters 6 & 7.

Category	Findings and Recommendation
Frameworks	The combination of the three frameworks for practical implementation of ambidexterity is recommended.
Approach to ambidexterity	Undertake companywide interventions with a mandated charter, separate intervention modes supported by a blend of owner managed contextual, punctuated and network modes with business units undertaking either exploration or exploitation, but not both.
Pathway	No one size fits all firms. The toolkit questions allows the tailoring of the frameworks to give a bespoke solution
Case study	It has produced specific practical recommendations to help implementation listed in appendix 3. It offers a tested successful example of a first attempt at ambidexterity.
Interviews	Triangulation to case study has provided additional support to findings reducing single study criticism. Although a small sample, there was significant data collection resulting in earlier than expected data saturation.
Repetition	Frequency of repetition of key findings recorded in this thesis whilst hard on the reader gives multi source evidence not one off occurrences of what worked, impacted and what to avoid. Notably turbulence, complexity, pre commencement scenarios and the importance of dynamic monitoring and measurement.

Category	Findings and Recommendation
Turbulence and complexity	These added practical challenges and should try to be avoided or resolved before attempting ambidexterity to reduce disruption.
Pathway stages	Two additional stages are recommended to complement the Raisch <i>et al.</i> 3 stages; a pre-commencement stage and a final monitoring stage.
Pathway stage 1, Pre commencement	Emphasises need for ambidexterity aligning to strategic orientation complemented by scenario planning to identify turbulence and complexity.
Pathway stage 5	Ensures dynamism is considered and measurement undertaken to remain agile and adaptable throughout time horizon. It emphasises the need for tangible and intangible measurement.
Initiation theory	Path dependency and uniqueness of owner managed businesses recognised. This research adds an informal contextual mode to Zimmermann <i>et al.</i> theoretical framework. This starting mode provides the practitioner with a defined starting point from which to plan the ambidexterity pathway.
Pre and post commencement	Significant changes occurred post intervention some of which could have benefitted from scenario planning and are now toolkit questions. Highlighted Lavie <i>et al.</i> construct antecedents should not be assumed to stay constant or be a reliable predictor of the future.
Strategy as an antecedent	An additional antecedent of strategy is proposed, supported by recent post my thesis research (Posch and Garaus, 2020). Also suggesting ambidexterity may emerge rather than from a planned strategy (Sinha, 2019).
Management antecedent	Positive past experience and performance not relevant for future new ventures and new skills required. A firm age was of little relevance and really identified in case study or interviews.
Organisational antecedent	Culture is important to get buy in along with a willingness to change it. Impacted by organisation change such as formalisation and move from a “family business” informal approach.

Category	Findings and Recommendation
Organisational structure	Informality, tacit knowledge with lack of process hindered progress as new people processes and functions were slowed. Need to be willing to move out people resistant to change.
Organisational absorption capacity	Managers need to have paradoxical and problem solving capabilities, but often missing. Lots of years' experience of limited use if in only one functional area. New managers required to complement and expand core capabilities.
Environmental antecedent	Shocks caused turbulence which strategy scenario analysis may reduce. Competitive rivalry and dynamism also had negative impact on managers' scope of work and balance, causing focus on short term issues at the expense of longer term exploration goals.
Resources	Importance confirmed for owner managed firms who needed people quality not quantity. Management heterogeneity absent and only improved by recruitment. Unanticipated turbulence and complexity added financial pressure.
Mode	Separate rather than contextual mode successful in interventions simplifying balance. Dynamism resulted in a hybrid of modes including networks used to offset lack of resources. Post my research similar published findings on blended ambidexterity (Foss and Kirkegaard, 2020) and hybrid modes (Ossenbrink, Hoppmann and Hoffmann, 2019)
Balancing	Over the time horizon it was dynamic with no one locus of balance, instead requiring agility and adaptability to readjust exploitation and exploration due to complexity and turbulence buffeting from internal and external sources. Only resolved by simplification of interventions to exploit or explore, not both.

Category	Findings and Recommendation
Trade-offs	Constant reassessment of exploit and explore balance due to financial challenges. Also managers defaulting to exploitation when commercial pressure arose. Short term performance was sacrificed more than anticipated. Difficult to set time horizons due to unanticipated events and learning for first time by trial and error.

Table 8. 3 Summary of Findings

The practical experience for each of the above can be found and examined in more detail in the interview and case study findings Chapters 4 and 5, respectively. This research is now ready to be tested by practitioners who will no doubt bring other findings to refine and enhance the toolkit questions and allow the development of a repository of practical experiences. I have already embarked on such a next stage since completing this thesis with a second practical application of the toolkit for another owner managed business attempting ambidexterity for the first time. This will help to strengthen all parts of the toolkit, but particularly the identification of a range of measurements to enhance the new monitoring stage 5 in the ambidexterity pathway which was outside the scope of this research.

APPENDICES

Appendix 1- NVivo analysis of case study documents

Appendix 2- NVivo analysis of interview transcripts

Appendix 3- Practical findings

Appendix 4- Table of internal confidential documents

Appendix 5- Table of interviews

Appendix 6- Semi structured independent interview questionnaire

Appendix 7- NVivo coding pathway

Appendix 8- NVivo coding structure

APPENDIX 1- NVivo Analysis of Case Study Documents

	Specification Sales division		R&D dept		Business Improvement		Trade Sales division		Total	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
ANTECEDENT										
<i>Management</i>										
Past Experience - negative	8	n/a	4	n/a	4	n/a	0	n/a	16	n/a
Past Experience -positive	7	n/a	0	n/a	0	n/a	3	n/a	10	n/a
Past performance- negative	3	n/a	9	n/a	0	n/a	0	n/a	12	n/a
Past performance- positive	9	n/a	0	n/a	3	n/a	3	n/a	15	n/a
Risk appetite – High	7	0	0	1	2	4	0	0	9	5
Risk appetite – Low	0	0	0	1	0	0	0	0	0	1
<i>Environment</i>										
Appropriability -Strong	11	4	0	0	0	0	0	1	11	5
Appropriability - Weak	0	0	0	0	2	0	1	0	3	0
Competitive Intensity – high	0	14	4	3	0	8	0	9	4	34
Competitive Intensity – Low	1	2	0	0	2	0	0	0	3	2
Dynamism- High	0	1	3	0	0	2	1	4	2	7
Dynamism- Low	3	3	1	0	3	0	0	0	7	3
Shock – Endogenous	n/a	0	n/a	0	n/a	9	n/a	4	n/a	13
Shock - Exogenous	n/a	11	n/a	1	n/a	0	n/a	1	n/a	13
<i>Organisational</i>										
Absorptive -Formal	0	0	0	9	0	8	0	8	0	23
Absorptive -Tacit	5	8	8	0	11	0	6	10	30	18
Age - old	0	0	0	0	0	0	0	0	0	0
Age- young	0	5	0	0	1	0	0	0	1	5
Culture - Strong	1	0	0	2	1	0	2	0	4	2
Culture - Weak	6	11	2	0	0	4	0	12	8	27

	Specification Sales division		R&D dept		Business Improvement		Trade Sales division		Total	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Slack – No	2	3	1	2	0	7	0	5	3	17
Slack – Yes	5	0	0	4	4	0	4	1	13	5
Structure - Mechanistic	0	5	0	6	1	7	0	11	1	29
Structure - Organic	7	0	2	0	9	0	12	0	30	0
BALANCE										
Balanced	0	0	0	6	0	4	0	0	0	10
Balancing	0	6	0	6	0	12	0	5	0	29
Not balanced	0	12	6	0	6	0	3	9	15	21
Not recognised	0	1	1	0	1	0	2	1	4	3
MODE										
alliances	0	0	0	3	0	0	1	1	1	4
formal contextual	1	8	0	0	1	0	0	0	2	8
informal contextual	5	3	2	0	4	0	4	0	15	3
Structural	0	5	0	10	0	10	0	11	0	36
Temporal	0	3	0	0	0	0	0	2	0	5
RESOURCES										
Financial - available	4	0	0	4	3	0	1	0	8	4
Financial - limited	0	7	1	0	0	4	0	6	1	17
Other -available	0	1	0	0	0	3	1	0	1	4
Other – limited	0	0	0	0	0	0	0	2	0	2
People – available	3	0	0	5	1	9	7	2	11	16
People – limited	1	14	0	0	0	1	0	12	1	27
TRADE OFFS										
Exploitation increase	2	13	0	4	1	7	0	18	3	42
Exploration increase	1	1	0	5	0	10	1	4	3	20
Performance -Decline	0	9	1	1	0	10	1	13	2	33
Performance -improved	0	0	0	1	1	0	0	0	1	1
Resources - available	0	0	0	3	2	6	2	6	4	15
Resources - unavailable	0	8	2	0	0	1	0	5	2	14
Time horizon - long	0	0	2	4	0	16	2	11	4	31

	Specification Sales division		R&D dept		Business Improvement		Trade Sales division		Total	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Time horizon - short	8	9	0	1	4	0	0	4	12	14

APPENDIX 2- NVivo Analysis of Interview Transcripts

CATEGORY	TOTAL
ANTECEDENT	
<i>Management</i>	
Past Experience -negative	1
Past Experience -positive	12
Past performance-negative	2
Past performance-positive	4
Risk appetite – High	11
Risk appetite – Low	14
<i>Environment</i>	
Appropriability -Strong	0
Appropriability - Weak	6
Competitive Intensity – high	18
Competitive Intensity – Low	1
Dynamism- High	10
Dynamism- Low	1
Shock – Endogenous	7
Shock - Exogenous	
<i>Organisational</i>	
Absorptive -Formal	3
Absorptive -Tacit	20
Age - old	5
Age- young	0
Culture - Strong	22
Culture - Weak	0
Slack – No	13
Slack – Yes	0
Structure - Mechanistic	3
Structure - Organic	13
BALANCE	
Balanced	0
Balancing	22

CATEGORY	TOTAL
Not balanced	9
Not recognised	0
INITIATION	
Emergent	0
Mandated	12
MEASUREMENT	
Financial	10
Opinion	3
MODE	
alliances	13
formal contextual	3
informal contextual	9
Structural	4
Temporal	0
FORMAL PATHWAY	1
RESOURCES	
Financial - available	0
Financial - limited	32
Other -available	0
Other – limited	2
People – available	3
People – limited	8
TRADE OFFS	
Exploitation increase	2
Exploration increase	21
Performance -Decline	4
Performance -improved	0
Time horizon - long	12
Time horizon - short	8

APPENDIX 3- Practical Findings and Conclusions

Framework Category	Evidence	Conclusions
Path dependency.	Interviews and case study revealed common informal owner led top down decision-making modus operandi. Managers reacted to ad hoc requests.	Cultural change greater for owners dispersing power under emergent than mandated. Practitioner needs to consider if a step too far.
Scenario Identification.	Unexpected changes in status quo frequently occurred. Insufficient consideration given to possible new scenarios. Resulted in new situations and revisions to plans.	Pre-commencement assess probability of change in construct categories. Perform a detailed review of all categories in the three frameworks.
Scenario planning “what ifs”.	Failure to measure various scenarios impacted on resources, time and outcomes.	Pre-initiation analysis of potential outcomes to improve risk management and reduce likelihood of revisions.
ANTECEDENTS		
Management-composition.	Reluctance or cognitive inability to change and problem solve. Managers replaced.	Recognise importance and assess middle managers’ cognitive ability. Recruit to fill cognitive and skills gaps.
Management-past experience.	Existing managers experience of limited applicability. Past experience useful for exploit tasks.	Exploration may need supplementing with externally recruited managers.
Management-past performance.	Past performance no indication of future. Increased turbulence damaged performance.	Consider attempt in less turbulent period or recruit people with experience of future tasks or simplify tasks.
Organisational-culture.	Acquisition, changes, new recruits and ambidexterity process diluted culture. Impact underestimated.	Culture required change. Need to gain a priori acknowledgement and managers’ acceptance of need to change and resolve issues.
Organisational-structure.	Informal organic structure had to be replaced with formal mechanistic structure.	Reduce complexity by making changes a priori. Formal mechanical structure to aid process, communication and knowledge transfer.

Framework Category	Evidence	Conclusions
Organisational-Absorptive capacity.	Reliance on tacit knowledge with no documentation. New departments initially set up with libraries performed better.	Identify where tacit knowledge exists and may be disrupted during the process (people departures / changes). Introduce knowledge library pre-commencement.
Environmental-shocks.	Several shocks disrupted events, damaged performance, required additional resources and extended time horizon.	Attempt to identify and avoid potential shocks. Ambidexterity itself a shock. Where possible minimise all sources of turbulence.
Environmental-competitive rivalry.	Increased during time horizon. Distracted contextual modes to short term exploitation.	If dynamic turbulent environment, consider delaying commencement until calmer time horizon expected. Separate exploitation to maintain short term performance.
Environmental-dynamism.	Dynamism increased turbulence. In contextual mode exploration and exploitation interventions failed to achieve balance.	Plan required to offset turbulence caused by dynamism. Consider separating exploration to ensure it is undertaken without short term distractions.
Environmental-appropriability Regime.	Increased appropriability as both competitors and case study firm attempted to manage shocks. Turbulence grew.	If appropriability regime increases, ensure adequate resources. Probability seen to increase in turbulent highly competitive market.
RESOURCES		
Resource-planning.	Originally planned resource requirements incorrect due to complexity and turbulence impact.	Identification of complexity and turbulence will help improve planning. Increase in either likely to increase resource needs.
Resource-allocation.	Exploitation constantly took resources from Exploration when jointly undertaken. Management prioritised short term usually exploitation tasks due to commercial pressure.	Where interventions incur greater external commercial influences, i.e. sales and operations usually associated with exploitation consider separation of exploration and exploitation to maintain planned resource allocation. Introduce measurement and control process to achieve planned allocations.

Framework Category	Evidence	Conclusions
Resources-people.	A sufficient quantity always existed. Skills sets missing to balance new tasks and processes. Teams struggled under pressure to adapt to change.	Consider the skills and cognitive abilities required for ambidexterity tasks to problem solve and project manage change.
MODE		
Mode- selection logic.	Rational “customer focused” commercial decisions made so as “one voice” to customer via contextual mode failed to achieve goal. Needed constant trade-offs and additional resources. All separation modes successful. Both contextual modes changed to separate.	Recommend separate mode to remove complexity. By only explore or exploit remit it simplifies managers tasks. Reduced need to balance. Aided resource allocation. Required fewer trade-offs. Improved communication.
Mode- Contextual vs separation.	Both contextual modes failed due to inability to balance with resources diverted to short term exploitation tasks. Both original separation modes successful as were both contextual modes when changed to separation.	Separation mode with only exploring, or exploiting is recommended when inexperienced managers with complexity or turbulence. It simplifies balancing resource allocation and trade-offs. If contextual mode undertaken ensure cognitively strong teams.
BALANCE		
Balance.	Balance not achieved in contextual mode. Achieved in all separation modes. Short term shocks impacted. CEO “helicopter” oversight enabled overall companywide balance.	Explore and exploit separation recommended with owner managers over seeing companywide balance. So, removing need for balancing by managers.
TRADE-OFFS		
Trade-offs- Explore vs Exploit.	Both attempts to jointly explore and exploit failed. All 4 succeeded when only one attempted. Constant exploration vs exploitation trade off caused by commercial short-term events.	Recommend either explore or exploit, not both to Improve completion probability. Reduces demands on managers, especially when developing emergent charter with 1 st ambidexterity attempt. Limits constant buffeting by complexity and turbulence.

Framework Category	Evidence	Conclusions
Trade-offs- Time horizon.	Delay when both exploiting and exploring. Completed on time when only one undertaken. Increased resource requirements limited exploration undertaken.	Consider additional cognitive experienced people and additional resources to increase management bandwidth, if both explore and exploit.
Trade-offs- Short vs long term.	Organisational change and market shocks caused exploitation to be prioritised. Explore only R&D was reduced due to drainage of resources reducing no. of projects.	Recommend separation mode if expect short term commercial issues to arise during interventions. Avoids distraction from exploration tasks.
INITIATION		
Initiation- Pre-initiation.	Path dependency revealed owner managers disproportionate control giving managers instructions rather than independence. Ad hoc informal process. Interviews confirmed same findings.	Recommend pre-initiation analysis to establish decision making process to identify if path dependency created an “informal contextual mode”. If exists, consider mandated charter, so smaller organisational change to lighten workload of managers used to taking instructions.
Charter- Emergent or mandated.	Managers slow to develop an emergent charter process as unaccustomed to leading strategy, misdiagnosis occurred. Mandated charter process was successful. Two emergent charters successfully changed to mandated.	Consider whether inexperienced managers can develop an emergent charter, especially in complex turbulent environment. Recommend a mandated charter to simplify ambidexterity process to reduce managers workload to allow concentration on core tasks.
PATHWAY		
Pathway- Pre-Initiation	All interviews indicated strategy not aligned to ambidexterity. It cannot be assumed as appropriate.	Research advocates an additional pre-initiation pathway stage to consider if strategic objectives consistent with ambidexterity.

Framework Category	Evidence	Conclusions
Pathway-Measurement and monitoring.	Several pathway revisions necessary. Required project management and measurement systems to support decisions. Difficult to Isolated and measure ambidexterity interventions independently of other normal business events.	Firms should attempt to build project monitoring and measurement system to separately identify and analyse specific ambidexterity vs other normal business events.
Pathway-Intangible impact.	Holistic, all-encompassing financial only ambidexterity measurement system not possible, subjective judgement involved on intangible outcomes.	Intangible costs and benefits difficult to measure but need to be considered. Recommend combination of quantitative and qualitative measurements, such as balanced scorecard.

APPENDIX 4- Table of Internal Confidential Documents

- Appendix 4 BI agenda 3 A (2019) 'BI agenda 12_16'.
- Appendix 4 BI issues 3 T (2019) 'BI Master Issues List'.
- Appendix 4 BI manager 3 Y (2017) 'BI manager appoinment'.
- Appendix 4 BI minutes 3 U (2016) 'BI action meeting minutes'.
- Appendix 4 BI prioritisation 3 AJ (2019) 'BI prioritisation'.
- Appendix 4 BI prioritisation 3 F (2019) 'BI team Prioritisation'.
- Appendix 4 BI review 4 ZG (2019) 'BI review actions 17_2_18'.
- Appendix 4 Business improvments review 1 AD (2019) 'Business improvements revisited'.
- Appendix 4 Closures 3 G (2019) 'Closure and relocation tracker'.
- Appendix 4 Commerical teams 1 AG (2019) 'Combined Commercial Teams Structure'.
- Appendix 4 Communication departures 1 ZR (2019) 'Communication and departures'.
- Appendix 4 Communications 4 I (2019) 'communication methodology'.
- Appendix 4 consultancy resources 2 L (2018) 'Consultancy days proposal'.
- Appendix 4 Cross functional ambidexterity plan 4 K (2018) 'Development plan for Cross functional ambidexteirty'.
- Appendix 4 Customer analysis 1 U (2019) 'specific actions anlaysis of customers 6_17'.
- Appendix 4 Customer retention 1 W (2018) 'Specificaion short term customer retention'.
- Appendix 4 Data analytics 4 ZB (2019) 'Additional Data analytics resources'.
- appendix 4 Defection to competitor and S, 1 (2018) 'Defection to competitor'.
- Appendix 4 Deloitte strategy 3 P (2017) 'Integration Deloitte Blueprint'.
- Appendix 4 Departures 1 AH (2018) 'Communication and departures'.
- Appendix 4 Development manager 2 V (2017) 'Development manager departure'.
- Appendix 4 Digital customer model 4 ZG (2019) 'Digital customer model development', pp. 1–9. doi: .1037//0033-2909.126.1.78.
- Appendix 4 Employee defection 4 N (2019) 'Employee defection to competitor'.
- Appendix 4 Employee turnover 4 ZW (2019) 'Employee turnover pre and post intervention'.
- Appendix 4 Enforced specification 1 D (2017) 'Manufacturer trying to enforce specification'.
- Appendix 4 Engineeing skills 2 B (2017) 'Engineering skills 2017-18_xlsx'.
- Appendix 4 EU leave strategy 1 AI (2017) 'EU post vote leave strategy'.
- Appendix 4 Exploitation plan 1 ZK (2019) 'Exploitation plan'.
- Appendix 4 exploration board plan 1 AE (2018) 'Exploitation plan for Board'.
- Appendix 4 Implementation paper 4 R (2018) 'Implementation v2'.
- Appendix 4 Implementation plan 3 N (2018) 'implementation To Do List'.

Appendix 4 Improvements plan 2 U (2018) 'QTR 1 Improvements plan'.

Appendix 4 Integration Board review 3 Q (2018) 'Integration Board review'.

Appendix 4 Integration review 4 ZE (2018) 'Integration 12 month presentation'.

Appendix 4 Internal 1 Y Competitors (2019) 'Internal 1 Y Competitors by region & type'.

Appendix 4 Internal communication 1 L (2019) 'Internal communication process'.

Appendix 4 Intervention exploitation 1 ZJ (2019) 'Focus on exploitation refocus mid intervention'.

Appendix 4 Legal dispute 1 ZA (2019) 'Legal dispute over product supply'.

Appendix 4 legal dispute final 1 ZB (2019) 'Legal dispute final negotiation'.

Appendix 4 Lost sales 4 B (2018) 'Lost sales analysis 6 month to 1_2018'.

Appendix 4 Manager departures 2 I (2019) 'Senior manager departure'.

Appendix 4 Manufacturing Board meeting 2 H (2017) 'Board meeting Manufacturing issues issues'.

Appendix 4 Manufacturing enforcing specificaiton 1 D (2019) 'Manufacturer trying to enforce specication'.

Appendix 4 Manufacturing plan 2 G (2017) 'pre event short term manufacturing plan'.

Appendix 4 Manufacturing plan 2 W (2019) 'manufacturing Long Term Plans'.

Appendix 4 Manufacturing strategy 2 A (2018) 'Manufacturing Strategy'.

Appendix 4 Margin erosion 4 G (2019) 'Horizon margin erosion'.

Appendix 4 Market positioning 4 ZF (2018) 'Market postioning info pack'.

Appendix 4 Market strategy Board review 2 K (2017) 'Strategic view of market Board paper'.

Appendix 4 New appointment 3 V (2019) 'Role for new BI ambidexgtrous appointment'.

Appendix 4 New technical team 2 X (2019) 'New techncial team'.

Appendix 4 Operational issues 4 T (2017) 'Operational issues affecting sales'.

Appendix 4 Organisation chart 2 T (2019) 'Organisational chart'.

Appendix 4 Organisational structure 1 ZP (2019) 'Org structure Presentation'.

Appendix 4 Outlet revitalisation 4 V (2019) 'New outlet Openings or revitalise Strategy 21_6_19'.

Appendix 4 People departure 1 Q (2018) 'People departure'.

Appendix 4 Planning 3 AA (2019) 'planning'.

Appendix 4 Pre acquisition issues 1A (2017) 'Board meeting pre acquisition issues'.

Appendix 4 Processing manual 3 W (2019) 'Order processing manual'.

Appendix 4 R&D planning 2 F (2019) 'pre event planning of new R&D 2018'.

Appendix 4 Reorganisation plan V2 3 D (2019) 'Business reorganiation plan v2 Final'.

Appendix 4 Reporting timetable 4 C (2018) 'RSM reporting template'.

Appendix 4 Revenue protection 4 L (2017) 'Revenue Protection 2017'.

Appendix 4 Sales decline meeting 4 P (2018) 'sales meeting reasons for decline'.

Appendix 4 Sales director departure 4 ZC (2019) 'sales director departure'.

Appendix 4 Sales exploration 4 U (2019) 'Salesman new roles for exploitation'.

Appendix 4 Sales losses 1 AF (2017) 'More loss from new build team'.

Appendix 4 Sales organisational structure 4 X (2018) 'Sales organisation structure'.

Appendix 4 Sales reactivation 4 F (2019) 'sales reactivation plan for existing customers'.

Appendix 4 sales reorganisation 1 K (2019) 'Reorganiation of sales structure and customers 01'.

Appendix 4 Sales reorganisation 1 K (2019) 'Reorganiation of sales structure'.

Appendix 4 Sales road map 4 Z (2019) 'sales road map'.

Appendix 4 Sales structure 4 H (2017) 'sales structure day 1'.

Appendix 4 Sales survery 4 J (2019) 'Reasons for sales decline survey'.

Appendix 4 Sales territory 4 O (2018) 'Territory ownership Scotland', (March), p. 2018.

Appendix 4 Six sigma 2 ZP (2019) 'six sigma learning structure'.

Appendix 4 Specification business unit 1 R (2019) 'Review of new specification business unit'.

Appendix 4 Specification market 1 AA (2019) 'Sales update on specification market'.

Appendix 4 Specification sales lost 1 I (2017) 'Specificaiton busienss lost on transition'.

Appendix 4 Specification teams 1 ZI (2017) 'People departure from specification team'.

Appendix 4 Strategy presentation 2 P (2018) 'Strategy presentation'.

Appendix 4 Supplier cessation 4 S (2018) 'Supplier cessation'.

Appendix 4 Supplier contracts 1 AB (2016) 'Supplier Contract Support'.

Appendix 4 supplier stock 1 X (2018) 'Supplier stopping supply'.

Appendix 4 Supplier strategy 1 ZZ (2017) 'Suppliers going forward'.

Appendix 4 Supplier tender 1 E (2019) 'Major supplier tender proposal'.

Appendix 4 Surveyor appointment 3 R (2019) 'surveyor appointment CV', pp. 1–35.

Appendix 4 What success looks like 3 K (2017) 'Acquisiton Integration 12 month success look like'.

Appendix 4 When growth sales 2 J (2018) 'When growth stalls board paper'.

APPENDIX 5- Table of Interviews

Appendix 5 Interview A (2020) 'interview transcript Code HB'.

Appendix 5 Interview B (2018) 'interview transcript Code B'.

Appendix 5 Interview C (2019) 'interview transcript Code HS'.

Appendix 5 Interview D (2019) 'interview transcript Code D'.

Appendix 5 Interview E (2018) 'interview transcript Code M'.

Appendix 5 Interview F (2020) 'interview transcript code F'.

Appendix 5 Interview G (2019) 'Interview transcript Code K'.

Appendix 5 Interview H (2018) 'interview transcript Code P'.

APPENDIX 6- Semi Structured Independent Interview Questionnaire

Objective of questions

- A. Understanding the business and its boundaries bias segments for future coding
- B. Indirect identification of examples of ambidexterity
- C. Indirect questioning to find exploration (*exploration questioning*)
- D. Indirect questioning of examples of exploitation (*exploitation questioning*)
- E. Search for how business achieved “balance” (*how did you operate ambidextrously*)
- F. Look for trade offs
- G. Look for modes of balance
- H. Searching for antecedents
- I. Search for moderators
- J. If interviewees list any framework antecedents, modes. balance and trade offs

Introduction to Interviewee

- Explain that this is research for part of DBA at WBS by myself
- Ensure ethics documents are agreed and signed
- Objective is to help contribute to management theory by examining real life practical approaches used by SME
- Specifically, the interview is trying to understand how SME operate their business and if there are common approaches that can be identified via understanding how senior managers / owners operate their business.

Questions

UNDERSTANDING THE BUSINESS AND ITS BOUNDARIES BIAS SEGMENTS FOR FUTURE CODING

1. Can you please give a short overview of your business?
 - 1.1. size
 - 1.2. markets served
 - 1.3. type (manufacturing / distribution / / service),
 - 1.4. ownership,
 - 1.5. local national, labour capital technology intensive
2. How long has the business been operating?
3. How long have you and the senior management team been in involved in the business?
4. Can you give a brief history of the business?
5. How has the business managed to operate in the present and planned?

- 6 I would like to focus on two areas of your business the products / operations and customers/markets as these are core to any business “having a product and being able to sell it”

IDENTIFICATION OF EXAMPLES OF AMBIDEXTERITY (using two domains product and markets)

- 7 How do you manage products operations today and ensure you have products for the future?
- 8 How do you manage existing customers and development new customer segments or new markets?
- 9 How do you balance these competing demands of operations vs sales and short-term vs long term all of which take up time and resources?

INDIRECT QUESTIONING TO FIND EXPLORATION (*exploration questioning*)

- 10 Can you give examples of how you organised your business to develop either future products/operations or new customers / markets?
 - 10.1. If so how? **JUST** Future products **OR JUST** market development **OR BOTH?**
 - 10.2. What happened with day to day products / ops and customers / markets?
 - 10.3. Did you have to change anything in your business?
- 11 how do you maintain focus on the present?
- 12 ***This next question may sound confusing*** -but I am trying to understand how you balance your efforts either by signal focus, multi focus, or? Because there are limited resources in any business.
- 13 When you were developing the future of, say products, how did you allocate resources to future customers/markets, present products and present customers/markets? **BALANCE!!**

INDIRECT QUESTIONING OF EXAMPLES OF EXPLOITATION (*exploitation questioning*)

- 14 Now the REVERSE!! Can you give examples of how you organised your business to focus on present products / operations and / or customers / markets?
 - 14.1. If so how? **JUST** current products **OR JUST** current customers/markets **OR BOTH?**
 - 14.2. What happened to future products / ops and customers / markets?
 - 14.3. Did you have to change anything in your business?
- 15 How did you maintain focus on the future?
- 16 ***This next question is again the confusing one!!*** But again, I am trying to understand how you balance your efforts either by signal focus, multi focus, or? Because there are limited resources in any business.
- 17 When you were focussed on the present of, say products, how did you allocate resources to present customers / markets or future products and future customers / markets **BALANCE!!**

SEARCHING FOR HOW BUSINESS ACHIEVED “BALANCE” (*how did you operate ambidextrously*)

- 18 How Did you balance these conflicting events?
 - 18.1. How did you keep focus whilst changes occurring?
 - 18.2. Did you have a methodology, template, standard approach?
 - 18.3. What was criteria in considering actions for core business or future opportunities?
- 19 Could you give examples of the tensions and contradictions you faced in trying to manage the challenge of short term focus and long-term development.

LOOKING FOR TRADE OFFS

- 20 How did you allocate the resources you had available?
 - 20.1. finance
 - 20.2. people (TMT leaders, functional heads, workforce)
 - 20.3. time allocation
 - 20.4. stability vs future
 - 20.5. maintaining core vs looking to the future

LOOKING FOR MODES OF BALANCE

- 21 How did this effect your people in trying to balance present and future goals?
 - 21.1. Change of management or style of management or number or roles?
 - 21.2. Focus on key actions / tasks / areas of business
 - 21.3. did you have to change your organisation structure / reporting lines
 - 21.4. Reporting – frequency, KPI’s, financial focus?
 - 21.5. Roles of individuals or depts or changes / combinations of depts
 - 21.6. Slack resources? Departures / arrivals?
 - 21.7. Risk aversion / appetite
 - 21.8. organisation chart changes in roles / adding /removing senior / middle / workforce

SEARCHING FOR ANTECEDENTS

- 22 What have you learnt from the events and changes in the business?
 - 22.1. What worked?
 - 22.2. What did not work?
 - 22.3. With hindsight could you have mitigated some of these events by specific actions.

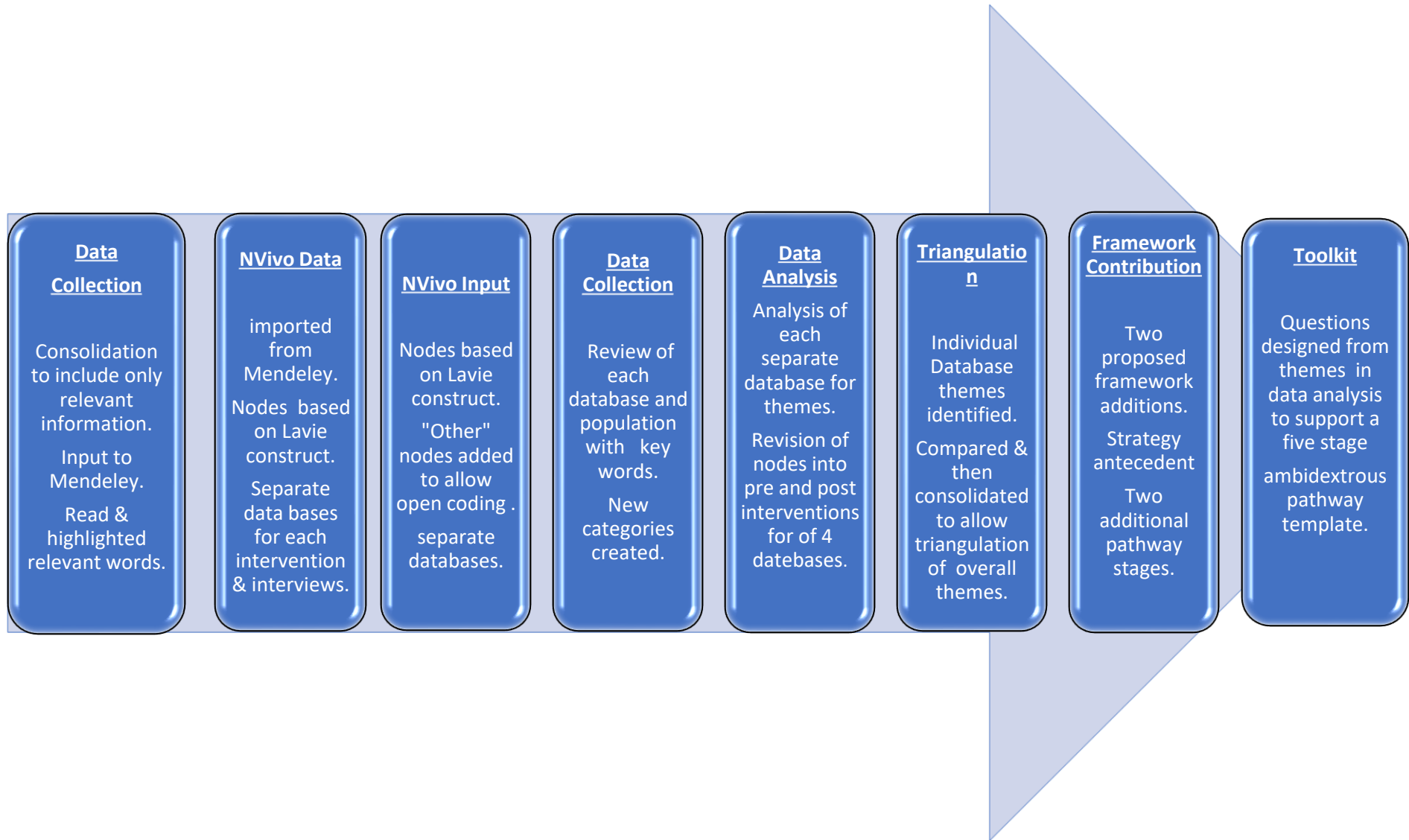
SEARCH FOR MODERATORS

- 23 What of the above events were outside your control but resulted in the need to change?
 - 23.1. Market changes
 - 23.2. Economy
 - 23.3. New product development - by firm or competitors
 - 23.4. People changes
 - 23.5. Ownership changes
 - 23.6. Acquisitions
 - 23.7. Legislations
 - 23.8. Technology - internet - new process – automation
 - 23.9. Competition
 - 23.10. Exogenous shock (2008 financial crisis or Brexit or technology or?)
 - 23.11. Other?
- 24 what advice could you give to others because of your experience of the above events to identify or deal with such external events?
- 25 Could you summarise what were the tensions and contradictions that you had to manage the challenge of short term focus and long-term development.

ATTEMPT TO SEE IF AFTER ALL QUESTIONS INTERVIEW CAN LIST ANY OF THEORETICAL FRAMEWORK ANTECEDENTS MODERATORS MODES OF BALANCE AND TRADE OFFS

- 26 If you could put into general headings / categories what would you say are the key areas that you need to look at when trying to manage the tensions of keeping the day to day operations working and changing and planning?

APPENDIX 7- Coding Pathway



APPENDIX 8- NVivo Coding

1st level coding	second level coding
past experience	path dependency
past performance	
risk appetite	
appropriability	turbulence
competitive intensity	
dynamism	
endogenous shock	
exogenous shock	
financial resources	
human resources	
technological resources	complexity
absorption capacity	
organizational age	
organizational culture	
organizational slack	
mechanistic structure	
organic structure	initiation
exploration/exploitation balance	
cognition (i.e. recognizing exploration/exploitation)	
alliances	
formal contextual ambidexterity	
informal contextual ambidexterity	
structural solution	
temporal solution	scenario planning
hybrid solution	
exploitation increase	
exploration increase	
performance decline/improve	
resource availability	pre commencement analysis
time horizon	
pre intervention change	
during intervention change	monitoring and measurement
post intervention change	
financial measurement	
intangible measurement	strategy and antecedents
monitoring	
informal strategy	
formal strategy	

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