An Exploration of the Relationship between Strategic Foresight and Organisational Resource Weaknesses

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Abstract

Organisations, as unique bundles of resources, hold the potential to confer competitive advantages. However, in a world of uncertainties, changing environmental conditions can transform these resources from strengths to weaknesses, posing a threat to firm survival. Despite the critical nature of organisational inadequacies, empirical studies on how firms effectively address their resource weaknesses within their resource bundle are scarce. This research, in response to the calls by resource-based scholars, aims to fill this gap by providing an in-depth and theoretically informed empirical study in this crucial yet unexplored area. Furthermore, it responds to the calls from foresight scholars by integrating foresight within management research.

While some studies recognise the importance of foresight in identifying future resource positions, there is a need for more discussion of the role of strategic foresight in the management literature. By integrating foresight and resource-based literature, this thesis explores how strategic foresight enables firms to identify and mitigate weaknesses within a firm's resource bundle. The unique integration of these two fields makes this study stand out and positions it as one of the first to investigate the role of strategic foresight in addressing organisational resource weaknesses.

Adopting a pragmatic philosophy with the Gioia methodology as its empirical approach, the qualitative study spans two phases over 32 months and collects, analyses, and synthesises data from 28 in-depth semi-structured interviews and secondary records using NVivo. This results in insights into resource weaknesses and the nature of foresight.

The study makes several contributions, and the findings emphasise the importance of foresight in detecting and addressing resource deficiencies within a firm. The research identifies three levels of foresight, including Strategic Foresight, Strategic Insight, and Tactical Foresight, that enable firms to adapt to changes when weaknesses arise and

leverage their strengths. The findings align with the resource-based view literature, which states that firms require foresight to achieve a competitive advantage.

The generic foresight process framework is a crucial contribution to the foresight literature that reveals much-needed nuance into strategic foresight and how it manifests in firms. Findings also indicate that having a pragmatic outlook that allows firms to be change-ready when weaknesses arise is critical in managing weaknesses, consistent with recent advances in strategic management thinking post-COVID.

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CA	Competitive Advantage
CDA	Competitive Disadvantage
DC	Dynamic Capabilities
I/O	Industrial Organisation
RBV	Resource-Based View
RBT	Resource-Based Theory
SA	Strategic Asset
SL	Strategic Liabilities
VIRN	Valuable, Inimitable, Rare, Nonsubstitutable
VIRO	Valuable, Inimitable, Rare, Organised

Statement of Copyright

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Dedication

I dedicate this thesis to my mother.

Chapter 1: Introduction

1.1 Research Motivation

Firms operate in a world that has become increasingly complex and dynamic, where the nature of change has changed. Under such conditions, in addition to taking advantage of the opportunities, firms should be able to manage future uncertainties. Historically and recently, several successful firms have lost their dominant position or ceased to exist as their resource base could not provide the advantage they once had in the marketplace. The consequences of not efficiently minimising current and potential future threats to the firm can be dire, as evidenced by the downfall of once-successful companies like Arthur Andersen, Blockbuster, BlackBerry, Kodak, and Toys R Us. Despite their past successes, these firms either did not foresee the emergence of weaknesses or could not mitigate their identified weaknesses, leading to their eventual demise.

While several studies focus on how firms find opportunities and develop strategic assets, research on how firms minimise their resource weaknesses within their resource bundle is lacking. It will be fascinating to explore how firms navigate environmental changes and successfully sustain the overall strength dimensions of their resources by addressing any current, emerging, and future weaknesses. Is the organisational process that enables firms to identify and build strategic resources different from identifying and mitigating weaknesses? How can firms foresee the emergence of weaknesses? If so, to what extent can foresight help firms identify current and emerging weaknesses? These questions raise our curiosity and hold the key to ensuring firms' future success and longevity.

This thesis applies the Resource-Based View (RBV) and Strategic Foresight approach as a theoretical underpinning. It empirically investigates the role of strategic foresight in addressing resource weaknesses and seeks to answer the above fundamental questions.

This chapter introduces this research. It explains this study's motivation (1.1) and the problem statement (1.2). It highlights the study's importance (1.3), followed by the aims,

objectives, and research questions that guide this research (1.4). Section (1.5) highlights the methodological approach taken to conduct the study. Section (1.6) presents the research focus and contribution to knowledge, while Section (1.7) presents an overview of the structure of the thesis.

1.2 Statement of Problem

In recent years, management literature has acknowledged the Resource-Based View as a leading framework for explaining the sources of competitive advantage (CA) and superior performance (Lockett et al., 2008). The central premise of the RBV is that competitive advantage and superior performance are achieved when firms have valuable, unique, inimitable, and non-substitutable resources (VIRN attributes) and are organised to develop value-generating strategies by deploying those resources (VIRO).

Following the principles of the Resource-Based View of the firm, competitive advantage and superior performance are based on the ownership of firm-specific resources that are valuable, unique, inimitable, and non-substitutable. In addition, inimitability, nonsubstitutablity and nontransferablity of valuable and rare resources are the sources of sustainable competitive advantage, and inter-firm performance differences arise from the asymmetric resource strengths. However, one of the common accusations against the Resource-Based View of the firm is its static nature. In other words, it fails to include and account for the time dimension. The intersection between when a firm's resource base is a true strength and when it becomes a weakness is context-driven. As time passes and environmental (external and internal) conditions evolve, resources can become weaknesses. Over time, firms can find themselves unable to gain an advantage or see their advantage erased when they cannot exploit or extend a particular resource position or have the wrong set of resources that cost the firm. Hence, while it is vital to identify, develop and exploit resource strengths, the ability to identify and coordinate organisational efforts to mitigate resource weakness is equally essential. Resource weaknesses come from two fundamental viewpoints: (1) the absence of resources required to execute a chosen strategy, such that existing resources are weaknesses strategically, or (2) existing resources are not exploitable for advantage or superiority in a strategy. Resource weakness increases the likelihood of being attacked by a rival. It brings

inefficiencies and an inability to exploit new opportunities. However, an in-depth review of the literature identifies two fundamental problems.

Firstly, a common theme that emerges from the review of the RBV literature is that the approach is focused predominantly on firms' resource strengths to explain firm performance. However, it is essential to reiterate that during the development stages of the RBT (Resource-Based Theory), Wernerfelt (1984), Barney (1991), and Grant (1991) clarified that resources include both strengths and weaknesses, and Andrews (1970) underlined the equal importance of understanding both resource strengths and weaknesses.

Not surprisingly, studies by Sirmon et al. (2001) and Ray et al. (2004) show that organisational performance results from the interplay between strengths and weaknesses. Even so, discussions within the RBV have mostly excluded resource weakness as a noteworthy inclusion in explaining firm performance or inter-firm performance heterogeneity. Several scholars have critiqued the current focus on looking for a correlation between certain resource factors (ex-post) and firm performance without considering the moderating effect of resource weakness (Arend, 2004) (West & DeCastro, 2001; Powell, 2001; Arend, 2004; Armstrong & Shimizu, 2007; Hughes & Morgan, 2007; Lockett et al., 2008; Hughes et al., 2010). Unfortunately, the focus on resource strengths has limited the discussion on the role of resource weaknesses in firm performance.

This gap in the literature underscores the need for further research on resource weaknesses,

Secondly, while the management literature acknowledges the importance of organisational foresight in identifying a firm's future resource configuration (see Coase, 1937; Barney, 1986a; Ahuja et al., 2005), there is a lack of discussion on the role of foresight. These research gaps are not just puzzling; they are a significant void that needs addressing.

It is puzzling on two accounts. Firstly, it is a puzzle because research on resource weaknesses, a crucial yet unexplored area, is still lacking despite its significant role in the RBV's conceptualisation, and this shortcoming was highlighted more than a

decade ago by several scholars (West & DeCastro, 2001; Powell, 2001; Arend, 2004; Armstrong & Shimizu, 2007; Hughes & Morgan, 2007; Lockett et al., 2008; Hughes et al., 2010). Indeed, one of the major criticisms of the RBV is that the literature has focused on resources considered strategic (i.e., resources with VIRO characteristics), and strategic assets have been predominantly used as an independent variable to explain performance without consideration of any weaknesses within the resource portfolio.

For example, Newbert's (2007) systematic literature study finds that out of the fifty-five critical empirical papers selected, 51 had performance as a dependent variable, 33 specific resources, and 19 specific capabilities as independent variables. Crook et al. (2008) meta-analysis also highlights the association between strategic resources (i.e., valuable resources) and positive performance, a standard approach within the RBV literature (looking for causation between performance and specific resources / linking ex-post-performance observations to resources). Even the most established resource-based scholars seem biased towards resource strengths over weaknesses. For example, Kaufman (2016) points out that Barney and Clark's (2007) work has dedicated a total of sixty-six pages discussing competitive advantage (16 index listings) compared to only two listings for competitive disadvantage covering two pages. Though Selznick (1957) and Andrews (1970) looked at factors that negatively affect competitive advantage, the distinctive view also overlooks the need for a clear conceptualisation of what constitutes a resource weakness or inadequacy (West & DeCastro, 2001).

This puzzle raises an interesting question about why there is limited research on resource weaknesses. One of the critical reasons is that practitioners and scholars continue to focus on the positive aspects of resources as they see more gains in addressing performance through assets than preventing decline (Arend, 2004; Arend & Lévesque, 2010).

However, we need to include resource weaknesses in our understanding of firm performance to ensure we maintain the robustness of the RBV framework in explaining firm performance (West & DeCastro, 2001; Lockett et al., 2009; Kraaijenbrink et al., 2010). When not accounting for resource weakness, the RBV tells just half the story (Arend, 2004), rendering resource-based explanations for competitive advantage and

superior performance incomplete (Sirmon et al., 2010). From a practical perspective, this omission is more than just a critical oversight. It can also compromise firm sustainability, as it needs to account for a significant aspect of its resource portfolio. Furthermore, such an understanding should also enhance the theoretical value of the RBV (Armstrong & Shimizu, 2007) and the explanatory and predictability of the theory (West & DeCastro, 2001; Arend, 2004). Hence, in the context of the leading prescription of the RBV and its theoretical framework, the relative effects of resource weaknesses on firm performance and how firms identify and manage weaknesses are crucial issues that need addressing.

Secondly, the lack of integration between the RBV and foresight literature is also puzzling. While Coase (1937), Barney (1986), Hamel and Prahalad (1994), and Ahuja et al. (2005) have all highlighted the role of 'foresight' in a firm's ability to alter its resource base, this concept has not been adequately integrated into the RBV framework. Coase (1937) argues that foresight is a critical capability that enables firms to choose and plan between alternative economic activities. Barney (1996) suggests that firms need foresight to identify and meet their expectations of the future value of their strategy. Hence, RBV theory predicts that through foresight, firms can minimise the accumulation of resources that do not enable them to implement their strategy effectively.

Cockburn et al. (2000), reviewing the market-based view and the resource-based view literature, argue that both frameworks implicitly identify the firm's foresight as the source of the firm's competitive advantage. However, strategic foresight has received much less attention in the management literature Rohrbeck (2012); Vecchaito (2015), Gordon et al. (2020), and Fergnani (2020). Most of the studies within the management discipline are limited to environmental scanning, one of the tools used in strategic foresight exercises (e.g., Hambrick, 1982; Daft et al., 1988; Elenkov, 1997).

The central tenet of the foresight literature is that the future is unpredictable, but through systematic analysis, firms can systematically prepare for the future. The strategic foresight process enables firms to widen their ontological perceptions by assessing the consequences of current actions, detecting and avoiding problems before they occur, considering the present implications of probable future events and envisioning aspects of desired futures. The core of strategic foresight is the ability to

identify a superior course of action and foresee its consequences. However, scholars question this central tenet of foresight as something impossible or limited (Gavetti & Menon, 2016). There is no science to identify the relevant facts from which the future could emerge. Teece and Leih (2016, p.6) write that even with access to 'big data, firms lack information about the future, and scientific approaches may not help firms "cut through the fog that deep uncertainty creates". Such constraints make for a bleak prospect for a theory of foresight, a prospect noted by Whitehead (1939, p.111), who writes, "Probably a neat doctrine of Foresight is impossible". Indeed, an acceptable foresight theory is still lacking (Oner, 2010; Hideg, 2007; Marien, 2010; Piirainen & Gonzales, 2015; Wayland, 2015). This shortcoming is one of the critical reasons management scholars have yet to accept the strategic foresight construct entirely and have raised scepticism about the effectiveness of the contributions of foresight (Vecchiato, 2015).

Though management scholars have shied away from foresight due to a lack of theory, firms have widely applied foresight across several industries, including Oil and Gas (Wack, 1985; Vecchiato, 2012), Chemicals, Telecommunications, Consumer Electronics (Vecchiato, 2012; Heger & Boman, 2015). Governments and international institutions also use foresight to support local firms to enhance their growth and competitive advantage in overseas markets (Vecchaito et al., 2019) and universities establishing research centres to engage in foresight research (Voros, 2013; Minkkinen, 2019). The broad acceptance and practice of foresight activities by firms highlights that managers are more likely to have taken a pragmatic approach to understanding and resolving organisational problems (i.e., utility-oriented) than focusing on the theoretical underpinning. Evidence from the literature identifies that foresight praxis is practised without a theory, driven by practical needs (Hideg, 2007). Hence, it is unhelpful to ignore foresight literature as it impedes our understanding of whether, how and under what conditions the foresight process might work (Scoblic, 2020), given the practical significance of the foresight process.

1.3 The Research Aim, Objectives, and Questions

1.3.1 The Research Objectives

The study attempts to fill the central gap in the lack of empirical studies on the interplay between strategic foresight and organisational weaknesses. From a practice perspective, to what extent can strategic foresight enable and support firms in identifying current, emerging, and future weaknesses?

1.3.2 The Research Aim

This research aims to understand how to minimise the accumulation of resource weaknesses within their resource bundles, thereby increasing their performance. The study explores the concept of resource weakness, develops a critical understanding of the various categories of resource weakness, and explores the evidence reflecting the role of strategic foresight in identifying and mitigating current, emerging, and future weaknesses.

The two key objectives of the research are as follows.

1. Conduct a comprehensive literature review of the resource-based view and strategic foresight literature.

The literature review helps to

- Clarify the theoretical underpinnings adopted in this thesis.
- Justify the methodological approach of this thesis.
- Develop the contribution to knowledge.

At the empirical stage:

- Investigate and explore firms' various tools and techniques to identify and manage resource weaknesses.
- Investigate the role of strategic foresight in resource weakness identification and management under conditions of uncertainty.

1.4 The Key Research Question:

This study addresses the current need for knowledge on how firms address resource weaknesses. Accordingly, the following key research question will guide this study.

Research Question 1: How do firms identify and mitigate the accumulation of resource weaknesses within their resource base?

In addition to the above high-level question, the study seeks to answer two sub-questions. Sub-question 1a addresses the role of strategic foresight in enabling firms to identify and mitigate resource weaknesses. As an extension of the first sub-question, the second sub-question seeks to address the importance of strategic foresight under conditions of uncertainty.

RQ 1a. To what extent does strategic foresight enable firms to identify and manage their resource weaknesses?

RQ 1b. What is the nature and impact of foresight under conditions of uncertainty?

1.5 The Methodological Approach

Philosophically, this thesis adopts the pragmatic approach, which aligns with Rorty (1999). It sidesteps the contentious issues of truth and reality and accepts that there can be multiple realities (Feilzer, 2010). The focus is on producing actionable knowledge (Kelly & Cordeiro, 2020) that solves real-world problems (Cherryholmes, 1992; Feilzer, 2010).

From a methodological perspective, this work adopts the Gioia methodology (Gioia & Thomas, 1996), a novel approach rooted in the interpretative approach (Gehman et al., 2018) for systematic analysis and presentation of the collected qualitative data. The fieldwork was undertaken in two stages between April 2019 and December 2021. The data set includes data from twenty-eight interviews and secondary records. The study used NVivo 1.0 (2020) and NVivo 14 (2023) to analyse the data.

1.6 Contribution to Knowledge

This study addresses the shortcomings of the RBV and foresight literature and introduces several theoretical and practical contributions. First, respond to scholarly calls from West & DeCastro (2001), Powell (2001), Arend (2004), Armstrong & Shimizu (2007), Hughes & Morgan (2007), Lockett et al. (2008), Hughes et al. (2010) and Knott, (2015) to add to our knowledge on organisational resource weaknesses. Secondly, the study also responds to the calls from Rohrbeck (2012), Vecchaito (2015), Gordon et al. (2020), and Fergnani (2020) and integrates the strategic foresight framework with the RBV literature to address the gap in understanding organisational resource weaknesses. By integrating foresight and strategic management literature, the study presents a comprehensive empirical study on organisational resource weaknesses identification and management process, introduces an enhanced foresight process framework, and provides a framework for identifying and managing organisational resource weaknesses. Additionally, it offers broader links to dynamic capabilities theory.

An empirically validated generic foresight process framework for identifying and mitigating organisational weaknesses is the cornerstone of this research. The generic foresight process framework identifies three levels of foresight, showing that firms use different approaches to identify current, emerging, and future unknown weaknesses. The first aspect of foresight is the traditional strategic foresight work, aligning with the literature (e.g. Voros (2003). However, adding strategic insight and tactical foresight is a novel approach grounded in this research's empirical findings.

The study's contributions to the foresight literature reveal much-needed nuance into the concept and how it manifests in firms. The study offers support for the assumption that foresight enables firms to make meaningful resource reconfigurations, providing a competitive advantage (Coase, 1937; Barney, 1986; Hamel & Prahalad, 1994; Ahuja et al., 2005; Rohrbeck & Schwarz, 2013; Vecchiato, 2015). The study's findings challenge the notion that foresight lacks theoretical grounding (e.g., Oner, 2010; Hideg, 2007; Marien, 2010; Piirainen & Gonzales, 2015; Wayland, 2015; Gavetti & Menon, 2016) and offers empirical evidence of its critical role in resource reconfiguration.

Furthermore, the study's findings argue that three levels of foresight—strategic foresight, strategic insight, and tactical foresight shed light on how firms identify resource weaknesses and generate strategic options for their mitigation. The research not only adds depth to the understanding of multiple levels of foresight that enable strategic managers to identify and address resource weaknesses pragmatically but also significantly contributes to academic and practitioner knowledge gaps in this area, underscoring the importance and impact of this study.

The first aspect of foresight is 'Strategic Foresight'. Strategic foresight enables firms to identify unknown future weaknesses. The study provides empirical evidence that traditional strategic foresight processes are the primary tools firms use to understand and reduce strategic uncertainties (Elenkov, 1997) and gain a competitive advantage that aligns with the literature (e.g. Hambrick, 1981; Jennings & Lumpkin, 1992; Hamel & Prahalad, 1994; Slaughter, 1996; McMaster (1996), Cockburn et al. (2020), Gioia et al. (2002), Vecchiato (2012) Vecchiato (2015), Gavetti and Menon (2016), Schwarz et al. (2018) and Haarhaus and Liening (2020).

The findings align with the literature in highlighting strategic foresight work as a path-independent process that seeks to extend and develop multiple mental frameworks and their implications for the resource base (Bourgeois, 1980; Slaughter, 1996; Wayland, 2015; Vuori, 2015; Sarpong & Maclean, 2016 and Scoblic, 2020).

However, findings also indicate that under conditions of dynamic uncertainty where the future is cognitively distant, firms engage in selective foresight work to develop cognitive formulations to guide the firm. These findings are in line with the insights of Dill (1958), Eisenhardt and Martin (2000), Gavetti and Levinthal (2000), Schmidt (2015), and Wayland (2015).

The second aspect of foresight is 'Strategic Insight', which enables the firm to identify current and emerging weaknesses from its resource bundle. The findings indicate that the firms derive strategic insight from their managerial resource cognition, critical ecosystem knowledge, and collective and relevant experience.

Resource cognition is crucial in identifying current and emerging weaknesses, and limitations in resource cognition limitations can make it challenging to identify potential

weaknesses within the firm earlier. The findings of the study contribute to the resource cognition literature (Schilke et al., 2018; Schoemaker, 2018; Tripas & Gavetti, 2000; Augier & Teece, 2008; 2009; Danneels, 2010; Schmidt, 2015 and Leemann & Kanbach, 2023) by confirming the importance of resource cognition in managing inadequacies and for the firm to maintain a dynamic resource base that supports its competitive advantage.

A key finding of this study is the importance of the managers' firm-specific experience in resource reconfiguration, especially in dynamic environments. Due to the path-dependent nature of the resource bundle, firm-specific experience is crucial for firms to anticipate and act in given contexts, underscoring the critical role of firm-specific managerial experience in managing uncertainty. These findings complement insights from Shane (2000), Helfat and Lieberman (2002), Sturman (2003), Kor and Sundaramurthy (2009), Schmidt and Keil (2013), and Schmidt (2015), who highlight the critical role of idiosyncratic experience for superior resource management.

Another crucial finding of the study is that it offers evidence to underscore the criticality of firms' insights into their First Principles, as any decay, when not addressed, may lead to the perpetual decline of the firm. The findings align with West and DeCastro (2001), Hughes et al. (2010), Breton-Miller and Miller (2013), Dierickx et al. (2013), and Wild and Lockett (2016). Understanding the time-dependence and contextual nature of developing resources and their decay is crucial in identifying and eliminating inadequacies (e.g., Wernerfelt, 1984; Dierickx & Cool, 1989; West & DeCastro, 2001).

Organisational members closer to a resource have a higher cognition of that resource, and in larger firms, knowledge exists in blocks. The study's findings highlight the critical challenge for firms to develop insights into the location and nature of the knowledge blocks and develop routines or processes to integrate seamlessly and meaningfully to guide their actions. Foresight work, as a collaborative social process, is found to enhance the integration of knowledge, which is in line with the literature (e.g., Durand, 2009; Priem & Cycyota, 2001; Rohrbeck et al., 2015; Scoblic, 2020). Indeed, Danneels (2010, p.1) argues that "resource cognition is a missing element in dynamic capability theory".

The third aspect of foresight is 'Tactical Foresight' and involves managing identified (known) weaknesses. Once a weakness is known, firms must decide how best to mitigate it based on understanding the situation. Under conditions of uncertainty, firms must analyse uncertain environments dynamically to ascertain strategically relevant information and provide the best possible strategic options to incorporate into their decision-making processes, as Courtney (2001) proposed.

The study highlights the crucial role of ordinary resources. Firms can use ordinary resources to defend their strategic assets by engaging in tactical resource manoeuvres, underscoring the critical role of ordinary resources in supporting strategic assets and strengthening their dimensions. In line with the literature, these findings underscore the value potential of ordinary resources in indirectly helping firm survival (e.g., Barney, 1995; Knott, 2003), enhancing firm performance (Cockburn et al., 2000; Shamsie et al., 2004; Branzie & Thornhill, 2006; Warnier et al., 2013). Additionally, findings contribute to the literature by offering empirical evidence that firms can tactically use ordinary resources to support and enhance the strength dimension of their strategic assets and address weaknesses within the resource bundle.

Another critical addition from the study to the literature is the time dimension firms adopt in their tactical management of emerging weaknesses. A firm's tactical response to a known weakness depends on its judgement of the longevity of the asset in offering a competitive advantage or performance improvements, which supports Karadag and Poppo's (2020, p.1535) notion that "the timing and extent of which (resource management) should be aligned with the temporal properties of the strategic resources."

Firms must collect relevant information continuously to gather strategic intelligence and develop strategic options to keep their resource base supple and mitigate known weaknesses. Strategic intelligence, derived from a firm's strategic foresight and insight, is pivotal in generating tactical options. The information firms gather for strategic insight and tactical foresight, and their strategic options are usually path-dependent. These findings markedly differ from the traditional foresight work that aims to explore beyond the current epistemological and ontological boundaries and, hence, by nature, path independent. Additionally, findings indicate firms are pragmatic yet deterministic

when anticipating future weaknesses (the unknown) and focus on being change-ready to take advantage of new opportunities and minimise threats (weaknesses).

On the other hand, when the unknown weaknesses become 'known', firms adopt an optimistic and anti-deterministic attitude and work towards desirable futures in line with Godet (2008) and, in particular, with Bourgeois (1984), who suggests a dialectic between deterministic and anti-deterministic approaches to strategy.

Findings indicate that firms need a pragmatic outlook about the future, and those with a pragmatic outlook are better placed to mitigate identified weaknesses from their resource base. Importantly, this research underscores the practicality of such an outlook, as firms believe it is almost impossible to foresee every dimension of their resource weaknesses and their effect on the firm, especially in dynamic environments. However, while appreciating and accepting that not all future weaknesses can be identified, respondent firms focus on being change-ready instead of endless efforts to predict or understand all possible future states. As such, the implementation and application of strategic insight, tactical foresight, and strategic foresight are all part of a pragmatic outlook to be prepared for resource weaknesses and be change-ready when weaknesses come to the fore (whether they were known or not predicted). Such a position is consistent with recent advances in strategic management thinking post-COVID.

1.7 The Structure of the Thesis

This thesis contains six chapters, as outlined below.

Chapter One starts with an introduction to the study, the research motivation, and its importance. Then, it discusses the research aim, objectives, and the key research question addressed in this study. The chapter also highlights the study's methodological approach, the research focus, and primary contributions to knowledge.

Chapter Two of this thesis is divided into two sections. The first section reviews resource-based theory, comprehensively understanding and focusing on organisational resource weaknesses. The second section reviews the literature on environmental uncertainty, the Dynamic Capabilities framework, and Strategic

Foresight, summarising the theoretical relationship between the RBV, Dynamic Capabilities, and Strategic Foresight Frameworks.

Chapter Three discusses the philosophical considerations and rationale for this study's adopted methodology. It also discusses the methods used to collect and analyse the data and the data structure.

Chapter Four presents the study's findings, covering the four aggregate dimensions identified in the data structure. These findings have significant implications in the field, offering practical insights and potential avenues for further research, reinforcing the study's relevance and applicability.

Chapter Five summarises the findings, presents the Generic Foresight Framework, and illustrates the Organisational Resource Weakness Identification and Mitigation Framework. It then summarises the study's key contributions.
Chapter Six provides a concluding summary of this thesis, implications for praxis, and the study's limitations, and it offers recommendations for further research.

Chapter 2: Literature Review

How do resource weaknesses affect a firm's performance and competitive advantage, and how can firms identify and mitigate resource weaknesses?

This chapter reviews the primary theoretical frameworks used to study resource weakness, laying the foundation for our key question. It then integrates the concept of strategic foresight. This unique integration, which I will explore in detail in the latter sections of this thesis, offers a fresh and innovative perspective on identifying and managing weaknesses. By doing so, I underscore the relevance and applicability of strategic foresight in this context and mark a significant departure from traditional approaches.

Firstly, I emphasise the importance of understanding organisational resource weaknesses by summarising the Resource-Based View theory, highlighting one of its significant drawbacks. Secondly, I seek to define and explain organisational resources and their categories within the literature. The review also compares how distinct categories of resources influence performance and competitive advantage (CA), elucidating the role of resource weaknesses. However, the focus is on resource weaknesses and their role in rendering a competitive disadvantage (CDA) and inferior performance. Finally, by connecting strategic foresight with the resource-based and dynamic capabilities frameworks, I examine the critical role of foresight in identifying current organisational weaknesses and anticipating and preparing for emerging ones. This understanding, with its theoretical value, also holds practical implications, highlighting the significance of this topic and the real-world impact it can have on organisations.

Section 1: The Resource-Based View

2.1 Theoretical Foundation of the Resource-Based View

The Resource-Based View (RBV), a leading framework for explaining the sources of competitive advantage and superior performance (Lockett et al., 2008), conceptualises firms as a bundle of resources (Penrose, 1959; Andrews, 1970; Rubin,

1973; Barney, 1991; Eisenhardt & Martin, 2000). The framework focuses on individual firm-level resources and their characteristics to identify which resources could be sources of sustainable competitive advantage and firm performance (Foss & Knudsen, 2003). The central premise of the RBV is that competitive advantage and superior performance are based on the ownership of firm-specific resources that are valuable, unique, inimitable, and non-substitutable (Barney, 1991), and the firm develops value-generating strategies by deploying those resources (Barney, 1995; Eisenhardt & Martin, 2000). Inimitability, nonsubstitutablity and nontransferablity of valuable and rare resources and the unique way in which the firm can deploy those resources are the sources of sustainable competitive advantage (Barney, 1997; Eisenhardt & Martin, 2000; Priem & Butler, 2001), and inter-firm performance differences arise from the asymmetric resource strengths (Barney, 1991). Within the RBV, the quintessential goal is to account for resource strengths that can generate rent for the firm (Coff, 1999). However, in a world where firms face deep uncertainties, ignoring the role of resource weaknesses may compromise firm sustainability and our ability to account for and address weaknesses.

To position and connect the conversations that guide the overall investigation into resource weaknesses and the role of strategic foresight in identifying and mitigating weaknesses, I seek to understand what constitutes resources in organisations and how they are categorised based on their contribution to organisational performance and appreciate the importance of studying organisational resource weaknesses. Therefore, the following section considers organisational resources.

2.2 Resources

Within the RBV, the concept of resources is 'extremely expansive' (Denrell et al., 2003). They are firm attributes that include all assets, capabilities, processes, information, and knowledge, enabling the firm to implement strategies (Barney, 1991). These resources, as stocks of factors that an organisation owns or controls (Amit & Schoemaker, 1993; Helfat & Peteraf, 2003; Sirmon et al., 2007), are crucial for the firm's value chain (Javidan, 1998) and its ability to undertake tasks (Rubin, 1973, p.937), produce outputs (Helfat & Peteraf, 2003), or develop new resources (Coase, 1937). Within the literature, resources are differentiated from capabilities. For

instance, Amit and Schoemaker (1993) identify a firm's 'capabilities' as the ability of the firm to bundle and deploy resources to achieve the desired outcome. This distinction underscores that resources alone do not translate to a firm's performance unless configured and exploited to produce desired results. Indeed, Hansen et al. (2004, p.1280) argue that 'what a firm does with its resources is at least as important as which resources it possesses,' highlighting the importance of firm capabilities.

However, this study uses 'resources' as an all-inclusive term that includes both physical resources and intangible organisational capabilities as identified by Wernerfelt (1989), Peteraf (1993), and Barney (1991, 1995) and is limited to firm-level abilities (Denrell et al., 2003). Such a position also aligns with Penrose's conceptualisation of resources as productive and administrative resources. Analysing Penrose's work, Hansen et al. (2004) concluded that she had identified two classes of resources, 'Productive' resources and 'administrative resources', with the latter having the discretion to exercise the former. In other words, firms need resources (capabilities) to deploy and exploit resources (Michalisin et al., 1997).

The following section will explore resource categorisation under the RBV terms. However, it is vital to highlight that the resource-based theory is not really about resources, per se, but about the attributes that resources must possess to be a source of sustained competitive advantage (Barney & Clark, 2007, pp. 249-250). As such, this study aims to identify and categorise resource weakness characteristics based on their impact on performance and value creation, not weak resources *per se*. This clear focus on resource categorisation provides a solid direction for the research, ensuring its relevance and applicability.

2.2.1 Resource Categorisation

While the resource-based literature categorises resources based on their physical dimensions, functional characteristics and value-generating attributes, the key focus is on a resource’s value-generating attributes or potential to generate or diminish value for the firm.

Based on the value-generating potential, Barney (1991, p. 102) identifies three types of resources: 1) strategically relevant resources, 2) resources that may enable a firm to implement its strategies but reduce its effectiveness and efficiency., and 3)

resources that may prevent a firm from developing and implementing valuable strategies. Resources that provide different degrees of value to the firm are identified as valuable resources (Barney, 1991), strategic resources (Peteraf, 1991; Warnier et al., 2013), strategic assets (Amit & Schoemaker, 1993), critical resources (Newbert, 2008) common resources (Branzei & Thornhill, 2006) and ordinary and junk resources (Warnier et al., 2013).

Value-stripping resources are distinctive inadequacies (Selznick, 1957), inferior resources (Peteraf, 1993), resource weaknesses (West & DeCastro, 2001), and strategic liabilities (Arend, 2004). Those resources that provide parity, i.e., that do not influence firm performance, are considered marginal resources (Peteraf, 1993).

However, the value of a resource to a firm is not a fixed attribute but a dynamic, context-dependent factor. A resource that is a strength in one market can be a weakness in another (Barney & Hesterly, 2015). Moreover, the value of a resource fluctuates over time (Conner, 1991; Barney, 1991; Barney, 2001a; Priem & Butler, 2001; Helfat & Peteraf, 2003; Bowman & Ambrosini, 2007), leading some resources to lose their strength dimensions (Augier & Teece, 2008). How a resource combines with other resources and the strategic direction pursued by the firm also influences the value of that resource (Black & Boal, 1994). Therefore, within a firm, the value of a resource bundle is in a constant state of change as the resource base undergoes a continuous process of resource creation and decay (Lockett et al., 2009). At any given time, a firm's resource bundle sets the 'upper bounds' of the firm's value creation potential (Sirmon et al., 2007, p.278).

The following section expands on strategic resources and those that are non-strategic.

2.2.2 Strategic and Non-Strategic Resources

2.2.2.1 *Strategic Resources*

The concept of resources with VIRO characteristics, which contribute significantly to firm performance and competitive advantage, forms the cornerstone of the resource-based view (RBV) theory. These resources are not just assets for the firm but strategic assets or superior resources that can shape the firm's competitive position (Barney, 1991; Amit & Schoemaker, 1993; Peteraf, 1993). Interestingly, strategic resources

within the literature lack a priori definition, and the nature of the strategic resources is definable only ex-post and probable only after successful ex-post events (Connor, 2007).

Resources are valuable if they enable a firm to exploit opportunities and neutralise environmental threats (Barney, 1991). These valuable resources facilitate a firm's ability to conceive and implement strategies for efficiency and effectiveness (Barney, 1991; Conner, 1991). Moreover, it enables 'fit' with the firm's strategy and alignment with the environment (Black & Boal, 1994). This alignment, in turn, helps the firm gain a competitive edge in the market.

For a resource to be strategic and enable the firm to achieve a competitive advantage, it must meet 'four conditions' (Peteraf, 1993). They are resource heterogeneity, imperfect resource mobility, ex-ante, and ex-post limits to competition. The first two are considered assumptions, and the latter are model conditions (Barney, 1991; Michalisin et al., 1997). The two fundamental assumptions are that no two firms can have the same set of resources, which are relatively immobile. The two conditions that underpin the RBV are ex-ante and ex-post limits to competition (Peteraf, 1993). Ex-ante limits come from the ability of a firm to acquire a resource that could be a source of advantage when there is limited competition due to information asymmetry or when the focal firm gets lucky (Barney, 1986b; Ahuja et al., 2005). Ex-post, valuable, rare resources give the firm a first-mover advantage, enabling it to receive Schumpeterian rents. For a firm to sustain the advantage, its valuable resources must be imperfectly imitable by its competitors (Barney,1991). Without that resource, competitors face a "cost disadvantage" when acquiring or developing it (Shafeey & Trott, 2014, p.159). A resource may be difficult to duplicate for one or a combination of three reasons. Firstly, resource accumulation is path-dependent and influenced by the focal firm's unique history. Secondly, the resource is socially complex, and finally, the link between the resource and the firm's superior performance is causally ambiguous.

A firm’s unique path-dependent resources may pose significant challenges for other firms to replicate. They encompass a firm's distinct history, culture, interpersonal relations among managers, and reputation. Notably, a firm's resource base may have evolved from significant decisions and countless small changes to the resource bundle (Barney, 1995), underscoring the significance of these incremental

adjustments that challenge replication. While competitors may attempt to specify and replicate or re-engineer these resources, there is no assurance that they can achieve similar valuable benefits. Social complexity arises when resources result from intricate social phenomena (Barney, 1991; Eesley et al., 2014). Socially complex resources are not amenable to direct and standard management (Barney, 1991;1995), adding a layer of uncertainty and complexity to the process of imitation.

The term' causally ambiguous relationship' denotes a situation where the cause and effect of a resource's impact on the firm's performance are unclear. This ambiguity may be due to one or more of the following reasons. Firms often overlook the resources and capabilities as 'taken-for-granted' organisational characteristics or 'invisible assets'. These resources and capabilities may align with the interconnectedness of asset stocks and asset mass efficiencies (Shafeey & Trott, 2018, p.129). Additionally, the imitability of a resource is a function of its observability and link to advantage. (Connor, 2007; Hughes & Morgan, 2007). Due to a lack of physical dimensions (by definition), intangible resources are not observable and are challenging to imitate. According to the RBV logic, strategic assets are usually (but not necessarily) intangible resources (Connor, 2007; Hughes & Morgan, 2007).

Though the resource-based approach centres around the positive link between unique resources and superior performance, this correlation is on sticky grounds. For example, Newbert (2007), in his systematic analysis of the literature, found limited support for a positive relationship between unique resources, competitive advantage and firm performance. Only 53 per cent of the tests support RBV's central premise, which highlights that the firm's ability to organise itself in a way that it effectively combines its unique resources with other complementary assets is more crucial for competitive advantage and firm performance (Eisenhardt & Martin, 2000; Newbert, 2007). Hence, unique resources may not create a competitive advantage but certainly contribute to competitiveness (Newbert, 2008; Costa et al., 2013). The following section considers the complementary or non-strategic assets.

2.2.2.2 *Non-Strategic Resources*

Understanding the distinction between strategic and non-strategic resources is crucial. Not all resources are sources of competitive advantage, and not all intangibles are strategic resources. Some resources, while enabling a firm to be competitive, may not be sources of competitive advantage (Michalisin et al., 1997). For instance, engineers require tools to perform their tasks, but these tools are unlikely to be sources of sustainable advantage. They are 'ordinary' resources available in the factor markets (Barney, 1995; Branzie & Thornhill, 2006; Warnier et al., 2013). Such resources do not generate more than their cost, and their presence does not generally create a competitive advantage (Warnier et al., 2013) or generate above-average performance (Barney, 1991). Peteraf (1993) refers to these as 'marginal' resources, as they only help the firm to achieve breakeven but are nevertheless used by the firm in its production processes. Hence, they are considered non-strategic resources. Firms use non-strategic resources as the supply of strategic resources is limited and often cannot be expanded or expanded rapidly (Peteraf, 1993). However, Barney (1995) argues that common resources could be valuable and necessary for the firm's survival and may have the potential to help firms achieve a sustainable competitive advantage indirectly (Knott, 2003; Branzie & Thornhill, 2006)

Empirical studies demonstrate that firms can enhance performance using common resources (see Cockburn et al., 2000; Shamsie et al., 2004; Branzie & Thornhill, 2006) and their presence could be instrumental in emerging new business models (Warnier et al., 2013). Ray et al. (2004) and Branzie and Thornhill (2006) discover that while common resources do not directly contribute to firm-level performance, they can indirectly assist firms in attaining a competitive advantage by stimulating the development of firm-specific resources and business processes. Hence, the distinction between valuable and ordinary resources could be ambiguous (Branzie & Thornhill, 2006). Sometimes, the absence of ordinary resources can significantly destroy value, underlining their critical role in a firm's operations models (Warnier et al., 2013). This potential for value destruction without common resources is noteworthy in resource management.

To summarise, strategic resources are resources with VIRO (valuable, rare, inimitable, and organised) characteristics that contribute significantly to a firm's performance and competitive advantage. They are valuable because they enable a firm to gain a competitive advantage by exploiting opportunities and neutralising threats. Resource heterogeneity, imperfect resource mobility, ex-ante limits to competition, and ex-post limits are critical conditions for a resource to be strategic. Path-dependent, socially complex and causally ambiguous strategic assets may pose significant challenges for other firms to replicate. While the RBV emphasises the positive link between unique resources and superior performance, empirical evidence shows mixed support for this relationship. Unique resources may not always create a competitive advantage but certainly contribute to competitiveness. Competitive advantage is about enhancing firm performance through VIRO resources, and the literature highlights the positive association between competitive advantage and superior performance.

The following sections review the other side of the resource portfolio, resource weaknesses and their impact on competitive (dis) advantage and performance.

2.2.3 Value Stripping Resources

2.2.3.1 *Resource Weakness*

Resource weaknesses posit from two fundamental viewpoints: (1) the absence of resources needed to execute a chosen strategy, such that existing resources are weaknesses strategically, or (2) existing resources are not exploitable for advantage or superiority in a strategy (e.g., Covin et al. 1997; West & DeCastro, 2001), i.e., when a resource fails to satisfy 'the minimum success requirements" required by any firm (Powell, 2001, p.877) or strategic industry factors, the critical determinants of economic rent (Amit & Schoemaker, 1994).

However, West & DeCastro (2001) argue that resource weakness is more than the absence of a resource strength factor or the failure of the resource strength dimension. A firm's inability to develop a strategic asset differs from developing a resource weakness that puts the firm at a competitive disadvantage (West & DeCastro, 2001). However, Hughes et al. (2010) and Thornhill and Amit (2003) found that scarcity of resources negatively impacts the organisational ability to adapt to the changing

environment, resulting in strategy failure. Hence, the absence of strength dimensions is not a weakness but could be a source of future weaknesses.

Like a resource strength dimension, the weakness dimension of a resource is also context-dependent. When a firm's resources do not enable it to exploit an external opportunity or neutralise a threat, it is a weakness (Barney & Hesterly, 2015). If all the firms in the industry have the same resource weakness, then a firm achieves parity (Arend, 2004; Powell, 2011) as "all firms would suffer on an equal footing" (West & DeCastro, 2001, p.425). Similarly, a firm's resource position is weak when its relative value generation potential is lower than its rivals (Sirmon et al., 2010). The value of a resource could also be measured from its ability to create customer-perceived value emanating from customers' perception of the dynamics between the cost and utility provided by that resource (Bowman & Ambrosini, 2007). Hence, a resource that negatively impacts a customer's use value is a weakness for the firm. The asymmetry in resource weaknesses delivers a resource-based disadvantage for the firm (Michalisin et al., 1997).

Similar to ordinary or marginal resources that do not influence performance, some resource weaknesses may not be critical for the firm. However, it is essential to note that some resource weaknesses can significantly impact the firm's performance. Therefore, it is crucial to identify the characteristics of those weaknesses that demand critical organisational attention. The following section reviews the vital dimensions that can make a resource a liability for the firm.

2.2.3.2 *Strategic Liabilities*

A firm's strategic factors include strategic assets (SA) or liabilities (SL)/weaknesses. SA and SL are a subset of a firm's factors that affect its competitive performance. While strategic assets lead to a firm's competitive advantage, strategic liabilities lead to sustained competitive disadvantage (Arend, 2008).

For a weakness to be strategic, it must be valuable and rare (Arend, 2004; West & DeCastro, 2001). A weakness is valuable if the failure to address it will cause a significant loss of competitive advantage. West and DeCastro (2001, p.425) emphasise that "weaknesses and inadequacies must first be valuable, in the sense

that failure to address them causes significant loss of competitive advantage or places a firm at a competitive disadvantage". They are valuable as failure to resolve them could be costly as they impact firm performance and impede the implementation of firm strategy.

A weakness is rare when they are not available in the industry and are firm-specific and rare in an area related to its strategic context. Hence, there are no commonly available solutions to such weaknesses and learning to resolve them is costly. Firms may find it challenging to address such a weakness because they need established routines or solutions. A rare weakness that is not relevant to the strategic context of the firm does not lead to a competitive disadvantage. However, any change to the industry environment or the firms' strategic context could make the weaknesses more powerful (West & DeCastro, 2001). A strategic weakness is a strategic liability when they are ‘appropriated’ Arend (2004, p.1003). This characteristic is crucial as it implies that the firm has allocated resources for a specific purpose, making it difficult to reallocate. Additionally, there is no economical way of paying the cost.

Strategic liabilities could be dynamic. Despite environmental changes, they exhibit dynamism when they persist in being costly, appropriated, and scarce. This persistence can hinder a firm's dynamic capabilities and inhibit it from adapting to the changing environment. Potential strategic liabilities encompass a comprehensive range, including slow product development cycles, supply chain mismanagement, lousy reputation, strategy, product liability lawsuits, management, and poor financial structures (Arend, 2004). It is important to note that some liabilities can emerge from strategic assets. For instance, sunk costs, state-of-the-art production facilities (Ghemawat, 1991), and a specific technology (Christensen, 1997) can lock the firm on a competitive path that could fail. When such liabilities result in a competitive disadvantage, they become the firm's strategic liabilities (Arend, 2004).

Strategic liabilities negatively influence the firm's ability to generate rent. Performance decay can be extrapolated as the number of strategic liabilities increases. Complementarity between strategic liabilities could further exacerbate the impact on firm performance (Arend, 2004). The implications of strategic liabilities (SL) are profound, as Arend (2004) states that four fundamental implications arise from them:

1. As strategic liabilities increase, firm performance deterioration increases.

2. Firm performance deterioration is directionally proportional to the strength of strategic liability's strategic factors (SF).
3. Complementarity between strategic liabilities leads to the deterioration of firm performance.
4. Firm performance is the interplay between strategic strengths and liabilities within a given context.

Hence, one of the critical reasons for identifying and addressing organisational weaknesses is its ability to influence the dimensions of other resources within a firm's resource portfolio. Strategic factors (SFs) are crucial, as their strength and definitional characteristics can vary. Nevertheless, they remain strategic factors (characteristics of a strategic liability are measured relative to competitors). However, the strength of SF's definitional characteristics influences the impact of SL (Arend, 2008). When a strategic weakness is firm-specific, and when the strengths of the definitional characteristics of the weakness increase, it creates more strategic weaknesses, increasing the strength of the existing strategic liabilities, thereby leading to an exponential rate of decline in organisational performance (Arend, 2004). The rate of performance degradation also depends on the rate of resource decay (Dierickx et al., 2013; Rahmandad & Repenning, 2016). Rahmandad and Repenning (2016) highlight several case studies (Sterman et al., 1997; Easton & Jarrell, 1998; Repenning & Sterman, 2002) showing resource erosion's significant role in firm failure. Similarly, Dierickx et al. (2013) highlight the demise of Arthur Anderson in the wake of the Enron scandal as an example of the impact of the exponential rate of resource decay.

2.2.4 Sources of Strategic Weaknesses and Liabilities

Resources, being finite, can deteriorate due to environmental changes, such as alterations in customer preferences and competitor offerings (Breton-Miller & Miller, 2012). Understanding the sources of strategic weaknesses is paramount as it forms the basis for addressing them. These weaknesses can originate from various a diverse range of factors, including unfavourable shifts in the strategic landscape (West & DeCastro, 2001; Arend, 2004; Bowman & Ambrosini, 2007), existing strategic liabilities (West & DeCastro, 2001; Arend, 2004), high adherence to current strategy (West & DeCastro, 2001; Hughes et al., 2010), from strategic assets (Lieberman & Montgomery, 1988; Leonard-Barton, 1992; West & DeCastro, 2001; Arend, 2004),

unfortunate circumstances or unintentional mistakes (Hofmann & Frese, 2011; Frese & Keith, 2015; Mazor, 2017), and flaws in firm characteristics (Hughes et al., 2010; Dierickx et al., 2013; Wild & Lockett, 2016).

The potential for developing strategic weaknesses increases when firms excessively pursue a particular strength, neglecting to develop alternate viable resource positions or when opposing strategic factors reduce the positive impact of the strategic assets (West & DeCastro, 2001). A high adherence to a firm's strategy can be effective if no changes to the external environment or strategic context exist. However, when firms are more focused on their current strategy and the resource strengths that deliver that strategy, they may need to look beyond their current resource position to succeed in developing new resource strengths (Hughes et al., 2010). A notable example is IBM's failure to anticipate the growth of PCs and distributed processing, leading to significant underdevelopment in those areas. West and De Castor (2001) argue that though many IBM managers were aware of the changes in the market, the company pursued its strength in mainframes and large-scale customised applications in the 80s and 90s. IBM's failure is a stark reminder of the potentially dire consequences of not adapting to changing circumstances and failing to address weaknesses in firm characteristics, which can lead to significant underdevelopment and even organisational decline.

Resource weakness may be related to strengths or entirely unrelated (West & DeCastro, 2001). Strategic weaknesses could evolve from a strategic asset or develop as a by-product of a strategic asset (Arend, 2004). For example, core rigidities (Leonard-Barton, 1992) arise from the organisation's core knowledge sets (core competence). Inertia (Lieberman & Montgomery, 1988) caused by embedded assets and capabilities leads to the firm's inability to renew its resources when its strategic context changes. West & DeCastro (2001) state that inseparable weaknesses are more likely to develop from the resource strength development process, and separable weaknesses may develop outside the strength development process.

Weaknesses can also develop due to unintentional mistakes. The literature on organisational errors highlights how firms may develop weaknesses due to errors in their judgement. These 'errors' are unintended and potentially avoidable deviations from the organisation's established and acceptable characteristics, i.e., deviations from policies and procedures that could potentially lead to adverse organisational

performance (Hofmann & Frese, 2011; Frese & Keith, 2015). Such deviations in firm characteristics lead to the creeping up of unintended resource weaknesses. For instance, Samsung's desire to catch up and be more innovative than Apple led to an emphasis on speed, ignoring due diligence in the quality assurance process, leading to battery fire problems (Mazor, 2017). These are errors in the system or deviations from normally acceptable characteristics within the firm due to competitive pressures or agency issues (e.g., VW scandal).

The endurance of firm characteristics is not just crucial, but it forms the very foundation of successful behaviour in ever-changing circumstances and serves as a sustainable competitive advantage (Connor, 2007). Conversely, any weakness in these characteristics 'creates the conditions that perpetuate decline' (Hughes et al., 2010, p.623). Firm characteristics are not immune to decay and can be outcompeted or rendered obsolete, necessitating continuous upkeep. Breton-Miller and Miller (2013), drawing from an unconventional source, curatorship literature, propose that firms can counter these weaknesses by preserving, understanding, and orchestrating such resources. A weakness dimension may evolve, remaining unnoticed until a change in the environmental context or strategy occurs (West & DeCastro, 2001). The case study of Arthur Anderson by Dierickx et al. (2013) underscores how flaws in firm characteristics can trigger a swift decay in strategic resources, leaving managers with no time for corrective measures. Wild and Lockett (2016) further illustrate how weakness in firm characteristics can lead to complementarities between resource weaknesses, jeopardising the survival of firms like Jarvis, a British rail firm.

Firms must be able to identify their source of weakness in order to address it. However, the insulating factors that offer a firm a sustainable advantage from its unique resources are also at play concerning weakness dimensions.

2.2.5 Isolating mechanisms and resource weaknesses

Firms strategically invest in and meticulously identify resource strengths through internal cause-and-effect evaluation. These resources' complexity and causal ambiguity dimensions represent a crucial, insulating factor for firms. They make these strengths challenging for competitors to imitate (Lippman & Rumelt, 1982; West & Decastro, 2001; Knott, 2003). However, it is essential to note that social complexity,

causal ambiguity, path dependence, and context dependency operate differently regarding strengths versus weaknesses (West & Decastro, 2001; Breton-Miller & Miller, 2015).

Two main features arise from social complexity and causal ambiguity concerning resource weaknesses. Firstly, the very qualities of some resources that generate sustainable rents can, paradoxically, also make them and their rents more vulnerable, that is, less sustainable, as ambiguity can also hinder the firm from recognising and understanding the sources of its advantage, thus limiting its value and the ability to exploit or recreate it. For instance, isolating mechanisms that sustain inimitability, such as path dependence, causal ambiguity, context dependency, and tacitness, also increase the complexity of understanding and managing resources, thereby enhancing the likelihood that they will lose their value as sources of economic rents (King, 2007; Breton-Miller & Miller, 2015).

Secondly, the same complexity and ambiguity can pose a significant risk if they lead to the oversight of emerging weaknesses. The failure to identify and manage current strategic liabilities can have serious consequences. One problem is the inability to identify a cost, while another is the failure to identify the source of that cost. Hence, a weakness can grow within the organisation over time without its presence known and manifest suddenly (West & Decastro, 2001).

Once identified, firms must convert the strategic liabilities to a form that is, at a minimum, benign. However, the challenges for economic inconvertibility are similar to those for economic inimitability and non-substitutability. It is difficult to isolate and identify the factors and change them into something else. For instance, the inseparability of an asset and a liability, where the benefits of the asset conceal the costs of the liability, creates the former problem. If this inseparability combines with causal ambiguity, difficulties in identifying the cost source arise. Without addressing these issues, the same type of resource audit (e.g., Schoemaker and Amit, 1997) that uncovers Strategic Assets may not effectively identify strategic weaknesses (Arend, 2009).

Path-dependent resources such as reputation or trust-based relationships are complex for rivals to imitate due to the prolonged and consistent investments needed to create them (Arthur, 1989). However, if significant lapses in behaviour erode these resources, their path-dependent nature becomes a barrier to resuscitating them (Breton-Miller & Miller, 2015). Additionally, path-dependent resources, built upon positions of weakness or strengths, may also reduce the availability of strategic alternatives for the firm (Heine & Rindfleisch, 2013).

A resource's value is context-dependent (Barney, 1991; Conner, 1991; Barney, 2001a; Priem & Butler, 2001) and context dependency can make a resource uniquely valuable for a firm but also render it vulnerable to context changes (Breton-Miller & Miller, 2015; Efrat et al., 2018). Intriguingly, a weakness in one context could be an asset for another firm. The value of a resource is intricately tied to the strategy of the firm, its resource bundle, and how the firm executes its strategy and utilises its resources (Barney & Arikan, 2001; Hitt et al., 2001; Newbert, 2007). Nokia's decision to sell its rapidly declining handset (weakness) business to Microsoft to enhance its survival is a prime example of the dynamic nature of resources. Microsoft initially generated value by re-bundling Nokia's hardware with its resource strengths, including operating systems, marketing, competitive position, and distribution channels. However, Microsoft had to write off its investment in Nokia (Microsoft, 2015), highlighting that a resource may be a weakness when it does not apply to a potentially competitive situation (Ma, 2000). Furthermore, a firm's business model can determine the economic value of a resource. For instance, traditional airlines consider secondary airports a non-strategic resource, which could be a competitive advantage for low-cost airlines (Warner et al., 2013).

In summary, the Resource-Based View (RBV) emphasises the significance of resources as firm attributes that enable the implementation of strategies. The study employs 'resources' as a comprehensive term aligning with Penrose's conceptualisation of productive and administrative resources. The RBV identifies four broad resource categories, including strategic and non-strategic resources, resource weakness, and strategic liabilities. Valuable resources are the key to gaining a competitive advantage, while weaknesses can lead to a significant competitive disadvantage. Resource weakness can stem from various factors, including

environmental changes, organisational errors, and path dependency. The various isolating mechanisms of social complexity, causal ambiguity, path dependence, and context dependency work differently on resource weaknesses than strengths.

Section 2: Strategic Foresight

2.3 Introduction

RQ1a. To what extent does strategic foresight influence resource weakness identification and management?

RQ1b. What is the nature and impact of foresight under conditions of uncertainty?

Extending on the review of the RBV literature in Section 1 and explicitly addressing the above key questions, this section reviews the current knowledge on strategic foresight and nature and the impact of foresight on weakness identification and mitigation under conditions of uncertainty.

Firms navigate through decisions in an increasingly complex and interrelated ecosystem, often in the face of uncertainty. The impact of environmental changes on even the best-managed firms has been profound, sparking curiosity about the mechanisms at play. Prahalad & Hamel (1994) highlight the problems faced by some of the best-managed firms in the 90s (e.g., IBM, General Motors, Xerox, Philips, ICI, NEC, Fujitsu) in re-organising their resources in the face of external changes as they failed to systematically analyse, understand, and act to the changes in the industry structure and the competitive dynamics. When firms do not understand the environmental changes, they get trapped in their old interpretations of their environment, business, and industry structure until the impact of the environmental changes starts to reflect on their performance (McMaster, 1996). When firms fail to anticipate but realise what Ansoff termed as a 'strategic surprise' at the 'movement of truth' that their bottom line or indeed their survival itself is in danger, it might be too late as they are neither able to grasp the cause nor a response (Ansoff, 1975, p.22) as their resource base may be overwhelmed with weaknesses.

This section introduces the organisational environment (2.4) and the sources of environmental uncertainty (2.5), followed by an introduction to the dynamic capabilities framework (2.6). The key focus is on the strategic foresight literature, reviewing the role of strategic foresight in enabling firms to navigate uncertainties and highlighting the rationale for choosing strategic foresight as a critical tool in answering the research question (2.7). Section 2.8 presents a summary of the reviewed frameworks and their interrelationships, and section 2.9 presents an overview of the chapter.

2.4 Organisational Environment

The literature on strategic management and organisational theory highlights the critical role of the environment in firm performance. The literature on strategic management views the environment as the source of both opportunities and threats, influencing the organisational structure, internal processes, and managerial decision-making (Daft et al., 1988). These problematic and opportunistic relationships between the firm and its environment have been the focus of strategy scholars (Ansoff, 1975; Daft et al., 1988; Porter, 1994; Elenkov, 1997; Grant, 2003). Furthermore, the central tenet in strategic management is that firm performance is a function of the alignment (fit) between the firm's external environment, resources, and capabilities (Bourgeois, 1985).

'Strategic fit' refers to the degree to which a firm's resources and capabilities match the requirements of its external environment. Organisational success depends on the strategic fit between the threats and opportunities bestowed by the environment and an organisation's strengths and weaknesses that form its distinctive competence (Andrews, 1970). Such alignment comes from the strategic choices made by the firm ex-ante. Identifying the suitable resource set for the future is a significant challenge, and indeed, strategy literature posits the problem of strategy as a problem of addressing the economic values of the alternative ex-ante (Wernerfelt, 1984; Levinthal, 2018). Given their pivotal importance to the environment as a source of uncertainty, the concept of environment, its dimensions and layers are considered in the following section.

2.4.1 Components of the Organisational Environment

Dill (1958) and Duncan (1972) made an early attempt to clarify the concept of the environment, its components, and relevant dimensions. Dill's (1958) pioneering study defined the environment's components that influence a firm's actions. Dill distinguishes between the task and general environment based on the inputs from the environment section that influence managerial behaviours. The stimuli from that part of an organisation's environment might respond by developing cognitive formulations to help guide the firm, which Dill termed the 'task environment'. The task environment comprises customers, suppliers, competitors, and regulatory groups. The environment that indirectly affects the firm is called the general environment. They include social, political, economic, technological, legal, and environmental factors.

Duncan (1972) takes a holistic view of an organisation's environment by including the factors within the firm's boundaries to its environment. Duncan defines environment as those relevant physical and social factors (outside and inside the organisation's boundaries) considered in the strategic decision-making process. The internal environment includes personnel capabilities, functional characteristics, firm-level goals and objectives, products, and organisational processes.

The 'task environment' concept is further conceptualised by its closeness to the firm, "micro-environment (Porter, 1990; Grant, 2010). The industry environment is formed by the organisation's relationships with three players: its customers, suppliers, and competitors (Porter, 1994; Grant, 2010) and potential entrants, substitutes, and complementary products (Porter, 1994). Porter identified these six key elements, which he terms 'forces' that influence the ability of an organisation to achieve its goal or business strategy. Additionally, the environment has been classified as a series of 'layers' outside the organisational boundary and based on 'proximity' to the firm. The macro-environment forms the outermost layer. The industry or the task environment is further divided based on the interaction between actors that the firm regularly interacts with within the industry, i.e., its competitors and markets (customers and suppliers). This subdivision allows categorising the task or industry environment from the broader industry to areas within the industry where a firm might want to compete (Johnson et al., 2020).

Further classification of the environment is made based on how the firm perceives the environment. Bourgeois (1980) distinguishes between the environment's characteristics and how organisations perceive them by classifying the environment into its objective and perceived states. Bourgeois's categorisation of the environment centres on ontological and epistemological questions. The state of the environment as an 'objective' set of components outside the organisation may differ from how the firm 'perceives' those environmental factors. This distinction presents the environment from a realist (as objects that exist outside the firm) and subjectivist (how the firm perceives the environment from inside) perspectives. Though Dill and Duncan argue that any response, i.e., the firm's 'tasks' or the goals that it sets itself in response to the external stimuli, is based on how the organisations interpret the environmental input, their distinction is at an organisational level. In contrast, Bourgeois argues that these two states are different external environment classifications.

The resource dependency approach provides an alternative perspective in defining the environment. Dess and Beard (1984) divide the task environment into two elements. First is the environment where the firm engages in an indirect exchange of resources with elements like its customers and suppliers, and the second is the environment in which it competes for those resources that it directly exchanges. While the first set includes customers and suppliers (Dill, 1958; Duncan, 1972) and other organisations that benefit from cooperation with the focal firm, the second set comprises competitors who compete to exchange resources with the customers and suppliers of the focal firm.

While the strategic management literature looked at the fit between the environment and the firm in terms of industry structure and firm strategies, the literature on organisational theory viewed the fit in terms of environmental uncertainty and firm attributes of structure, goal, and decision-making process (Bourgeois, 1985).

The following section looks at the origins of environmental uncertainty to help understand how firms can identify resource weaknesses, which is the interest of this study.

2.5 Origins of Environmental Uncertainty

The constant state of flux in the environment makes it difficult to fully understand the future state of the environment and the information that firms should consider in present strategic decisions. While the firms' actions influence the external environment, the environment is more voluntaristic than deterministic. Hence, it is difficult for firms to understand the future state of the environment, creating uncertainty as the firm makes strategic choices in the present for its future. Hence, managing uncertainty is a significant challenge for organisations (Teece & Leih, 2016).

Within the organisation theory literature, there are two key streams of arguments in terms of the origins of strategic uncertainty. In the first school of thought, strategic uncertainty results from lacking information about the external environment (Duncan, 1972; Milliken, 1987; Daft et al., 1988). In the second, the resource dependence view, uncertainty arises due to the inability of the organisation to control the essential resources it needs to accomplish its goal (Child, 1972; Dess & Beard, 1984; Pfeffer & Salancik, 2003). The following sections expand on these two schools of thought on the sources of strategic uncertainty.

2.5.1 Information as a source of strategic uncertainty

Milliken (1987, p.136) defines *uncertainty* as "an individual's perceived inability to predict something accurately". Predicting problems could be due to the individual needing more relevant information to analyse and understand the situation or to discern between relevant and irrelevant data. However, a lack of knowledge may not necessarily be the source of the uncertainty. Uncertainty could also arise due to the inadequacy of knowledge, ambiguity, unreliability, and inability of the firm to interpret the available information (Walker et al., 2003), which are the firm’s weaknesses. Interestingly, the availability of additional information or the ability to process information more efficiently may also increase uncertainty (Walker et al., 2003; Wayland, 2015).

The gap in knowledge of the environment is a function of its complexity and dynamism (Vecchiato, 2012). The nature of the environment could be simple or complex, depending on the quality and quantity of information required by the firm in its decision-

making process. The environment could be static or dynamic based on the speed at which the decision-making process factors either remain the same or change over time (Duncan, 1972). The key indicators of environmental dynamism are the rate of change, absence of pattern and unpredictability (Dess & Beard, 1984). From a resource-dependence perspective, complexity rises as the number of inputs or outputs increases (Dess & Beard, 1984).

2.5.2 Lack of control over resources as a source of strategic uncertainty

Firms have a choice in choosing their environment, and the limits of an organisation's environment are a product of this choice. For example, a firm's decision on which product market it wants to compete in (its corporate strategy) and its relationship with its customers and suppliers determine the limits of its environment. Thus, an organisation can limit its exposure based on its resource strengths. Similarly, the firm's decision on the kind of relationship it has with other organisations or an imposed relationship by a more dominant firm draws the boundaries of that organisation. Hence, the critical determinant of uncertainty is not necessarily the environmental variables. However, it is the need for more control over resources that the firm requires to compete in the environment it chooses to operate in and the kind of relationship it has with its counterparts (Child, 1972). The resource dependence approach identifies a firm's internal environment as the resources controlled under its authority and territory and the firm's influence on the resources of other organisations (Child, 1972). An extension of this is that a firm's internal environment could also provide uncertainty (resource weakness) over which it has direct authority as well as from other organisations' resources when it either loses control over those resources or when the other firms' resources become a weakness.

However, both these streams of thought are integrative instead of mutually exclusive. Information leads to resource allocation, and information search is based on idiosyncratic resources. When the lack of information on the external environment and control over requisite resources interact, as Duncan (1972) finds, there are three key sources of environmental uncertainty.

1. The lack of environmental information required in the strategic decision-making process.

2. Lack of knowledge on the implication to the organisation for a given response option
3. Inability to ascertain/ perceive the probability of the organisation's or business unit's success or failure.

Considering the critical role of a firm's resource bundle in enabling 'Strategic fit,' the following section reviews the critical frameworks within the literature that explain how firms maintain a supple resource base and identify a suitable resource set for the future under conditions of uncertainty. The dynamic capabilities framework in the strategic management literature explains how firms can maintain a strategic fit with their environment. Aside from the management literature, strategic foresight is prescribed as an organisational process to navigate uncertainties and enable fit. The following sections will discuss these two key frameworks and offer the rationale for using strategic foresight as the chosen framework for this study.

2.6 Dynamic Capabilities

While the RBV framework could be applied to identify sources of competitive advantage, the approach is static and does not explain sources of sustainable performance (Eisenhardt & Martin, 2000; Priem & Butler, 2001; Augier & Teece, 2008). The concept of dynamic capabilities (Teece et al., 1997), firmly rooted in strategy (Schilke et al., 2018), extends the RBV to dynamic markets (Eisenhardt & Martin, 2000; Helfat & Peteraf, 2003; Peteraf et al., 2013). The study of dynamic capabilities aims to unravel how certain firms gain and sustain competitive advantage over time, particularly in complex and dynamic environments (Teece, 1994).

While ordinary or operational capabilities enable a firm to deliver performance by exploiting its current resources, firms require higher-order capabilities that can 'extend, modify and create ordinary capabilities (Winter (2003, p.991). In their seminal article, Teece et al. (1997, p. 516) argued that the firm's ability to "integrate, build, and reconfigure internal and external competences to address rapidly changing environments" is its dynamic capabilities. Later, Teece (2007) further clarified the firm's ability to sense, seize and exploit current and future opportunities *while minimising threats* as its dynamic capabilities.

Eisenhardt and Martin (2000, p.1107), taking a different conceptual viewpoint, define dynamic capabilities as the "organisational and strategic routines" through which firms understand and "achieve new resource configurations as markets emerge, collide, split, evolve and die". Unlike Teece et al. (1997), Eisenhardt and Martin (2000) decouple dynamic capabilities and performance. Their definition of dynamic capabilities focuses on resource manipulation and not on the performance outcome of the new resource configuration. In doing this, they overcome the often-cited criticism of the RBV as tautological.

The effectiveness of Dynamic capabilities depends on environmental dynamism. In moderately dynamic environments, dynamic capabilities rely on existing knowledge. On the other hand, in high-velocity industries, the future state of the market becomes unpredictable, and existing knowledge is unreliable and could even be a disadvantage. In such conditions, the newly gained knowledge that the firm may yet fully commit to informs its development of dynamic capabilities. Hence, such capabilities are not routinised by organisational behaviour.

Further, Eisenhardt and Martin (2000, p. 1108) clarify that the capabilities to "gain and release" resources enable the firm to create value-creating strategies as dynamic capabilities. Indeed, they argue that dynamic capabilities enable the firm to "release" resources, an often-neglected area in the literature. Hence, a key feature of dynamic capabilities is that they enable the firm to engage in strategic change systematically (Schilke et al., 2018).

Zott (2002) argue that there is an ‘emerging consensus’ within the literature that dynamic capabilities not only enable the firm to create, extend and modify its resource bundle (p.100) but the resulting resource configuration becomes a source of performance improvements (Helfat & Winter, 2011; Ambrosini & Bowman, 2009) though the "functionality of dynamic capabilities" could be imitated by other firms (Eisenhardt & Martin, 2000, p. 1106). From a resource dimension point of view, the new resource bundle should have resources with VIRO characteristics to enhance performance. The resource bundle should also have fewer weaknesses to enhance the resource strength dimension, as deleting degenerating resources is equally crucial as resource accumulation (Simon & Hitt, 2003). The capabilities to identify and release or convert resources that may not produce a positive outcome in the future are

dynamic. Eisenhardt & Martin (2000) acknowledge that the literature often needs to focus more on identifying and removing resources that no longer contribute to competitive advantage as a crucial dynamic capability.

The following section considers the role of strategic foresight in addressing environmental uncertainty.

2.7 Strategic Foresight

> "Strategic foresight is central to strategy and yet a divisive one."
> (Gavetti & Menon, 2016, p.227).

Within the foresight literature, environmental uncertainty stems from the inability of organisations to form mental representations of the future. The central tenet of foresight is that the future is unpredictable, but through systematic analysis, firms can systematically prepare for the future. Strategic foresight (corporate foresight/organisational foresight) is a collaborative process that explains how firms understand and respond to future environmental uncertainty (Paliokaite et al., 2014; Rohrbeck et al., 2015). Slaughter (1996), highlighting the critical role of foresight, states that the strategic foresight process enables firms to widen their ontological perceptions by assessing the consequences of current actions, detecting and avoiding problems before they occur, considering the present implications of probable future events and envisioning aspects of desired futures.

The literature offers multiple terms and definitions for the construct of foresight, but there are no commonly accepted terms or definitions (Baskarada et al., 2016; Tapinos & Pyper, 2018). Table 2.1 presents a selection of crucial definitions of strategic foresight, and the following section synthesises these definitions.

Author/s (Year)	Foresight Definition table	Construct
Hamel & Prahalad, (1994, p.128)	*"Industry foresight is based on deep insights into trends in technology, demographics, regulations, and lifestyles, which can be harnessed to rewrite industry rules and create new competitive space."*	Organisational capability
Slaughter, (1995, p.1)	*"Foresight is not the ability to predict the future... it is a human attribute that allows us to weigh the pros and cons, to evaluate different courses of action and to invent possible futures on every level with enough reality and meaning to use them as decision-making aids."*	Human capacity
Slaughter, (1997, p.13)	*"Strategic Foresight is the ability to create and maintain a high-quality, coherent and functional forward view and to use the insights arising in organisationally useful ways; for example: to detect adverse conditions, guide policy, shape strategy and to explore new markets, products and services."*	Organisational capability
Becker, (2002, p.7)	*"Foresight should be understood as a participatory, future intelligence gathering and medium-to-long-term vision-building process that systematically attempts to look into the future of science, the economy and society in order to support present-day decision-making and to mobilise join forces to realise them".*	Organisational process
Tsoukas & Shepherd, (2004, p.137)	*"Foresight marks the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events".*	Organisational capability
Tsoukas & Shepherd, (2004, p.140)	"*Organisational Foresight is […] the organisational ability to read the environment – to observe, to perceive – to spot subtle differences."*	Organisational capability
Ahuja et al., (2005, p.792)	*"Managerial foresight is the ability to predict how managers' actions can create a competitive advantage."*	Managerial capability
Paliokaite et al., (2014, p.165)	Strategic foresight is a set of capabilities *"that enable organisations to cope with the future".*	Organisational capabilities
Rohrbeck et al., (2015, p.2)	*'Corporate foresight permits an organisation to lay the foundation for future competitive advantage. Corporate foresight identifies, observes, and interprets factors that induce change, determines possible organisation-specific implications, and triggers appropriate organisational responses. Corporate foresight involves multiple stakeholders and creates value through providing access to critical resources ahead of the competition, preparing the organisation for change, and permitting the organisation to steer proactively towards a desired future".*	Organisational process
Paliokaite & Pacesa, (2015, p.167)	*"Organisational foresight is defined as an ability that includes structural and cultural capabilities enabling the firm to detect discontinuous change early, interpret the consequences for the firm and formulate effective responses while at the same time maintaining a coherent and functional forward view".*	Organisational capability

Vecchiato, (2015, p.26)	*"We define strategic foresight as the set of techniques, practices, and processes organisations use to detect new events and changes in their external environment, explore their evolution and effects, and define response options".*	Organisational process
Gaspar, (2015, p.406)	*"I define strategic foresight as a perspective, a systemic mode of thinking and a series of activities which is based on the appreciation of the characteristics, abilities, behaviour patterns and status and room to manoeuvre in the social medium; in other words, as those thoughts and actions that prove to be insightful".*	Cognitive ability
Piirainen & Gonzalez, (2015, p.192)	"*Foresight is 1) An organised social process, an intervention (in an organisation), and 2) to create actionable and domain/context-specific information or knowledge about the future".*	Social process
Gavetti & Menon, (2016, p.207)	Strategic foresight is "*The ability of a strategist to identify a superior course of action, especially one that is markedly different from the status quo, and foresee its consequences".*	Organisational capability
Tapinos & Pyper, (2018, p.292)	*"The process of anticipating the future".*	Organisational process
Gordon et al. (2020, p.1)	*"We define corporate and organisational foresight as the application of futures and foresight practices by an organisation to advance itself; that is, to fulfil its purpose and achieve success on whatever terms it defines as success".*	Organisational process
Fergnani, (2020, p.820)	*"Corporate foresight is a dynamic, firm-level capability that allows firms to evaluate and grow prepared for several probable future scenarios of the business environment, including systematic doomsday collapses".*	(future)Dynamic capability

Table 2.1: Key Definitions of Strategic Foresight from the literature

The literature broadly defines *foresight* in terms of capability and as a process. Scholars conceptualise foresight as a human capacity (Slaughter, 1995; 1997), as a managerial capability (Ahuja et al., 2005), cognitive capability (Gaspar, 2015), as an organisational capability (Hamel & Prahalad, 1994; Tsoukas & Shepherd, 2004; Paliokaite et al., 2014; Gavetti & Menon, 2016), as an organisational process (Becker, 2002; MacKay & Constanzo, 2009; Rohrbeck et al., 2015; Vecchiato, 2015; Tapinos & Pyper, 2018; Schwarz et al., 2019; Gordon et al., 2020), social process (Piirainen & Gonzalez, 2015) and more recently as dynamic future-orientated capability (Fergnani, 2020). Some scholars describe foresight as a collection of methods (Popper, 2008; Baskarada et al., 2016).

As a capability, foresight is a crucial individual and organisational capability that plays a significant role in decision-making under uncertainty. At an individual level, it involves envisioning potential futures and assessing the advantages and disadvantages of various actions (Slaughter, 1995). From an organisational standpoint, foresight is the manager's ability to anticipate how their decisions can lead to a competitive edge (Ahuja et al., 2005; Tapinos & Pyper, 2018). At a firm level, scholars conceptualise foresight as a 'future-oriented firm capability' (Fergnani, 2020, p. 15) or a set of capabilities that enable the organisation to cope with the future, particularly in the face of changes (Paliokaite et al., 2014), an organisation's ability to predict events and enable firms to cope with future changes (D'Aveni, 1994). Tsoukas and Shepherd (2004, p. 137) state that for firms to engage in foresight activities, they require a set of capabilities that will enable them to observe and interpret the environment and spot subtle differences, '*see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events*'. In doing so, foresight capabilities should help the organisation identify the best course of action, especially one different from the current course, and foresee the consequences of any actions (Gavetti & Menon, 2016; Vecchiato, 2015; Schwarz et al., 2019).

However, a growing number of scholars argue that strategic foresight is not an ability to perceive a particular beneficial future but an organisational process (Horton, 1999; Voros, 2003; Popper, 2008; Heger & Rohrbeck, 2012; Vuori, 2015; Piirainen & Gonzalez, 2015; Schwarz et al., 2019; Gordon et al., 2020). A process that takes a

subjectivist approach is ontologically plural, identifying multiple futures based on different meanings and how people construct the future from their interpretation (Vuori, 2015; Scoblic, 2020).

Piirainen and Gonzalez (2015, p.192) identify two critical components of the foresight process: "an organised social process; an intervention in an organisation and to create actionable and context-specific information or knowledge about the future". Foresight can also be a future intelligence-gathering and vision-building organisational process that systematically analyses the environment to support the organisation's present-day decision-making (Becker, 2002). By helping the firm anticipate its future (Tsoukas & Sheppard, 2004; MacKay & Constanzo, 2009) and laying the foundation for future competitive advantage (Rohrbeck et al., 2015), foresight enables the firm to identify and adopt new courses of action that are markedly different from competitors leading to heterogeneous resource base (Schwarz et al., 2019). Foresight could also be a social participative process involving members of one or more organisations (Miles et al., 2008).

Synthesising the foresight literature, Piirainen et al. (2014) highlight the transformative effects of foresight using their 5 Cs' model. They argue that foresight as a social process facilitates organisational members to analyse the present and articulate their views about the future (*communication*). Foresight enables social learning, reviews organisational members' views of the future and supports consensus. The social learning process changes the members' mental models, fostering behavioural changes and getting *commitment.* The collaborative process, a key component of foresight, leads to a more or less joint-constructed view of the future, fostering a sense of unity and shared purpose. This *consensus*, in turn, paves the way for *coordination and* alignment, ensuring that new actions and initiatives are collective. Such goal *congruence* and strategic alignments enable the c*oncentration and commitment* of the organisational members to pool resources in strategically crucial areas to develop structures to support their strategy. Piirainen et al. (2014) review highlights the critical role of strategic foresight in supporting organisational learning and managerial cognition. Indeed, foresight literature identifies a firm's inability to form mental representations of the future due to its bounded rationality as the primary source of uncertainty (Vecchiato, 2012; Kim, 2012; Gavetti & Menon, 2016; Schoemaker, 2018).

Following the discussions in this chapter, there are three critical reasons for proposing strategic foresight as an essential theoretical framework in this research to understand how firms identify and mitigate resource weaknesses:

1. The literature highlights the positive role of foresight in enhancing managerial cognitive capacity (e.g., Gaspar, 2015; Piirainen et al., 2014; Helfat & Peteraf, 2015).
2. As a participatory social process, foresight helps to develop a shared mental model and emotional capacity for change (e.g., Durand, 2009; Priem & Cycyota, 2001; Rohrbeck et al., 2015; Scoblic, 2020)
3. By challenging the ontological position, foresight helps in organisational thinking about the future in a plural and less knowable way, thus developing a more flexible mental model (e.g., Slaughter, 2002; Schoemaker, 2002; Tsoukas & Shepard, 2009; Rohrbeck & Schwarz, 2013 and Scoblic, 2020).

The following section develops on these notions.

2.8 Strategic Foresight and Managerial Cognition

"*The extent to which managers are boundedly rational and under what particular circumstances they can be expected to deviate from full rationality would benefit from greater explanation*" (Schilke et al., 2018, p.413)

Managerial cognition, the perspective through which a manager comprehends and interprets the world (Tripsas & Gavetti, 2000), is a collective force that shapes a firm's strategic insight (Yorks & Nicolaides, 2012). This concept underscores the crucial role of individual and group cognition in shaping perception and influencing decision-making (Hodgkinson & Clarke, 2007). Yorks and Nicolaides (2012) assert that managerial cognition acts as a bridge, connecting the firm's resources with its environment. In the face of uncertainty, firms rely on the available evidence but also managerial cognition, engaging in 'judicious and systematic reliance' on the knowledge of experts and leaders' judgement to navigate uncertainty (Helmer & Rescher, 1959, p.39) and anticipate the future (Teece & Leih, 2016). However, a manager's bounded rationality limits the amount of information they can process, retain and access at a given time. Under these conditions, their decisions are

satisfactory in their perspective but achieve suboptimal outcomes (Johnson & Hoopes, 2003).

The behavioural theory offers insights on bounded rationality that posits firms as inherently myopic (Levinthal & March 1993), and their bounded rationality limits their ability to interpret uncertainty (Cyert & March 1963). Boundedly rational managers will seek solutions within their cognitive bounds rather than exploring higher-level cognition (Gavetti & Levinthal, 2000; Levinthal, 2018). Bounded rational firms avoid uncertainty by not engaging in distant foresight, which is considered impossible and not worthwhile (Eisenhardt & Martin, 2000). Limiting bounded rationality and enhancing cognition aids in developing 'actionable knowledge' (Priem et al., 2013, p.471), while imperfect cognition may lead to errors in judgment (Levinthal, 2018). Indeed, identifying threats and weaknesses necessitates enhanced cognition to support managerial judgements (Milliken, 1987).

Literature on dynamic capabilities also highlights the critical role of managerial cognition. Helfat and Peteraf (2015) examined how 'managerial cognitive capability' could contribute to the firm's sensing, seizing and reconfiguring capabilities. They argue that managerial cognition differences lead to firm resource heterogeneity. Limitations to managerial cognition could lead to inattention, resulting in firms missing essential developments due to limited peripheral vision, shortage of time, misguided priorities, or unconscious avoidance of problems (Schoemaker, 2019). Additionally, firms may regret not being able to identify potential problems within the firm earlier (Schilke et al., 2018; Augier & Teece, 2008; 2009).

In recent years, a growing body of research within the foresight literature has highlighted the pivotal role of strategic foresight in tackling bounded rationality and bolstering the development of dynamic capabilities. Notably, Rohrbeck and Schwarz (2013), Heger and Boman (2015), Vechatio (2015) and Haarhaus and Liening (2020) underscore the valuable contributions from the strategic foresight process and discuss how foresight activities contribute to the sensing, seizing, and resource reconfiguration routines identified within the dynamic capabilities framework.

Rohrbeck and Schwarz (2013) reviewed the managerial and organisational cognitive capacity provided by the foresight processes and identified that learning from foresight activities acts as a catalyst for dynamic capabilities. Their study on 77 large multinational firms reveals that strategic foresight practices empower firms to create and capture value through their ability to enhance their capacity to perceive change, increase their capacity to interpret and respond to change, enhance organisational learning capacity, and influence the key stakeholders to take a long-term view of the firm. They conclude that by instilling a perception of change, uncertainty, and ways to respond, foresight activities develop the emotional capacity the firm needs to recognise and implement change collectively, as illustrated in Figure 2.1.

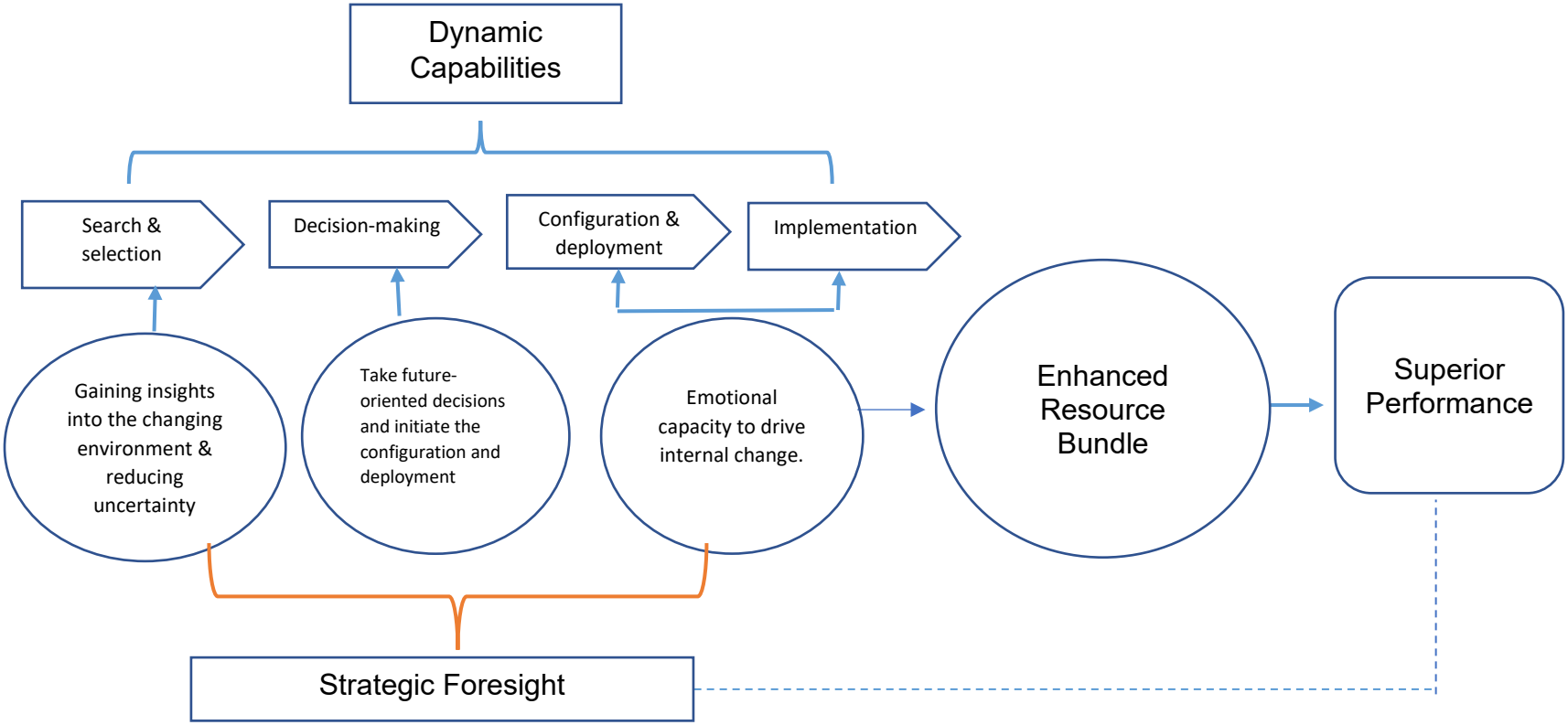

Figure 2.1: Value Contributions from Strategic Foresight to Dynamic Capabilities

Source: Adapted from Helfat et al. (2009) and Rohrbeck & Schwarz (2013)

Similarly, Vecchiato (2015) explores the dynamic capabilities and foresight routines, emphasising the role of foresight in creating a competitive advantage. Foresight exercises systematically attempt to peer into the future, informing the firm about environmental shifts, the likely trajectory of external changes, and the various response options. They argue that this learning from strategic foresight activities forms the microfoundation for the capacities to sense, seize, and reconfigure the dynamic capabilities identified by Teece et al. (1997), as illustrated in Figure 2.2. By doing so, foresight enables the firm to gain a competitive advantage (Hamel &Prahalad, 1994) and create a mover advantage (Vecchiato, 2015) by identifying opportunities in changing markets (Barney et al., 2011). Additionally, Haarhaus and Liening (2020) find a significant positive impact of strategic foresight on a firm's strategic flexibility and decision rationality. Schwarz et al. (2018) also highlight that organisational foresight training and practices positively correlate with the firms' dynamic capabilities outcomes.

The above studies' research findings underscore the crucial role of foresight in shaping managerial behaviour. By mitigating the effects of bounded rationality on managers, strategic foresight can significantly enhance a firm's dynamic capabilities (Schwarz et al., 2018). Gavetti and Menon (2016) further exemplify the significance through their study of Charles Merrill's financial supermarket business model, demonstrating how strategic foresight can help organisational members transcend their cognitive limitations. Indeed, a key argument for strategic foresight is that it enables firms to extend their ontological boundaries (Wayland, 2015).

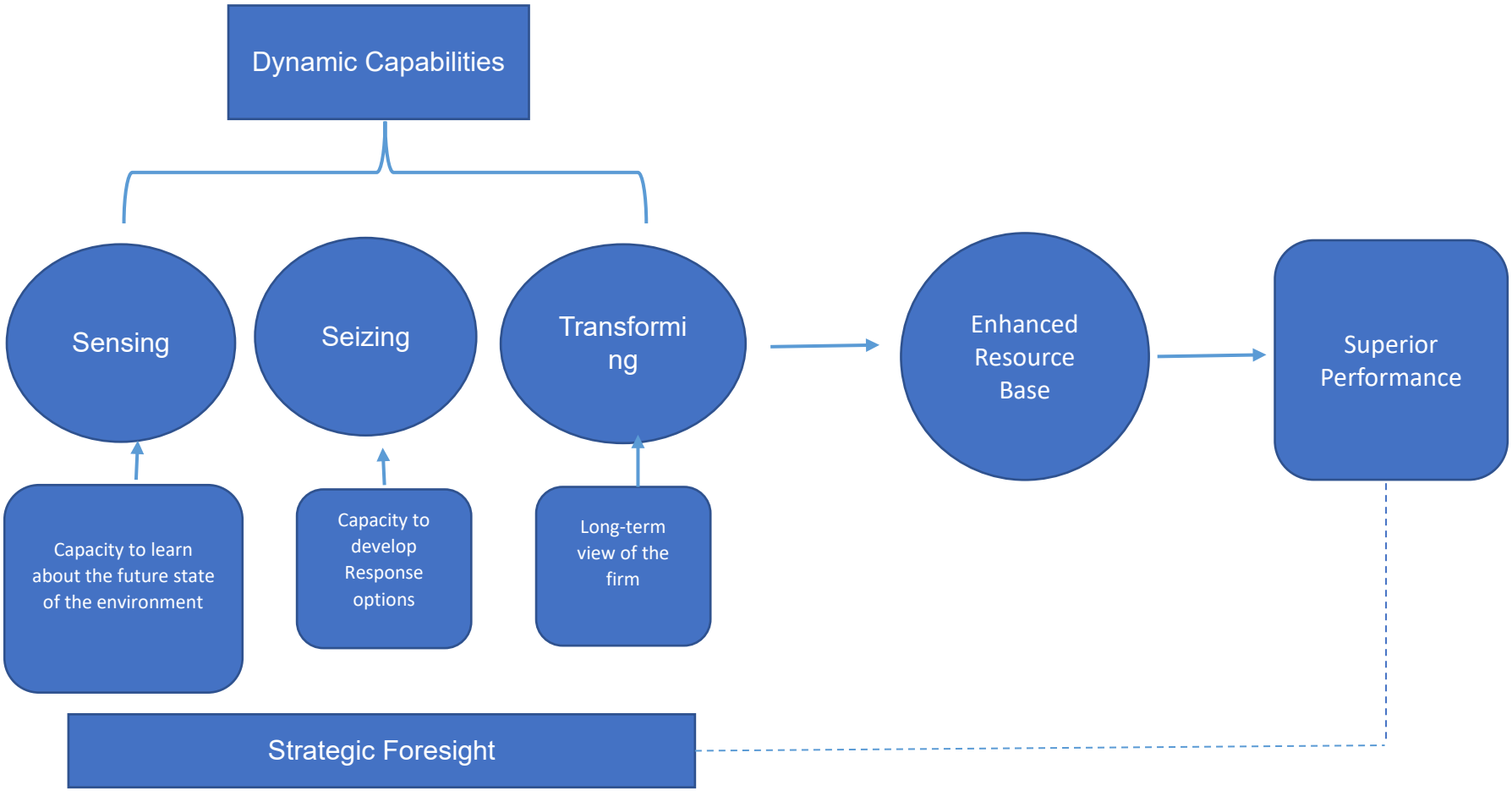

Figure 2.2: Value Contributions from Strategic Foresight to Dynamic Capabilities

Source: Adapted from Teece et al. (2007); Vecchiato (2015)

2.9 Strategic Foresight and Flexible Mental Models

A mental model or a schema is a 'cognitive structure representing organised knowledge about a given concept' (Danneels, 2010, p.21). These mental models act as a simplified mental map of all conceivable courses of action for a firm and the possibilities of their outcomes that are compatible with what they know or believe (Gavetti & Menon, 2016). By simplifying decision-making, mental models enable managers to navigate complex situations more efficiently and effectively. Managers construct these belief structures to simplify their representations of their work and decision-making, guide them in making sense of the environment, draw inferences (Danneels, 2010), and provide a cognitive representation of the strategic problem (Gavetti & Menon, 2016). Mental Models provide individuals and organisations with a way of managing and understanding complex phenomena. However, the crucial role of strategic foresight is to challenge and renew these mental models in light of dynamic environmental conditions (Rhisiart et al., 2015), enhancing adaptability.

Hamel and Prahalad (1994) argue that foresight activities are valuable for firms to develop deep insights into their ecosystem. The foresight process can induce learning and challenge existing mental models (Slaughter, 2002; Schoemaker, 2002; Tsoukas & Shepard, 2009; Rohrbeck & Schwarz, 2013), improving adaptability by enabling firms to consider alternative futures (Scoblic, 2020). Thus, firms can better position themselves, realign industry rules, and create new markets (Hamel & Prahalad, 1994).

The critical role of the strategic foresight process is not about perceiving a particular, beneficial future (Gavetti & Menon, 2016) but about thinking about the future to better sense, shape, and adapt to emerging events (e.g., Wack, 1985; van der Heijden, 1996; Slaughter, 2002; Tsoukas & Shepard, 2009; Rohrbeck et al., 2015; Schwartz et al., 2019) which is the essence of strategic foresight. Indeed, Vecchiato (2015, p.26) argues that strategic foresight is a process of “planned learning” about the future.

By doing so, scholars argue that foresight helps firms to identify discontinuous changes early, interpret weak signals, identify the implications for the firm and develop effective responses (Rohrbeck, 2010; Paliokaite & Pacesa, 2015) provide an opportunity to see through ambiguity, spot developments and patterns before they

become unambiguous (Tsoukas & Shepherd, 2004) and interpret the consequences for the firm. Hence, foresight activities support boundedly rational managers in minimising their myopic view of the present and the future by extending their cognition beyond their ontological and epistemological boundaries (Wayland, 2015). In doing so, firms can "penetrate and transgress established boundaries and seize the opportunities otherwise overlooked by others" (Sarpong & Maclean, 2016, p. 2813) and prepare an organisation for change and respond effectively to changes in the future (Vecchiato, 2015). Scoblic (2020) argues that by treating the future as plural and less knowable, managers can become more sensitive to changes in the present, reduce overconfidence in specific courses of action, and render mental models more flexible, thereby improving adaptability to whatever the future manifests.

Sensing capabilities generally exercise the cognitive skills associated with sensing and sensemaking that can benefit any organisation (Teece & Leih, 2016). A firm's dynamic capabilities may hurt performance if the DC develops a resource base that is not aligned with the external environment (Ambrosini et al., 2009). In other words, DC may develop resource weaknesses instead of reducing them within the resource bundle. Hence, a manager's perception of the environmental change may lead to inappropriate diagnosis. Moreover, it may not help the firm to identify and deploy the right resources to support its dynamic capabilities (Slobic, 2020). As an organisational process, strategic foresight significantly improves managerial mental models and judgement under uncertainty. By considering multiple futures, the foresight process challenges any premature decision to settle for a solution, thereby enhancing the quality of decision-making (Slobic, 2020).

2.10 Strategic Foresight as a Participatory Social Process

While dynamic capabilities are higher-order firm-level capabilities, foresight exercises are both at an organisational and individual level. Moreover, as a participative social process, foresight can involve multiple organisation members or various organisations. Emphasising the collaborative nature of foresight exercises, it becomes evident that this participatory, vision-building exercise engages various stakeholders. This collaborative aspect is crucial, fostering intelligence gathering, information dissemination, and, importantly, buy-in from organisational members (being change-

ready). Foresight activities, like scenario planning involving personal interactions, can significantly enhance organisational and individual learning and challenge existing mental models (Rohrbeck & Schwarz, 2013; Rhisiart et al., 2015). They help develop shared mental images and build emotional capacity that acts as a driving force in resource reconfiguration processes. The shared understanding of the situation makes decision-making possible and urges timely action (Van der Heijden, 2005).

Unlike dynamic capabilities, which focus on building strategic resources to sustain competitive advantage, thus diverting managerial attention from more powerful competitive mechanisms (Rohrbeck et al., 2015), strategic foresight processes equip managers with the ability to make informed decisions in the face of uncertainty, thereby enhancing their strategic capabilities and instilling confidence in their ability to navigate future challenges. Paliokaite and Pacesa's (2015) study revealed that foresight activities not only enable organisations to look beyond their value network or industry to identify opportunities but also hold the potential to significantly transform and renew the organisation, leading to tangible and positive changes that can reshape the organisation's future.

Though several scholars highlight the usefulness of the foresight process in reducing bounded rationality in the foresight literature, Gavetti and Menon (2016) argue that managers cannot anticipate the future consequences of actions from an 'evolutionary view' of foresight due to their bounded rationality, complexity, and dynamic competitive situations. Hence, the argument is that understanding the future through strategic foresight is futile, and firms need to be “preadapted” to take advantage of the opportunities in the market space (Gavetti & Menon, 2016, p.229).

Additionally, an acceptable theory of foresight still needs to be improved. Vecchiato (2015) states that this shortcoming is one of the critical reasons management scholars have yet to accept the strategic foresight construct entirely and have raised scepticism about the effectiveness of the contributions of foresight. Foresight literature recognises this limitation and identifies attempts to develop a theory of foresight (Hideg, 2007; Oner, 2010; Marien, 2010; Piirainen & Gonzales, 2015). Wayland (2015) points out critical reasons for foresight's lack of a theory and the complexities of advancing the field. She writes, "In the field of strategic foresight, the challenges extend in multiple

directions: the uncertain nature of change makes it difficult to accomplish the task of strategic foresight, and the complexities of the task make it harder to develop the field" *(Wayland, 2015, p.445).*

Scholars acknowledge the limitations of developing foresight. Indeed, Wayland is reiterating Whitehead's (1939) insight that a theory of foresight is impossible. This limitation poses a big challenge for foresight scholars. However, as underscored in the first chapter, academics and managers find foresight exercises highly relevant in practice. Managers adopt a pragmatic approach to understanding and resolving organisational issues, focusing on utility rather than theoretical underpinnings. The literature highlights that foresight praxis is driven solely by practical needs, even without a theory (Hideg, 2007).

2.11 Theoretical Relationship between the RBV, Dynamic Capabilities and Strategic Foresight

The following section summarises the literature review and presents the theoretical relationship between RBV, Dynamic Capabilities, and Strategic Foresight, as shown in Figure 2.3.

The management and RBV literature highlight that firms need foresight to identify future requirements (Coase, 1937; Barney, 1986a; Hamel & Prahalad, 1994; Ahuja et al., 2005). However, one of the main criticisms of the RBV is its inability to prescribe how firms can modify their resource base in a dynamic environment. The Dynamic Capabilities framework addresses the gap by theorising that firms use higher-order capabilities (DC) to make purposeful changes to the firm's resource base (Teece et al., (1997); Eisenhardt & Martin (2000); Helfat et al., (2007); Ambrosini et al., (2009); Schilke et al., (2018).

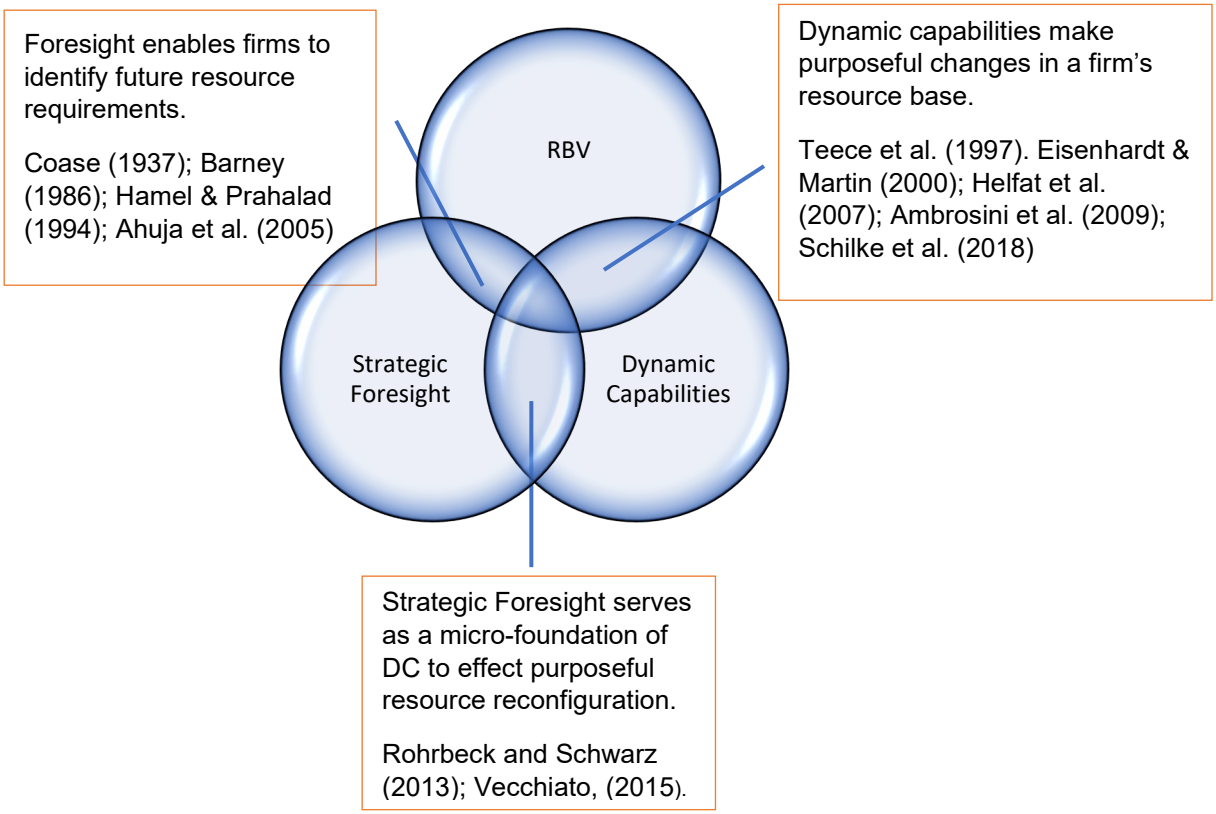

Figure 2.3: Theoretical relationship between the RBV, Dynamic Capabilities and Strategic Foresight

Foresight literature highlights the critical role of foresight in improving managerial cognition and developing flexible mental models through a pluralistic view of the future. By doing so, foresight enhances the firm's sensing, seizing, and transforming capabilities. Rohrbeck and Schwarz (2013) and Vecchiato (2015) have conceptualised that strategic foresight is a micro-foundation of the firm's dynamic capabilities by effecting purposeful resource reconfiguration.

2.12 Chapter Summary and Key Observations

This chapter synthesises the current literature on the resource-based view, dynamic capabilities, environmental uncertainty, and strategic foresight to draw the theoretical framework for this study.

The Resource-Based View (RBV) is a leading framework for explaining the sources of competitive advantage and superior performance. The central premise of the RBV is that competitive advantage and superior performance result in the ownership of firm-specific resources that are valuable, unique, inimitable, and non-substitutable. Identifying the characteristics of strategic resources and their influence on performance has been a critical task for strategy scholars. Scholars have predominantly focused on resource strength dimensions and excluded resource weakness and distinctive inadequacies as a noteworthy inclusion in explaining firm performance.

The Dynamic Capabilities literature focuses on how firms can develop capabilities to adapt to changing environments. Dynamic Capabilities are the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. The Dynamic Capabilities perspective complements the Resource-Based View, focusing on how firms can develop capabilities to adapt to a changing environment.

The literature on strategic management and organisational theory highlights the critical role of the environment in firm performance. Dill (1958) distinguished between the task and general environment, while Duncan (1972) provided a holistic view of an organisation's environment by including the factors within the firm's boundaries to its environment. Bourgeois (1980) further classified the environment based on how the firm perceives the environment and distinguished between the environment's objective and perceived states. Environmental changes have impacted even some of the best-managed firms. Prahalad & Hamel (1994) highlight the problems faced by some of the best-managed firms in the 90s in re-organising their resources in the face of external changes as they failed to systematically analyse, understand, and act to the changes in the industry structure and the competitive dynamics. When firms fail to understand

the environmental changes, they get trapped in their old interpretations of their environment, business, and industry structure until the impact of the environmental changes starts to reflect on their performance.

The Strategic Foresight literature highlights the importance of anticipating and responding to changes in the external environment. It shows that strategic foresight plays a critical role in a firm's success, and it is essential to understand the intricacies of a firm's environment to make informed strategic choices. Literature highlights that firms that engage in strategic foresight are better equipped to deal with uncertainty and change and are more likely to make informed strategic choices that align with their resources and capabilities.

Chapter 3: Methodology

3.1 Introduction

How do we investigate strategic foresight's role in identifying and mitigating resource weaknesses?

With its unique approach, this research brings together two distinct yet mutually integrated literatures to explore the role of foresight in identifying organisational resource weaknesses. The chapter starts with an explanation of the limitations of strategic foresight as a theoretical construct and the significant influence of my industry experience on the methodological approach and the philosophical consideration, respectively (3.1). Section 3.2 introduces Pragmatism and further explains the rationale and justification for the research's philosophical position. Section 3.3 describes the research methodology, including the choice of qualitative and the Gioia Methodology as a mechanism of theory building for this exploratory research. The research design, including a discussion on the data collection instrument and sampling strategy, including the pilot study, is presented in section 4.4, followed by a discussion on how the research meets the validity, credibility and transferability requirements (3.5) and ethical considerations (3.6). Section 3.7 explains how the data is analysed using the Braun and Clarke (2006) six phases of the thematic analysis procedure, and the chapter concludes with a summary (3.8).

One of the critical issues in studying foresight is the lack of a foresight theory (Hideg, 2007; Oner, 2010; Marien, 2010; Pirainen & Gonzales, 2015), as foresight studies are not a precise science (Helmer & Rescher, 1959; Gavetti & Menon, 2016). Foresight differs from science in that "foresight requires …. due emphasis on the relevant facts from which the future is to emerge", making identifying the relevant facts more difficult (Whitehead, 1939, p.111). As a social science, we cannot model and predict the future (Helmer & Rescher, 1959), though Gavetti and Menon (2016) argue that strategic foresight is replicable within certain precise boundaries. This lack of a theory of foresight makes it challenging to generate testable hypotheses and produce knowledge on strategic foresight (Scoblic, 2020). The challenge for this research is whether we should renounce foresight studies due to this limitation or take a different

ontological approach to understand the role of foresight in identifying resource weaknesses.

In line with Helmer and Rescher (1959), Priem et al. (2013), and Teece and Leih (2016), this study considers future studies in an inexact science. However, firms can supplement evidence with insight and rely on the knowledge of experts and leaders' judgement to navigate uncertainty and gain insights about the future. As Helmer and Rescher (1959, p.45) state, though the firm cannot predict the future, it can identify the significant "branch points" of the future, and expert managers will be able to “provide personal probabilities conditionally” on the success of a particular course of action.

Grounded in the assumption that the outcomes of the strategic foresight process cannot be tested and yet firms find practical relevance in undertaking foresight exercises, the methodological aim of this research is to explore to what extent foresight enables firms to identify and mitigate resource weaknesses. Philosophically, I adopt a pragmatic view as the approach is the best for this research for two key reasons. While there are different pragmatic positions, this study's philosophical position aligns with the work of Rorty (1999), which offers two key advantages. First, as a deconstructive paradigm, pragmatism 'sidesteps the contentious issues of truth and reality, accepts, philosophically, that there are singular and multiple realities (Feilzer, 2010, p. 8) and focuses on the principle of 'what is workable' (Cherryholmes, 1992, p.15) and 'orients itself toward solving practical problems in the real world' (Feilzer, 2010, p. 8), with a 'desire to produce useful and actional knowledge' (Kelly & Cordeiro, 2020, p.3) to solve organisational problems. Secondly, pragmatism allows researchers to address a research question best using the best and most appropriate tool (Wicks & Freeman, 1998).

Additionally, having worked in the industry for several years before moving to academia, I consider myself a pragmatist. When in the industry, what matters most is a relevant solution to a given problem. Managers are not myopic in how they would like to solve a problem. In academic language, they are not shackled by any epistemology. For them, what works best is what matters.

The following section expands on the rationale for adopting pragmatism as the philosophical position for this study.

3.2 Pragmatism

Pragmatism originated in the United States and is the foundation for Social Constructivism (Hastings, 2002). Peirce, James, and Dewey are considered 'classical pragmatists. Over the years, pragmatism has taken different approaches with 'distinct points of emphasis, interpretations, and reinterpretations' (Cherryholmes, 1992, p.13). For example, Peirce's approach to pragmatism is within the realm of scientific inquiry. However, James views pragmatism as an epistemological stance that aligns with human (researcher) values while rooted in empirical facts.

Cherryholmes, adopting James's view, writes.

> *"Research in a pragmatic tradition seeks to clarify meanings and consider consequences. For pragmatists, values and visions of human action and interaction precede a search for descriptions, theories, explanations, and narratives. Anticipated consequences drive pragmatic research. Pragmatic choices about what to research and how to do it are conditioned by where we want to go in the broadest of senses. Values, aesthetics, politics, and social and normative preferences are integral to pragmatic research, its interpretation and utilisation*" (Cherryholmes, 1992, p. 13).

While there are different pragmatic positions, my philosophical position aligns with the work of Rorty (1999). For Rorty, pragmatism, by converging qualitative and quantitative approaches, subjective and objective inquiry aims to produce knowledge that best corresponds to or represents reality (Rorty, 1999 p.xxii). Pragmatism does not try to seek to find 'the truth' nor does it aim to accurately describe reality by attempting to provide an 'accurate account of how things are in themselves', but to be of value to practice, to aim at utility for us' (Rorty 1999, p.xxvi). Hence, knowledge is not about finding absolute truth or its value defined in the abstract but is discovered in practical activity, and its usefulness is gauged by its ability to facilitate subsequent activity (Johnson et al., 2007).

A critical issue with the assumptions on the nature of reality is that they limit the range of methodological assumptions and, thus, the nature of knowledge and how knowledge is known (Morgan, 2007). To overcome these limitations, pragmatic philosophy replaces approaches to knowledge based on ontology, epistemology, and methodology with a new direction and challenges the metaphysical approach to the philosophy of knowledge (Morgan, 2014). However, pragmatism recognises basic research but argues that a single set of beliefs (post or anti-post) could have the privilege of objectively describing events, and multiple interpretations of events could be used to describe a phenomenon (Wicks & Freeman, 1998). As a pragmatist, I believe in the existence of external reality, a world external to our conscience and view science as one of the techniques to cope with the external world but do not accredit the status of positivists, i.e., a privileged position (Wicks & Freeman, 1998; Felizer, 2010). People take actions based on their likely consequences, and the results of those actions inform the future likelihood of the outcome. As a philosophical stance, pragmatism looks for the meanings of actions and beliefs regarding their consequences (Morgan, 2014).

This philosophical stance aptly fits with the research as the 'future' as an external reality is ever-changing based on the actions taken by individuals and firms. Causality is fluid and challenging to identify (Teddlie & Tashakkori, 2003). Any attempts to understand the 'future' as a theoretical construct by separating the actions taken by individuals and other actors could be seen as what Dewey calls a 'spectator theory of knowledge'. The truth about reality cannot be determined. As a pragmatist, the aim is to achieve a position that is better than others or that truth is what works (Wicks & Freeman, 1998), a position taken by firms and managers adopting foresight exercise and is highlighted by Hideg (2007).

Scholars have proposed different epistemological approaches to knowledge justification within organisation and management studies and strategic management to highlight this. For example, Burrell and Morgan (2017) propose an interpretive approach based on anti-positivism in management research. On the other hand, Arend (2003) urges the importance of scientific falsification (by the RBV researchers) and hence advocates a post-positivist approach. Taking a middle ground, Powell (2003), while critiquing Arend's Popperian falsification stance, argues that evaluating the RBV

theory should be based on its epistemological justification proposed by pragmatist philosophers who view truth as a practical concern of human understanding and from a true proposition that facilitates such discovery. Indeed, for strategy makers, it is not how theories are developed that matters but how they help them understand and address the requirements of both the internal social environment and the external business environment, i.e., the practical and usefulness of a prescription (Joyce & Woods, 1996).

The significance and relevance of a pragmatic approach, which focuses on practicality and usefulness rather than theoretical considerations, is also put forward by Spender (1996). Spender argues that while positivists dominate the management discipline (searching for a single universally applicable reality), most of the practitioners (managers) are pragmatists who are more concerned with 'cash value' or 'what works' (p.49). Indeed, this research takes the approach that management practitioners are more concerned with functional criteria that directly contribute to achieving organisational goals than logic, and reality is more local to their experience than a universal reality (Spender, 1996).

Revisiting Powell's (2003) critique of Arend (2003), while they both agree that the fundamental assumption of the RBV is tautological (valuable resources create value), analytic (firm resources are heterogeneous) and has issues with falsification (causal ambiguity), Arend (2003) argues that we should be looking to discover 'objective truth'. For empiricists/ positivists, a priori truths are analytic truths that could be discovered through philosophical analysis. Analytical propositions are usually uninformative or tautological (O'Brien, 2017). However, Powell's (2001) position stems from his argument that the explanation for sources of competitive (dis) advantage is an analytic (valuable resources create value/ weak resources destroy value) rather than a synthetic proposition. He argues that all resource-based propositions are analytic as they make no assertions. Empirical evidence within the RBV literature is based on ex-post event observations, looking for firm-specific resources and capabilities that caused competitive (dis)advantage. In Powell's view, such an observation would lead to finding some resources that caused the effect, or this could be attributed to isolating issues with causal ambiguity and intangibility. However, Powell argues that, though it may be analytic, such propositions facilitate theoretical and practical understanding of

the phenomenon. Considering this, Powell (2003) advocates an inclusive philosophical foundation that would enable researchers to get on with their work rather than worrying about philosophical conundrums.

Indeed, pragmatists embrace an inclusive philosophical position and a plurality of methods to try to get the best from both paradigms and believe the approaches are neither mutually exclusive nor right or wrong (Morgan, 2007). Furthermore, for a pragmatist, there could be single or multiple realities (Felizer, 2010), and the quest is not to find a single reality (Mackenzie & Kinpe, 2006). By not aligning with one philosophy, as a pragmatist, I put the research question at the centre and aim to gain insights by adopting any philosophy/paradigm that could provide insights into the phenomenon (Mackenzie & Knipe, 2006; Morgan, 2007). This view is central to the pragmatic stance and guides this research. It is worth mentioning that during the preliminary stages of this research, I considered a mixed-methods approach using a sequential exploratory research design (QUAL–quan) to address the research questions. However, as the study progressed and the gaps and limitations identified in the literature on the role of foresight in addressing organisational weaknesses became apparent, a more in-depth interpretative qualitative method was deemed the most appropriate approach to address the research question.

While pragmatism is gaining popularity within the management discipline (Easterby-Smith et al., 2018), there are also some criticisms. Adopting pragmatic epistemological justification (to meet practical ends) is considered vague and methodologically unsatisfactory. Morgan (2014), reviewing Dewey's approach to pragmatism, argues that the belief that pragmatism is about 'what works' is one of its ongoing problems. However, pragmatism emphasises both 'how to', which involves the technical aspects of research methods and 'why to' research in a given way—the 'why to' consideration is based on the choice of research goals (Morgan, 2014, p.61). At an epistemological level, pragmatic interpretivism differs from other forms of interpretivism because it does not allow for free interpretation of our experiences in whatever way we want or see them. Instead, the interpretation of experiences is based on the links between actions and their outcomes that are predictable.

Powell (2003) agrees that pragmatism could be better and value-free in the management literature. Nevertheless, Powell (2003) argues that no other epistemological stance justifies 'strategy' research more convincingly. As Rorty argues, truth is not the goal of this inquiry. Instead, the aim is to “know whether some competing description might be more useful”...and provide 'utility for us' (Rorty 1999, p.xxvi). Indeed, this research explores the role of foresight as a 'competing description' in explaining how firms identify and mitigate resource weakness, adopting a pragmatic interpretive inquiry.

There are two critical reasons for a qualitative methodology. Firstly, considering that resource weakness is not a fully explored concept (Arend, 2004; Armstrong & Shimizu, 2007; Lockett et al., 2008; Arend & Lévesque, 2010; Warnier et al., 2013), a qualitative approach to explore this phenomenon is expected to provide more significant insights. Secondly, the limitations of strategic foresight as a theoretical construct warrant a qualitative inquiry. The following section, therefore, considers the qualitative research methodology.

3.3 Research Methodology

3.3.1 The Gioia Methodology

This research adopts the Gioia methodology (Gioia & Thomas, 1996), a systematic and grounded theory-based interpretative approach (Gehman et al., 2018). The Gioia methodology is chosen for its systematic approach to data analysis, infusing "qualitative rigour" into an inductive study (Gioia et al., 2013, p.15). Chandra and Shang (2019, p.25) term this approach 'systematic interpretivism'. This systematic approach ensures credible data interpretations that lead to plausible and defensible findings and generates persuasive new theories (Gioia et al., 2013) or extensions to existing theories (Gehman et al., 2018). Its grounded nature provides a solid foundation for this research, enhancing its reliability and validity.

The Gioia method, which has gained popularity recently, is known for its systematic qualitative data analysis and presentation approach. Qualitative research, a significant and broad approach, not only approaches the study of complex social phenomena

(Rossman, 2017) but also places the researcher within the observed situations (Denzin & Lincoln, 2011). This naturalistic and interpretive approach (Patton, 2015; Rossman, 2017) is crucial for this study as it aims to analytically describe (analytic descriptive study) and develop a framework for the relationship between strategic foresight and organisational weaknesses.

A qualitative inquiry rooted in empiricism includes collecting data from words, stories, observations, and documents (Patton, 2015), images, sounds and numbers (Rossman, 2017), then verifying and interpreting them. The collected data represents the world (Denzin & Lincoln, 2011). The verification and interpretation process involves grouping data into patterns for interpretation (Rossman, 2017). Qualitative approaches can be adopted for various purposes but fall into three distinct uses. First, to describe a phenomenon, allow for comparison or forecast, and, finally, lead to theory development (Rossman, 2017). In qualitative research, the researcher constructs knowledge by interpreting data representing reality (Rossman, 2017). In doing so, they attempt to make sense of or interpret the meaning of the phenomenon (Denzin & Lincoln, 2011).

Qualitative studies enable researchers to document, analyse and interpret how the subjects organise, construct, and draw meanings from their experiences. Patton (2015) advocates the importance of the researcher's 'contextual sensitivity' in enabling this. 'Contextual sensitivity' refers to the researcher's ability to understand and appreciate the unique context in which the research is conducted, including the social, cultural, and historical factors that may influence the research findings. Understanding the research context and the context of the world could enable the researcher to identify any unanticipated themes and allow us to compare similarities and differences between cases, which will assist in deepening our understanding of the phenomena. Considering this is one of the first studies to explore the interplay between strategic foresight and organisational resource weaknesses, there is an opportunity for developing a persuasive new theory. Hence, an appropriate method should offer rigour and infuse creativity.

In Table 3.1, I summarise the prominent studies that have adopted the Gioia methodology and published it in crucial management journals, highlighting the

relevance and timeliness of this research. This emphasis on relevance and timeliness underscores the urgency and importance of our research, as it is built on a methodology currently at the forefront of academic discourse.

Authors	**Journal**
Gioia & Chittipeddi, (1991)	Strategic Management Journal
Gioia et al., (1994)	Organisation Science
Gioia & Thomas, (1996)	Administrative Science Quarterly
Corley & Gioia, (2004)	Administrative Science Quarterly
Nag et al., (2007)	Academy of Management Journal
Gioia et al., 2010)	Administrative Science Quarterly
Clark et al., (2010)	Administrative Science Quarterly
Harrison, (2011).	Organisation Science
Ravasi & Phillips, (2011)	Strategic Organisation
Nag & Gioia, (2012)	Academy of Management Journal
Mantere et al., (2012)	Academy of Management Journal
Patvardhan et al., (2015)	Academy of Management Journal
Vaccaro & Palazzo, (2015)	Academy of Management Journal

Table 3.1: Qualitative studies that have adopted the Gioia methodology.

The following section considers the design of the data collection instrument and the strategy adopted for collecting the relevant data for analysis using the Gioia method.

3.4 Research Design

3.4.1 Data Collection Instrument

Qualitative inquiry is a rich tapestry of methods, including document analysis and interviewing, with the latter being the cornerstone of this study. In line with the best qualitative research practices, this study draws from various data sources, such as company reports, media reports, and field memos. However, semi-structured interviews, the primary data collection instrument, play a crucial role in this study. As Creswell (2009) asserts, these interviews are a vital technique in qualitative research, providing a unique window into how participants construct meaning from the phenomenon and its implications (Patton, 2015).

My approach to designing the interview questions is firmly grounded in pragmatism. As Patton (2015) advocates, a pragmatic interview is purposeful, addressing real-world issues such as how firms can identify their current and future weaknesses and what role foresight can play in the identification process. In designing the questions, the critical consideration was eliciting straightforward yet insightful answers from the interviewees. The interview questions are open-ended and designed to elicit in-depth responses. As Corbin and Strauss (2016) suggest, this approach allows us to understand the phenomenon from multiple perspectives, enriching our research with various insights and adding a practical and relevant dimension to this study.

A key emphasis from the inception of the research is the need to grasp the participants' viewpoints on the phenomenon and the role of strategic foresight in mitigating organisational weaknesses. I did not consider drafting the questions a one-time task but a reflective process that ensured the questions were focused and enabled participants to answer straightforwardly. Following Lassiter's (2005), Flick's (2006) and Maxwell's (2012) suggestions, I also involved the participants in reviewing the interview questions. This iterative and reflective process, guided by the first three interviewees' inputs, supported refining the interview protocol, and the questions were reviewed after each interview (additional details are in the Pilot Study, section 3.4.4).

As Agee (2008) highlights, this reflective and iterative process that went into refining the questions added to the study's strengths. The interview data are treated as an 'account' of the managers, representing the world (Denzin & Lincoln, 2013). They are both retrospective and real-time accounts of managers experiencing/ experienced the phenomenon this research is investigating (Gioia et al., 2013). All the accounts are treated differently, analysing how such accounts are possible, aligning within and across the accounts, where they are sustained, and in what context. Hence, one critical task was identifying and selecting experienced managers who could offer insights to help address the research question discussed in the following section.

3.4.2 Sampling Strategy

The research, which focuses on analytical generalisation, as espoused by Yin (2014) and not for statistical generalisability, holds significant importance. An *analytical*

generalisation is a powerful tool that develops a theory of a phenomenon with potentially broad applicability (Chandra & Shang, 2019). Considering this, a non-probabilistic, purposive sampling approach is adopted (Guest et al., 2006; Patton, 2015). A purposeful sampling approach allows for selecting informants who could provide rich information and practical manifestations of the phenomenon under study (Patton, 2015). Indeed, the Gioia approach primarily relies on purposeful sampling (Chandra & Shang, 2019).

The critical focus in selecting the informants was to identify participants who are ‘knowledge agents' (Gioia et al., 2013, p.17) and hence could provide valuable insights into how firms identify and mitigate resource weaknesses and to what extent strategic foresight plays a role in the process. In line with Guest et al. (2006) and adopting Maertin's (2016) approach, I ascribe knowledge agents as individuals who have the experience of actively participating in strategic matters, have in-depth and implicit knowledge of organisational resource strengths and weaknesses, and have information on the strategic decision-making process.

Considering the above criteria, senior managers currently or previously managed at a strategic business unit level can improve the data's quality and accuracy and fit the requirements. However, the selection criteria were not bound to a specific industry or region. This broad approach comes from the belief that senior managers across organisations are more homogeneous despite their different demographic profiles (Hambrick & Mason, 1984). Indeed, by adopting this approach, the aim is to minimise any potential bias in the researcher's judgement when selecting participants. Outlining the specific experiences required for participants to be included in the study and explaining the rationale behind selection characteristics adds to the accuracy and dependability of data obtained by providing a clear and transparent justification of the selection criteria and sampling approach.

Since this research does not aim for statistical generalisability, a non-probabilistic, purposive sampling approach is adopted (Guest et al., 2006; Patton, 2015). A purposeful sampling approach allows for selecting informants who could provide rich

information and practical manifestations of the phenomenon under study (Patton, 2015).

3.4.3 Data Collection

How many interviews are enough for qualitative inquiry is a common question in qualitative inquiry literature (Guest et al., 2006; Galvin, 2015; Mason, 2010; Creswell, 2012). While some scholars have suggested a certain number of interviews, Locke (2000) and Guest et al. (2006) argue that 'theoretical saturation' is a criterion to justify the sample size in qualitative studies. The concepts of theoretical saturation (Locke, 2000) and data saturation (Guest et al., 2006) are rooted in Glaser and Strauss's (2017) grounded theory approach, which is widely adopted in qualitative studies. Theoretical saturation is “the point in data collection and analysis when new information produces little or no change to the codebook” (Guest et al., 2006, p.65). Interestingly, the Gioia approach, focusing on robustly interpreting emerging themes, does not specify a particular number of interviews and can even be applied to a single case study. For example, Corley and Gioia (2004) used this approach to examine identity ambiguity and the change process of a Fortune 100 firm's spin-off (single case study). However, considering the exploratory nature of this research, I adopted the data saturation approach in deciding when to stop the further collection of any additional data, which led to conducting 28 interviews over two phases. The following sections expand on the interview process.

Primary qualitative data collection took place over two phases. The first phase, a pilot study, was conducted from April 2019 to September 2019. However, due to the pandemic, there was a significant delay in Phase 2 data collection, which was conducted from April 2021 to December 2021.

Figure 3.1: Data Collection Phases

3.4.4 Pilot Study

I undertook a pilot study for three key reasons. First, to explore the interviewees' understanding and interpretation of resource weaknesses and their relation to foresight. Secondly, it will enable the analysis of whether the questions prompt a more in-depth discussion/ engagement with the interviewees and seek advice on any amendments and additional questions necessary to explore the study area more in-depth. Thirdly, it will create an environment that provides an opportunity to engage with the informants informally but like in a 'real' situation (Robson & McCartan, 2016). Indeed, Maxwell (2005, p.58) highlights the importance of pilot interviews by stating that “one important use that pilot studies have in qualitative research is to develop an understanding of the concepts and theories held by the people you are studying”.

The pilot study was a learning process involving three interviews with a consultant and two senior managers (SM1, SM2, and SM3, subsequently coded as CO1, SM1, and SM2; the rationale is discussed in the next section). The first interview with the Chief Executive Officer (Consultancy – CO1) was informal, and we spent time discussing the structure of the questions and how managers might perceive the questions. This discussion helped in making changes to the interview protocol. For example, a brief clarification of the word 'resource' was included in the interview protocol, as CO1 pointed out:

> *"When I read the word ‘resource’, I automatically thought you meant human resource weaknesses".*

Based on the feedback, there was a reduction in the number of interview questions. The first version of the interview protocol had twenty-four questions. CO1 thought it was too many. CO1 advised,

> *"because obviously if you put up a list of 14, 15 questions, the first thing they are going to say is..oh...I really have not got time. Can we do it tomorrow? So if you make it look small, psychologically, they will think, okay. Half an hour, I will do this".*

Following his suggestion, the interview guide was revised to include eight main questions. However, each question has several sub-questions to probe the interviewees' responses further as required.

The Chief Operating Officer (Hospitality - SM1), the second informant in the pilot study, thought the interview questions were okay. After the interview, he commented that a non-disclosure agreement binds him and that all the examples that he has given are already in the public domain. Reflecting on SM1's comment, additional changes to the questions were incorporated. For example, the question,
"What would you consider a weakness/threat to your firm and why, was modified to *"What would you consider as a weakness/threat to a firm like yours and why?*

Interestingly, in the subsequent interviews, it was evident that managers were more comfortable answering this line of inquiry, though most gave examples from their current and former organisations. During the third pilot, the General Manager (Public Services - SM2) commented that the questions were 'huge' and were too open-ended, leading to further modifications. The word 'key' was added to the questions to elicit a more focused answer. For example, the previously given question now reads, "What would you consider as *'key'* weaknesses to a firm like yours and why?

3.4.4.1 *Phase 1 Preliminary data analysis*

A preliminary analysis of the pilot interviews revealed several codes attached to the CO1 transcript that did not align with those generated from SM1 and SM2 transcripts. Further analysis of these codes and the transcripts revealed the heterogeneous nature of the sample and a likely sub-group variability. CO1, who is now heading his consultancy firm, has over 30 years of experience holding several senior positions in large oil and gas firms. His extensive knowledge, expertise and current position make his perspective as an 'outsider', which is particularly valuable to the study. On the other hand, the other two informants are currently senior managers (SM) and were sharing their accounts as an 'insider'. This exciting observation led to reconsidering the sample selection criteria to include other sub-groups that could sustain or vary their accounts. A couple of changes to the sample criteria were necessary to capture any variability associated with the informants' experiences within an organisation. I expanded the sample to include consultants (outsiders) and middle/junior managers (lower echelon) in addition to senior managers (upper echelon). An additional (second) criterion is then included, stipulating that the informants should have at least ten years of work experience with the view that this substantial experience would enable them to qualify

as 'knowledge agents' who "know what they are trying to do and can explain their thoughts, intentions and actions", Gioia et al. (2013, p.17). The updated sample selection criteria now include,

1. Senior managers who currently (or previously) manage a strategic business unit and above.
2. Middle-level managers with a minimum of ten years of work experience

The above criteria guide the selection of the Phase 2 informants.

3.4.4.2 *Phase 2 Data Collection*

In Phase 2, an additional twenty-five informants were interviewed, bringing the total to twenty-eight semi-structured interviews, including the Pilot interviews. Company documentation, memos, and press releases are secondary sources that provide additional data. Following the updated selection criteria, in addition to the pilot phase, which includes a consultant and two senior managers in the pilot phase, interviews were conducted with managers at several levels, including twelve senior managers (company heads), eleven middle managers, and two consultants. Bringing the total number of informants to twenty-eight and their summary description is in Table 3.2

No of Consultants	No of Senior Managers	No of Middle Managers
3	14	11

Table 3.2: Sample Descriptive Data (No of participants)

Nine interviews were conducted face-to-face, four over Skype and fifteen via Teams. Table 3.3 provides a summary of the modes of interviews.

Interview mode:

Face-to-face interviews	Skype	Teams
9	4	15

Table 3.3: Sample Descriptive Data (Interview mode)

Interviews typically lasted 30 – 45 minutes and, in total, included 1089 minutes of audio data. I took notes (memos) during and immediately after the interviews (mainly within the first 24 hours). Some informants also referred to information in their company reports, media, and other publicly available documents. These secondary data were valuable for triangulating the analysis. I stopped collecting data after twenty-eight interviews as the preliminary analysis of the additional data from the last three interviews did not offer any added insight into the identified aggregate dimensions, hence the theoretical relationships (Locke, 1996; Guest et al., 2006). Table 3.4 provides an overview of the primary data of this study.

Sl	Name	Position	Industry	Experience	Interview duration	Revenue £ in millions	Interview Mode	Location at the time of the interview
1	SM1	Chief Operating Officer	Hospitality	>30 years	37 mins	10	Skype	India
2	SM2	General Manager	Public Services provider	>20 years	60 mins	2950	Face to face	UK
3	SM3	Chief Executive Officer	Engineering	>30 years	59 mins	3000	Skype	India
4	SM4	Chief Executive Officer	Education Management	>20 years	34 mins	28	Face to face	UK
5	SM5	Managing Director	Information Technology	>20 years	25 mins	NA	Skype	UK
6	SM6	Chief Executive	Media	>30 years	61 mins	2.5 (568) *	Skype	UK
7	SM7	President & Chief Executive Officer	Automation	>25 years	42 mins	200	Teams	USA
8	SM8	Chief Operating Officer	Chemical Engineering	>25 years	31 mins	10	Teams	UK
9	SM9	President	Hospitality	>25 years	29 mins	100	Teams	USA
10	SM10	Chief Executive Officer	Mining	>30 years	45 mins	50	Teams	South Africa
11	SM11	Chief Executive Officer	Play Equipment	>25 years	23 mins	14	Teams	UK
12	SM12	Vice President	Health Insurance	>20 years	35 mins	1800	Teams	Dubai
13	SM13	Managing Director	Pharmaceutical	>20 years	28 mins	10	Face to face	Pakistan
14	SM14	Owner/ Managing Director	Antiques	>20 years	25 mins	5	Face to face	UK
15	MM1	Head of Learning & Organisational Development	Public Housing	>20 years	56 mins	172	Face to face	UK
16	MM2	Head of Human Resources	Heavy Engineering	>15 years	45 mins	54000	Face to face	UK
17	MM3	Head of Marketing and Strategy	Oil & Energy	>15 years	48 mins	28	Face to face	UK
18	MM4	Operations Manager	Meat Industry	>15 years	47 mins	10	Teams	Canada
19	MM5	Owner/ Manager	Information Technology	>10 years	29 mins	NA	Face to face	UK
20	MM6	Head of Mfg. Quality	Automotive	>25 years	33 mins	1000	Teams	India
21	MM7	Senior Project Manager	Consumer Electronics	>15 years	40 mins	<10	Teams	Lebanon
22	MM8	Sr. CSR	Online Retail	>10 years	32 mins	2000	Teams	Canada
23	MM9	Partner and Account Manager	Property Maintenance	>10 years	25 mins	<10	Teams	New Zealand
24	MM10	Plant Operations Manager	Automotive	>15 years	26 mins	3000	Teams	Mexico
25	MM11	Operations Manager	Cannabis	>15 years	25 mins	50	Teams	Canada
26	CO1	Chief Executive Officer	Consultancy	>30 years	70 mins	NA**	Face to face	UK
27	CO2	Managing Director	Consultancy	>30 years	42 mins	NA**	Teams	UK

28	CO3	Director	Consultancy	>30 years	37 mins	NA**	Teams	UK

* Previous Position: Vice President (Media)
** Revenue Data Not Available

Table 3.4: A Descriptive Overview of Primary (Interview) Data

3.5 Validity, Credibility and Transferability

This research meets the critical validity, credibility, and transferability criteria in several ways.

First, it is critical to ensure that the study's findings have 'use' value and that there is belief and trust in the integrity of the Research (Rossman, 2017). The study's reliability and validity (trustworthiness) come from three key aspects:

1. The data analysis includes insider-outsider information and triangulation with the relevant secondary sources.
2. The pilot study ensured the clarity and completeness of the questions.
3. Data was collected until it reached saturation, and a conclusion was drawn when the last three interviews yielded no meaningful additional information (second-order themes). Any further interviews would not significantly change the findings. This indicates the collection of sufficient data to address the research questions.

Secondly, the online AI-generated transcription was cross-checked with the audio to ensure it was error-free. The first three respondents were requested to review the transcript to check if their views were captured correctly (Respondent validation). Notes were added to the codes to remove any definitional drift in coding and increase reliability, as suggested by Gibbs (2008).

Finally, as stated in section 3.4, the research aims to explain the phenomenon based on the respondents' context in a transferable way. In line with this approach, the first-order concepts derive from direct participant quotes (in vivo codes). A write-up of the analysis includes quotations from the transcripts and secondary data to demonstrate explicitly how the analysis is grounded in the collected data and the researcher's interpretation. The data structure, rigour, and careful analysis of the data help ensure the 'transferability' of this research. Constant comparisons were undertaken to enhance validity (Gibbs, 2008) by conducting checks within and between cases during coding. This approach has enhanced the consistency and accuracy and facilitates identifying any differences and variations within data, as Gibbs (2008) suggested. A

critical example is the identification of the 'insider' and 'outsider' perspectives, adding immense value to this study.

3.6 Ethical Considerations

The literature underscores the importance of ethical and moral values in pursuing knowledge (Denzin & Lincoln, 2011; Lyons & Coyle, 2021). The European Commission's guidance on ethics in social science stipulates that researchers have a significant responsibility towards human participants, their rights, safety, well-being, and interests. This guidance is a cornerstone in the ethical clearance process for research involving humans, a requirement set by universities in the UK. This study obtained ethical clearance from Durham University's Research Ethics Committee, a process aligned with the University's Research Ethics Policy. The application included detailed information on the provisions that I have in place for safeguarding, informed consent, confidentiality, anonymity, and data protection (details included in Appendix 2).

3.7 Qualitative Data Analysis Technique

As Patton (2015) notes, the qualitative inquiry design is helpful for the exploration, discovery, and interplay of inductive and deductive logic. My approach to (qualitative) data analysis is not a mere mechanical process but an exciting journey of discovery and interpretation processed through analytic procedures. Following Braun and Clarke (2006), the analytic data analysis procedure is a six-phase process that begins with familiarising the data, progresses to systematic coding, and culminates in generating initial themes. The subsequent stages involve developing and reviewing themes, their refinement, definition, and naming, and finally, the data analysis chapter's write-up, including the data structure's generation.

It is important to note that the six-stage process mentioned above is not a rigid linear progression but a dynamic and adaptable process. It involves multiple cycles of data re-familiarisation (reading the transcripts), data reduction, and review and refining of the themes. As Locke (1996) suggests, this continuous back-and-forth process ensures that data collection, coding, and interpretation are not isolated research

activities. However, “they continually blur and intertwine from the beginning of an investigation to its end” (Locke, 1996, p.240). The following sections explain the six stages of data analysis.

3.7.1 Familiarisation of the Data

As Jackson and Baxeley (2019) point out, the data for the research is not just a collection of recordings and materials but a treasure trove of insights waiting to be discovered. Collecting qualitative data is “easy”. However, the real challenge lies in interpreting the data and making it sound, valuable, and relevant to the research question (Richards, 2005, p.33). It took repeated data reviews and several amends to the codes before identifying the patterns within the data. This iterative and meticulous process highlights the data's value and potential and the researchers' crucial role in unlocking its secrets.

'Otter.ai', an online transcription software, was essential to transcribe the recorded data. This tool was instrumental in converting the audio data into text, facilitating the subsequent data analysis. Transcribing was done immediately after each interview, and this approach allowed immersion in the data and improved the quality of the following interviews. Though online transcription saved time, several errors were corrected manually by listening to the audio, which allowed for a closer engagement with the data. I read and re-read the transcripts while listening to the audio and started to note down initial ideas as suggested by Braun and Clarke (2006).

Following familiarisation with the data, I used the qualitative analysis software NVivo 12 and NVivo (2020) (an upgraded version of NVivo 12) to code the transcribed interviews and other relevant documents.

3.7.2 Systematic Data Coding (1st Order Concepts)

The first step in the analysis is coding the data following an analytic process, with each code providing an abstract representation of the phenomenon. Gibbs (2018, p.1) argues that researchers could provide a “clear, understandable, insightful, trustworthy and even original analysis” when data is collected and processed through analytic procedures. As Clarke and Braun (2013) highlight, the analytic coding allowed for

capturing both a semantic and conceptual reading of the data, paving the way to develop an innovative, rigorous analysis that provides insight into the phenomena.

The development of first-order codes was a two-step process. In the first step, following Ravasi and Phillips (2011), Mantere et al. (2012), and Gioia et al. (2013), the first-order coding (concepts) involved 'in vivo' codes by using the language of the informants. To refine the first-order codes, 'in vivo' codes were grouped to form a simple descriptive phrase in the data structure. Figure 3.2 presents a sample of this exercise forming descriptive first-order codes from in vivo codes.

After initial coding, I cross-checked the codes attached to individual transcripts to check for discrepancies. Once I completed the coding process, I undertook another review to check for similarities and where the same references were attached to different codes. Over two hundred first-order codes emerged from the data during the initial stages.

3.7.3 Generating Initial Themes (2nd Order Themes)

After completing the initial coding, second-order themes emerged after clubbing the related codes. The hierarchy of the codes and themes was reviewed by looking at the relationships between codes and by making a case-by-case comparison. This case-by-case comparison led to the explication of the properties of the initial concepts. These explanatory themes provide a deeper insight into the data (Gioia, 2021). Though theoretical reflexive analysis (Braun & Clarke, 2020) guided the initial stages in generating second-order themes, the process also adopted a grounded theory approach by identifying and refining emerging categories. As Gioia (2021) highlights, I paid careful attention to the nascent themes/ concepts not included in the literature at this analysis stage.

Interestingly, during this data analysis phase, a more first-hand approach of printing the codes on small pieces of paper and organising them was more helpful than using NVivo for this exercise (photos of the exercise are in Appendix 1). Several iterations reduced the number of first-order codes and second-order themes to manageable numbers. I deleted a few codes and merged a few during this process.

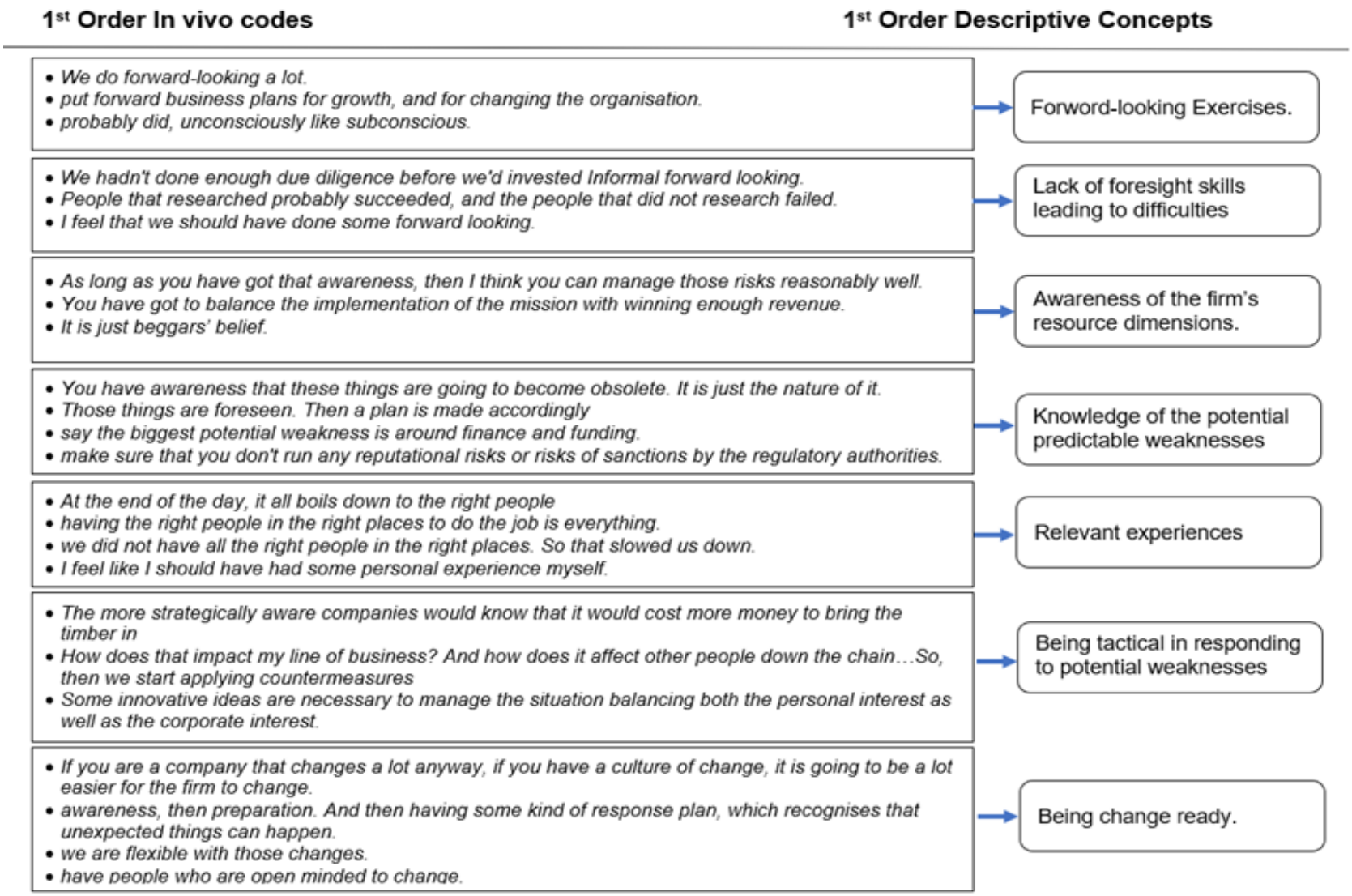

Figure 3.2 Sample Descriptive First-Order Codes from in vivo Codes

3.7.4 Developing and Refining the Aggregate Dimensions

In developing aggregate dimensions, an iterative process of incorporating similar second-order themes led to further data reduction and data structure development. As a final step in organising the data, I drafted the Second-Order and aggregate dimensions relevant to the research question after a detailed analysis.

Following this, I engaged in several further iterations of refining, defining, and naming second-order themes and aggregate dimensions, which led to the thematic framework's finalisation. The First-Order Concepts, Second-Order themes, and Aggregate Dimensions establish the data structure presented in Figure 3.3. The data structure shows how the concepts, themes and dimensions relate to each other (Gioia, 2021).

3.7.5 Drafting the Report

As Braun and Clarke (2020) emphasised, I carefully write up the findings rooted in the informants' experience. The report presents the informants' voices and the researcher's producing 'qualitatively rigorous' links between the data and theory (Gioia, 2021, p. 24). The report uses quotes from the informants to show the link between the data and theory. The report's structure presents the research question, the methodology, the findings, and the implications, providing a comprehensive overview of the research process and its outcomes.

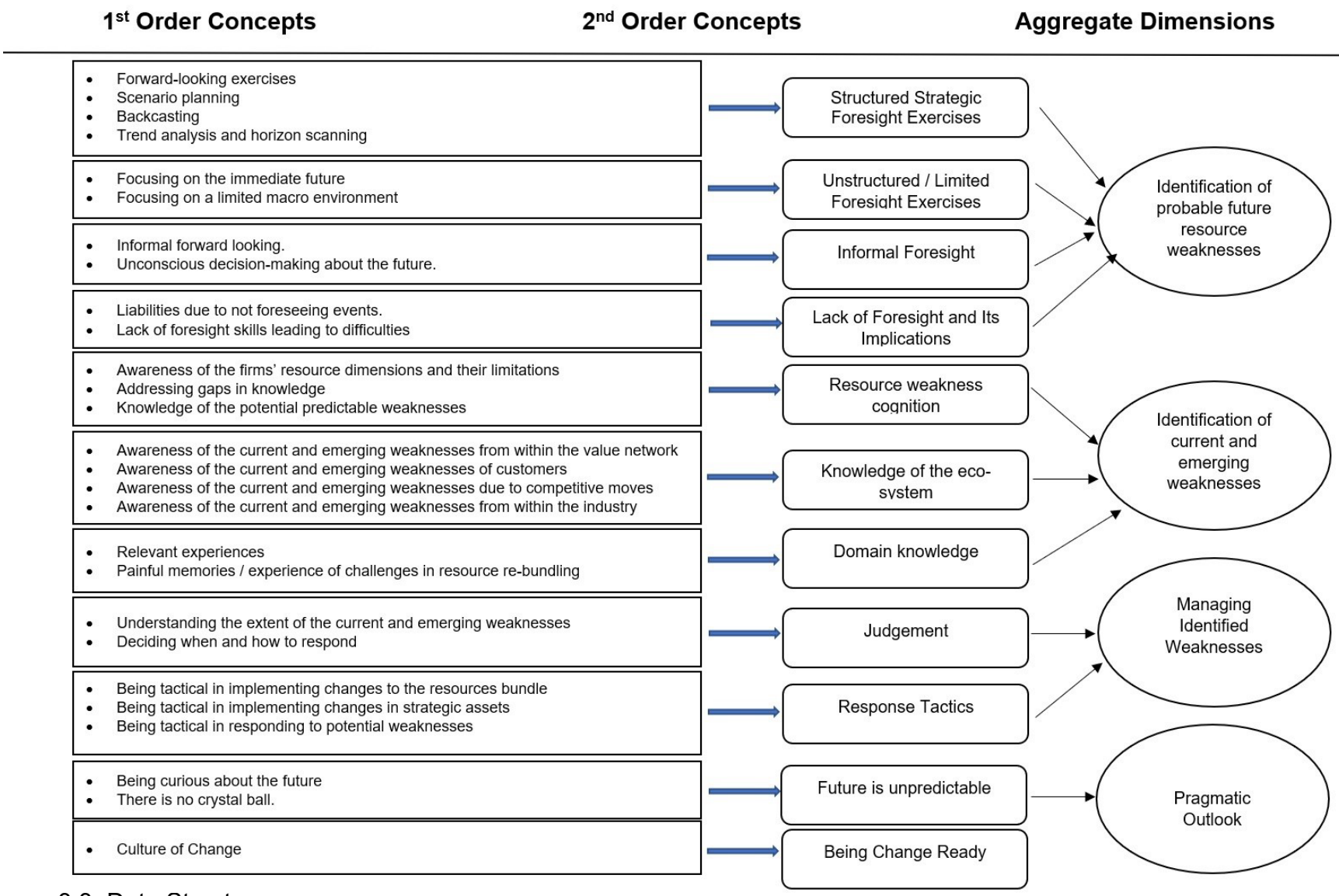

Figure 3.3: Data Structure

3.8 Chapter Summary

This chapter discusses the research design and methodology used in this study. It explores how the researcher's pragmatist philosophical position has influenced the research approach and presents the rationale and justification for Pragmatic and qualitative methodology. The Chapter also outlines the methods used for the data analysis and presents the data structure. The next Chapter (4) presents the findings based on a description of the data interpretation that informed the aggregate dimensions.

Chapter 4: Data Analysis

4.1 Introduction

This chapter presents the findings of empirical research that utilised interviewing and secondary data analysis methods adopting the Gioia methodology. The focus of this study is to understand to what extent firms could use foresight to identify and mitigate resource weaknesses. Four aggerate dimensions from the data set show how firms identify and mitigate current and future weaknesses. These four dimensions capture the content of the data set:

1. Identification of probable future weaknesses
2. Identification of current and emerging weaknesses
3. Managing current, emerging, and probable future weaknesses
4. Having a Pragmatic Outlook

The four dimensions are generated from the salient second-order themes, as shown in the data set. Interestingly, all the themes are strongly evident across the data set except the level of foresight activities.

4.2 Identification of Probable Future Resource Weaknesses

4.2.1 Introduction

Data indicates that firms undertake several foresight exercises to identify the future resource requirements and the value dimensions of their current resources. Firms' foresight exercises include using formalised methodologies like scenario planning, horizon scanning, and backcasting to subconsciously forward-looking at an individual level, as shown in Table 4.1. Data analysis shows that classical foresight activities aim to reduce uncertainty by identifying potential future weaknesses. All the respondents highlighted the importance of some form of foresight in finding probable future weaknesses.

The depth and formal engagement with foresight activities depend on the organisation's size, and larger firms tend to have more structured foresight exercises

than smaller firms. Table (4.1) below highlights the type of foresight activities the sampled firms undertake.

Respondent	Type of Strategic Foresight activity	Respondent	Type of Strategic Foresight activity
SM1	SWOT/ Competitor Analysis	MM1	Informal foresight exercise
SM2	Structured formal exercise (Scenario planning)	MM2	Formal foresight exercises
SM3	Structured Foresight Exercise limited to relevant environment	MM3	Structured foresight exercise
SM4	Informal foresight exercise (Back casting)	MM4	Structured formal exercise but limited to the Task environment
SM5	Trend Analysis (mostly limited to Task environment)	MM5	Informal forward-looking
SM6	Structured formal exercise (Scenario planning)	MM6	Structured foresight exercises
SM7	Structured formal exercise	MM7	Informal forward-looking
SM8	Informal forward-looking	MM8	Structured foresight exercises
SM9	Informal foresight exercises	MM9	Informal forward-looking
SM10	"subconscious" forward-looking, technological trend analysis	MM10	Structured foresight exercises
SM11	Structured forward-looking exercises	MM11	Informal forward-looking/ technological trend analysis
SM12	Structured foresight exercises (scenario planning)		
SM13	Informal foresight exercises		
SM14	Informal foresight exercises		

Table 4.1: Respondent's Foresight Activities

4.2.2 Structured Strategic Foresight Exercises

Respondents, especially from large firms, indicate that they engage in formal foresight exercises to understand the future trajectory of the environment and its implications for their current resources. For example, the CEO (Play Equipment) indicated:

> *"We have got a fairly robust structure in place. We do forward-looking a lot."* SM11

Similarly, several other respondents stated that their firms undertake foresight activities. The Chief Executive Officer (Educational Services) explained how his firm undertakes several foresight activities to understand the future and its implications for its products, including its potential to become non-competitive. The CEO (Education Services) said:

> *"One of the things we do is analyse what the marketplace is going to look like for the future."* SM4

When asked to explain further, the CEO added:

> *"So, we looked at what the landscape was going to look like, what resource would be required to deliver (product), and then build that within the organisation."* SM4.

Firms use their understanding of the future to restructure their resource bundle by adding and releasing resources depending on their understanding of the future resource dimensions.

The Chief Executive Officer (Engineering) described:

> *"We study the market. We understand where we want to be, then we work backwards from that and therefore identify the resources needed to get to what is the target state."* SM3

To explain the importance of foresight exercises, the Vice President (Health Insurance) shared why he believes his firm has succeeded in minimising future weaknesses. He explained:

> *"What we do is, every single month, our managers from every single department come down and sit, and we say, what trends do you see in your line of business that you are responsible for? How does that impact my line of business? And how does it affect other people down the chain? We call this a trend meeting. If we identify any issues or possible changes, we call this a change in the trend."* SM12

When a firm's foresight indicates that it could develop weaknesses within its resource bundle, firms use their systems and processes to monitor and mitigate

such risks. The Chief Operating Officer (Play Equipment) described how they managed their perceived future weaknesses. He said:

> *“We have our board meetings once a quarter where we look at our risk register. The risk register includes lots of strategic potential outcomes, downturn in trade, our supply chain issues, our active guard issues, type stuff, and things we got in place. So, we talk through what the strategy would be to overcome it, and the likelihood that it would actually happen at that time.”* SM11

In addition to the generic ongoing foresight activities, firms initiate more focused foresight exercises to understand a specific environmental uncertainty. For example, due to the UK voting to leave the European Union (EU), firms in the UK that have trade relations with the EU faced much uncertainty. The Chief Operating Officer (Play Equipment) briefed how his firm worked on what this might mean for the company and how they managed. He explained:

> *"We did a little mini risk register, which led to things like regulations, suppliers, insurances, insurance policies, documents, things like that.”* SM11

Fully aware of the complexities surrounding the different forms of Brexit, the firm developed different scenarios and a Brexit risk register to help the firm plan for the coming changes. The risk register identified several high-priority areas for each scenario the firm must investigate. In an interview with the press, the COO (Play Equipment) commented:

> *“[The idea behind the register] was to research all the different areas that may affect us, and from that came circa 100 actions that we needed to research or achieve.”* SM111.

The COO (Play Equipment) and their team were methodological in their foresight exercise, and this helped the firm to re-organise its resources to maintain its strength dimensions so they can continue to trade during and after the Brexit transition period without any disruption. Such was their success; the British Cabinet Office highlighted the firm as an exemplar and advised other firms to

prepare and be ready for the transition by restructuring their resource bundle. The Cabinet Office messaged on their LinkedIn page:

> *“I recommend all companies should now actively look at doing the same & being ready for the end of this transition period.”* SM112

Firms also use their foresight to minimise the probability of their resources becoming weak by spreading them in various products and markets. Especially when faced with uncertainty in their current line of business, firms use their ability to look into the future to identify activities they should cease, thus releasing some of the associated resources before they lose their strength dimension. The information gained from foresight activities informs their decision to re-organise their resource bundle to minimise future weaknesses by identifying which activities should cease. For example, the Chief Executive Officer (Consultancy) pointed out that when their clients moved to East European countries, they had to look at alternative markets or products to offer their services. The CEO described how their firm managed the situation. CO3 recalled:

> *" We did horizon scanning. So, it is basically saying, okay, what of our main risk areas and then what information sources have we got that are then going to give us an indicator?”* CO3

As a result of their analysis, the consultancy firm identified that the demand for their current products and services (capabilities) would decline in the future. Armed with this data, the CEO (Consultancy) stated that their firm realised that their current assets would become future liabilities if they did not change course. The CEO stated:

> *"We sat down, and we said, if we are going to stay in business in the northeast, we need to change direction."* CO3

As a result of their understanding of the future, their firm developed new training programmes and consultancy services for the food industry, mainly focusing on the major supermarkets and slowly ceased to offer other services, which were their critical strengths in the past, offering a competitive advantage. The CEO (Consultancy) shared how their foresight (information) on the alternative areas for future growth supported their decision to re-organise their resources. He said:

"Everybody needs food, it's never going to change. So, what we did is we decided to target food companies and move away from firms that we used to offer our services in the past." CO3

In doing so, they altered the structure of their training and consultancy portfolio to remove the firm's future weaknesses. They have identified an alternative set of activities that will utilise their idiosyncratic resources in the future. Indeed, Coase (1937) highlights the need for foresight to enable firms to choose and plan between alternative economic activities.

4.2.3 Unstructured/ Limited Foresight Exercises

Most of the respondents from smaller firms indicated that their external environmental scanning is limited due to resource constraints. Unlike large companies that can afford in-house specialists or outsource their foresight activities to external firms, smaller firms do not have the resources to engage in such activities.

When a firm's resources are stretched beyond what they can handle, managers re-evaluate their information process and focus on a selective list of issues. As the Head of Marketing and Strategy (Oil & Energy) highlighted, when resources are constrained, how firms tend to allocate their scarce resources to focus on the immediate future and on the areas that will sustain the firm in the near term. He opined:

"Firms will focus their efforts on a certain amount of content, which will keep them alive. And kind of things which are almost in the immediate future. Anything which goes past a certain horizon, they won't even think about until it happens. And that will just be where they actually put their own mental resources based on what they have, and where they currently sit…… probably don't consider too far ahead to go to surgery. They don't have the time." MM3

Hence, their foresight activities aim to identify current and near-term weaknesses and address those resources.

Firms have time limitations and resources to engage in structured foresight activities. Data shows that sometimes firms focus on one aspect of the environment, primarily the environment, to which their senior managers are more attuned. The Chief Executive Officer (of Mining Equipments) narrated an accident involving their products at one of the mines, which led to the suspension of some of their products until the completion of relevant investigations on the safety of the machines. He believes that while their firm understood their customers' future requirements and the technological trends well, they had limited foresight in other business areas. One of the critical areas that they failed to monitor is how the changes in the Mine Health and Safety Inspectorate (regulator) can impact their business. He believes that the Inspectorate, *"who generally comprise of people with not a lot of mining experience,"* came to the wrong conclusion that their product was at fault. He stated that though they battled and recovered from that incident, it was incredibly stressful for the firm. Reflecting on the incident, the CEO said:

> *" In our view, it is an illogical attack on our product. But perhaps one could have said, well, you know, there is a bigger risk that the Inspectorate will misunderstand our products and maybe we could have helped to educate them or, you know, bring them to our company, teach them more or educate them about the nature of our products and our quality, etc, etc. So, it was almost like a new decision-maker came into the game that we hadn't managed and that affected us. These things are always so easy in hindsight to say, you could have anticipated. We did not use any sort of futures methodology; we didn't even do trend analysis. Maybe I was wrong, I thought our business was quite narrow and specific, quite niche, and that we understood it. I thought we kind of understood what our customers wanted in that industry. So maybe that was a bit narrow. Maybe one could have looked more broadly. Maybe that was the crux that as technical people, we were focused on the technical trends."* SM10

4.2.4 Informal Foresight

Firms also engage in foresight without the use of any formal methodologies. Tapinos and Pyper (2018) argue that individuals and firms can look forward under uncertain conditions without using foresight tools. Several managers stated that they engage in

informal forward-looking to identify emerging and probable future weaknesses at times of uncertainty. The Chief Executive Officer (Education Services) was very candid about how they look at the future. He said:

> *"There's always an awareness that what we currently have, and how we deliver our products and services now isn't going to be the way it's going to be done forever. But to a certain extent, it always seems like it's going to be tomorrow's problem. So, we don't do that in a formal way. But in an informal way we do meet, and we do talk about is there something we need to do."* SM4

Similarly, the CEO (mining) discussed how their South African firm diversified into international markets. He stated it was not an outcome of a formal structured foresight process. However, their team thought diversifying would be a promising idea to ensure that they spread their resources to minimise weaknesses (if they arise) within their firm. The CEO clarified that their decision did help when most of their resources in South Africa were rendered ineffective due to the *'longest and most damaging strike in the country's history'* (Reuters, 2013). He commented:

> *"I think if we hadn't diversified or hadn't had the strategy to diversify and hadn't been lucky in how that eventually came together, I think we would have been in serious trouble during that strike period. ……we went about it unconsciously ... subconscious, or without explicitly saying, right, we know in a foresight phase of strategy making."* SM10

Table 4.2 summarises the foresight activities, their definition, value proposition and sample representative quotes.

Definition: Examples in literature	Formal/ Informal	The value proposition of Foresight exercises	Direct Quote from the Data
Forward-looking is “all practices aimed at collecting, examining, and evaluating new information to derive alternative course of action and anticipate their consequences, to the end of raising the likelihood of taking action”. (Jissink et al., 2019, p.1) The forward-looking analysis is conceptualised as "the process individuals follow to produce foresight without any standardised methodology" (Tapinos & Pyper, 2018)	Formal, structured foresight Individual processes, not formal	reduce the behavioural bounds of individuals and facilitate forward-looking search (Schwarz et al., 2019).	*We do forward-looking a lot and then we work around what we foresighted. We have got a good system, we meet weekly, then we have monthly board meetings, we obviously have quarterly risk registers, we are very process-driven*. Chief Operating Officer (Play Equipment) SM11 *We probably did, unconsciously like subconscious, or without explicitly saying, right, we know in a foresight phase of strategy making.* Chief Executive Officer (Mining Equipments) SM10
Horizon scanning	Formal, structured foresight	Horizon scanning allows firms to see around the corner and discern weak signals (Shoemaker, 2018).	*We engage in horizon scanning. So, it's basically saying, okay, what of our main risk areas? And then what information sources have we got that are then going to give us an indicator? What sources have we got with regards to the change in legislation and things like that.* Chief Executive Officer (Consultancy) CO3
Backcasting is making sense of the future by retrospectively looking back at what needs to change to reach the future state (Gioia et al., 2002)	Formal and informal foresight		*One of the things we do is analyse what the what the marketplace is going to look like for the future. what that landscape was going to going to look like, what resource would be required to deliver and what we currently have.* Chief Operating Officer (Education Services) SM4
Scenario Planning is ‘‘a process of positing several informed, plausible, and imagined alternative future environments in which decisions about the future may be played out, for the purpose of changing current thinking, improving decision making, enhancing human and organisation learning and improving performance’’ (Chermack et al., 2002, p. 376)	Formal, structured foresight	Scenario planning increases the firm's capacity to comprehend its environment by altering managers' mental models (Chermack, 2004).	*Now we have developed four to five different scenarios in the business plan. So, we start off the session (managers meetings) by looking at all the data and all the metrics.* Head of Organisational Development (Public Housing) MM1.

Table 4.2: Foresight activities, their definition, value proposition and representative quotes

4.2.5 Lack of Foresight and its Implications

Respondents shared how lack of foresight has led to their firms' developing weaknesses and, in some cases, strategic liabilities. Discussing the role of market research and identifying future trends, the Chief Operating Officer (Play Equipment) said:

> *"People that researched probably succeeded, and the people that did not research failed*." SM11

Respondents have several examples of their firm's failure due to a lack of foresight. The Head of Organisational Development (Public Housing) highlighted how their lack of foresight led to strategic liabilities.

> *"We bought it (solar panel plant) just before the government reduced the feed-in tariffs on the solar panels. That is essentially you buy the solar panels to put on your house so you can reduce your own energy bills, but then any energy that you don't use, you sell back to the National Grid. Just before we bought the factory it was the boom everybody wanted them on, because it was a really sound investment, you could generate some really healthy returns by installing those on your property. When the government reduced the feed-in tariff that became a much less attractive investment for people. So that was naturally falling investment. We hadn't anticipated that changing government policy and we hadn't done enough due diligence before we'd invested this money in the factory."* MM1

Ultimately, the firm sold its solar business for an estimated loss of £3.8m

> *"On 14 July 2016, Romag Limited and Romag PPM Limited were disposed of by Gentoo Group Limited. The anticipated loss on disposal to be reported in year ending 31 March 2017 is estimated at £3.8m".* Company Annual Report, p.109

There are several further examples within the data of firms not reading the future correctly and losing their competitive advantage. Even big multinational companies could misread the future and get caught out. The plant operations Manager

(Automotive) highlighted how the auto company, one of the largest globally, failed to foresee the changes in the EV (Electric Vehicle) sector and was critical in his comment:

> *"We didn't go for the electric and hydrogen cars. And that was just because they (senior managers) did not think, consider …just something that they didn't see in the future."* MM10

Indeed, the Fiat-Chrysler Chief has been sceptical about the viability of electric cars in the past (Greencarreports, 2016) and is now trying to catch up with the other auto majors, which have started their EV projects much earlier.

Interestingly, more examples within the data highlight firms' challenges in identifying future liabilities due to a lack of foresight. The President (Hospitality) explained how their former company, which had retail outlets only in malls, did not foresee the decline of footfalls in malls around the US. Their ruse was that their competitors identified that their stores in malls could be a liability in the future, and they figured out a way to create a successful brand on high streets. The President (Hospitality) explained:

> *"They were only in malls and malls were eventually going to decline. A lot of their competitors had identified that as a weakness like (competitor's name) over here. (Another competitor's name) started as a mall brand. And those companies had figured out a way to create a brand that was also successful off miles like High Street, and Main Street. So (company name), I think, maybe it did identify that as a weakness, and that never really successfully got their brand out of malls."* SM9

Table 4.3 includes the key representative quotes that support the aggregate dimension, 'Identification of Probable Future Resource Weaknesses'.

4.2.6 Section Summary

The overall findings on the first aggregate dimension, "Identification of probable future resource weaknesses' are that firms undertake various foresight exercises to identify future resource requirements and the value dimensions of their current resources. Firms use formalised foresight methodologies like scenario planning, horizon scanning, and backcasting to subconsciously forward-looking at an individual level. The depth

and formal engagement with foresight activities depend on the organisation's size. Larger firms tend to have more structured foresight exercises than smaller firms. Firms value the importance of some form of foresight to find probable future weaknesses. Firms use their understanding of the future to restructure their resource bundle by adding and releasing resources depending on their understanding of the future resource dimensions. Findings also highlight that firms use their systems and processes to monitor and mitigate risks when their foresight indicates potential weaknesses within their resource bundle.

2nd Order Themes	Representative quotations
Structured foresight exercises to identify future weaknesses	"What we do is, every single month, our managers from every single department come down and sit, and they say, what trends do you see in your line of business that you're responsible for? How does that impact my line of business? And how does it affect other people down the chain. We call this as a trend meeting. If we identify any issues or possible changes, we call this a change in the trend that we've seen". SM12, "We have our board meetings once a quarter where we look at our risk register. The risk register includes lots of strategic potential outcomes, downturn in trade, our supply chain issues, our active guard issues, type stuff, and things we got in place. So, we talk through what the strategy would be to overcome it, and the likelihood that it would actually happen at that time".SM11 " We did horizon scanning. So, it's basically saying, okay, what of our main risk areas and then what information sources have we got that are then going to give us an indicator?" CO3 "Because of how we study the market, we understand, where we want to be, then we worked backwards from that and therefore identify what are the resources needed to get to what is the target state". MM4 "So typically, when we do business planning, we would say, right, how many houses we've got, how much rent income we could charge, that's how much we're going to take next year. That's how much we would take the year after that, and what obstacles we might face in meeting those targets. Now we'll have 10 to 15 different scenarios (of where things could go wrong) in the business plan". MM1 "We've got a fairly robust structure in place. We do forward-looking a lot." SM11 "One of the things we do is analyse what the marketplace is going to look like for the future…So we looked at what the landscape was going to look like, what resource would be required to deliver (product), and then build that within the organisation" SM4. "We study the market, we understand, where we want to be, then we work backwards from that and therefore identify, the resources needed to get to what is the target state". SM3

	"We always engage in research, looking for, depending of course on the industry, but looking for trends, or laws and regulations, depending again, on the industry and the specific area that we are looking at" MM7
Unstructured or Limited foresight exercises due to resource constraints	"Firms will focus their efforts on a certain amount of content, which will keep them alive. And kind of things which are almost in the immediate future. Anything which goes past a certain horizon, they won't even think about until it happens. And that will just be where they actually put their own mental resources based on what they have, and where they currently sit…… probably don't consider too far ahead to go to surgery. They don't have the time." MM3 "We just focus on the industry data; we don't do broad environmental scanning". MM4 "In our view is an illogical attack on our product. But perhaps one could have said, well, you know, there is a bigger risk that the Inspectorate will misunderstand our products and maybe we could have helped to educate them or, you know, bring them to our company, teach them more or educate them about the nature of our products and our quality, etc, etc. So, it was almost like a new decision-maker came into the game that we hadn't managed and that affected us. These things are always so easy in hindsight to say, you could we have anticipated. We didn't use any sort of futures methodology; we didn't even do trend analysis. Maybe I was wrong, I thought our business was quite narrow and specific, quite niche, and that we understood it. I thought we kind of understood what our customers wanted in that industry. So maybe that was a bit narrow. Maybe one could have looked more broadly. Maybe that was the crux that as technical people, we were focused on the technical trends." SM10
Informal forward looking analysis	"There's always an awareness that what we currently have, and how we deliver our products and services now isn't going to be the way it's going to be done forever. But to a certain extent, it always seems like it's going to be tomorrow's problem. So, we don't do that in a formal way. But in an informal way we do meet, and we do talk about, is there something we need to do". SM4 "I think if we hadn't diversified or hadn't had the strategy to diversify and hadn't been lucky in how that eventually came together, I think we would have been in serious trouble during that strike period. ……we went about it unconsciously ... subconscious, or without explicitly saying, right, we know in a foresight phase of strategy making". SM10
Failure to identify probable future weaknesses due to lack of foresight.	"They don't want to change their business. But the business as a whole had to change. So that was a liability. That was not really foreseen early. I remember we did talk about it, but it was later on. So yes, that issue was not foreseen very early, I would say". SM9 "We bought it (solar panel plant) just before the government reduced the feed-in tariffs on the solar panels. That is essentially you buy the solar panels to put on your house so you can reduce your own energy bills, but then any energy that you don't use, you sell back to the National Grid. Just before we bought the factory it was the boom everybody wanted them on, because it was a really sound investment, you could generate some really healthy returns by installing those on your property. When the government reduced the feed-in tariff that became a much less attractive investment for people. So that was naturally falling investment. We had not anticipated that changing government policy and we had not done enough due diligence before we had invested this money in the factory". Managing Director (Pharmaceutical) SM13

“We just taught six months ahead. One month into launch, we are already realizing we were wrong. And this could have been part of the planning stages. It did not have to come after we launched the product. So, I feel that we should have done some forward looking, its important and it does help business strategize and solve problems before they arise”. SM12
“We did not go for the electric and hydrogen cars. And that was just because they (senior managers) did not think, consider …just something that they did not see in the future”. MM10
“They did not have anybody at that time who was actually looking at the implications and scanning the environment and looking at sort of people's attitudes towards the environment and its impact on legislation. There were lots of indicators there. But for whatever reason, they did not pick it up and this had a big impact on their business”. CO3
“I think we probably had a broad foresight, but not detailed foresight, we didn't foresee the detailed difficulties at the time”. SM10
“They were only in malls and malls were eventually going to decline. A lot of their competitors had identified that as a weakness like (competitor’s name) over here. (Another competitor’s name) started as a mall brand. And those companies had figured out a way to create a brand that was also successful off miles like High Street, and Main Street. So (company name), I think, maybe it did identify that as a weakness, and that never really successfully got their brand out of malls”. SM9
Pizza Hut started their business focused on dine-in restaurants, red roofs, they called them. And then in the 80s and 90s, the delivery business took off with Domino's Pizza, Papa John's, and Pizza Hut getting into that business in two ways, one is it had delivery within those big dining restaurants - red roofs. So, it delivered pizza from its dining restaurants. And it set up delivery units the same way Domino's did, which are much smaller, typically in the middle of strip malls. So, they had two ways of getting delivery areas, getting their product out to customers. Problem was that over time, the dine-in business declined. And so, they were left with a lot of dine-in assets that really would not do much dine-in revenue. The majority of the revenue was in delivery. So, the liability was that they had a bunch of franchisees and franchisee contracts with these assets... where the revenue was not anymore. That was not foreseen early. I remember we did talk about it, but it was later on. So yes, that issue was not foreseen very early, I would say” (SM9).

Table 4.3: Identification of Probable Future Resource Weaknesses (Representative Quotes)

4.3 Identification of Current and Emerging Weaknesses

4.3.1 Introduction

One of the critical aspects revealed from the data is that firms use their insight into their resources, supply chain, tasks, and the industry environment to understand their resource fungibility and identify and mitigate current and emerging weaknesses. Firm-specific resource cognition, insight into the task and the industry environment and an insight into the interplay between these variables are critical in identifying current and emerging weaknesses. Such insight allows firms to develop a strategic mindset awareness that provides them with strategic action possibilities (York & Nicolaides, 2012) in mitigating a weakness.

Indeed, how and to what extent firms use their dynamic capabilities depends on their manager's cognition of their resources (Danneels, 2010). Furthermore, data shows a widely held belief that managerial experience has a compelling influence on the ability to see through uncertainty by reading the firm's current situation and, more importantly, recognise current weaknesses and potential areas where the firm might develop weaknesses within its resource bundle.

4.3.2 Resource Weakness Cognition

4.3.2.1 *Awareness of the firms' resource dimensions and their limitations*

Several respondents often repeat the word '*awareness*'. Respondents believe a critical awareness of the firm's resources, including its fungibility and limitations, is fundamental in identifying and managing its weaknesses. As Danneels (2002; 2010) states, having a mental model of the firm's resources and potential applications is critical, going beyond looking at its products and services.

The current pandemic and the resulting uncertainty have presented several examples of how firms' mental models of their resources and their potential applications reduce the building up of weaknesses within their bundle. Explaining why their firm managed the uncertainty posed by the pandemic better than other firms, the Chief Operating Officer (Play Equipment) stated that *"if we were not very self-aware'* we would have probably failed to get through the pandemic.

When asked to expand on what he meant by '*self-aware*', the CEO highlighted the critical role of firms being aware of their resource dimensions and added:

> *"People that are very aware of the numbers and abilities would have succeeded. And the people that were not very close to their numbers have probably failed."* SM11

Sharing a similar belief, the Managing Director (Consultancy) said

> *"It's basically about self-awareness, it's about understanding what you can cope with."* CO2

Informants believe awareness of their firm's resources is critical when managing weaknesses. The President & Chief Executive Officer (Automation) expressed:

> *"As long as you have got that awareness, then I think you can manage those risks reasonably well."* SM7

Sharing a similar position, the Senior Manager (Automobiles) explained how Hyundai's (India) understanding of its staff needs enabled Hyundai to protect its staff while also continuing to produce cars. Their competitors stopped production and sent their staff home, believing that was the best way to protect their critical resource (staff) during the initial months of the pandemic. He explained that Hyundai and Ford (in India) took a vastly different view of the needs of their staff, which is a critical resource in their industry. The Senior Manager (Automobiles) recalled:

> *"Hyundai decided that to protect its people (staff) that we must run the business."* MM6

The Senior Manager (Automobiles) explained the rationale behind Hyundai's decision. He said most of their factory workers are either *'bachelors'* or from other '*parts of the state/ country.*' Hence, closing the factory for staff *'staying alone is difficult during the pandemic period because no food and no one to take care of,'* is not good. It was a clever idea to take care of the staff by providing them temporary accommodation closer to the factory. The Senior Manager

(Automobiles) believes that with the awareness of the dimensions of their resources (staff), they brought in their capabilities and innovative thinking to protect the firm's critical resources from becoming a weakness.

The data set has a similar example, albeit from a different industry and continent, highlighting that this theme is the generic nature of this theme. The Operations Manager (Meat Industry) of a meat factory that specialises in supplying cut meats to restaurants in Toronto narrated that when faced with a dramatic drop in demand for their meat products from restaurants due to their closure during the pandemic, they had to find alternative markets to sell their products or shut their factory. Based on their understanding of their plant and machinery and the markets, the manager explained how the operations team helped the firm quickly change its resource dimensions from weakness to strength. In this case, the firm's operations team reorganised the utility of their machinery by making quick modifications to the system and learning to use their machines to make distinct types of meat cuts that are more suitable for retailers (grocery). The manager stated that the operations team's critical knowledge of their machinery, skills, and experience in making modifications enabled them to make the necessary system changes and continue running their factory.

> *"Our setup is not set for retail like the equipment, or the machinery is not set for retail. But then we had to jump in straight away. So, what ended up is yes, we produced* (meat cuts for the retail market), *So it was a quick turnaround for us. Of course, lots of learning, lots of challenges, lots of mistakes, lots of rebuilds, and so on."* MM4

Firms that lack an understanding of their resources may not fully achieve the potential of their resources. Furthermore, this lack of understanding may lead to the resource or other resources within the bundle becoming a weakness from their interplay. Talking about the need for firms to have a good knowledge of their resources and their interplay, the Director (Food Safety Consultancy) shared an example:

> *"A daft example would be I have been in a food company they had bought a big mixer unit. They could not get the mixer where they wanted to get it. So, they cut the legs off, so they could get it through. That may not sound bad for you, but that meant at the bottom, there was like 20 mil to 25 mil gaps,*

how are they going to clean under that? You know, and this is in a bakery, and they use flour, you know, it just beggars' belief." CO3

Unfortunately, the Director added that the firm failed to meet the required health and safety standards, leading to a loss of reputation and additional costs in making the necessary changes to their machinery.

The depth of insight a firm should possess scales with the sophistication and breadth of resources that make up that firm. Firms with highly technical resources should have relevant knowledge of the technologies. The Chief Executive Officer (Oil and Gas), who was part of Air Products decommissioning team at Teesside, explains why the company had to write off almost a billion pounds. He recalled:

"We looked at two plants in Teesside operated by Air Products and they built them on the basis that what they found was to create energy from waste. Fantastic idea. So, they built these pilot plants, and the pilot plant was only a fifth or sixth the size of the real plant and other pilot plant work very well. Air Products built two brand new plants and they built one 100% complete and the other one was about 75% complete. And they started to commission it and realised a fatal flaw in that design, it would not work. It could not work cause the hot plasma was so intense, it basically burned the heat protected shield of the reactor and so it failed. They must write off 800 million pounds of the plant which is only run or tried to run for a week. it is an incredible waste … not one person stood back and said right, well it runs on a pilot plant. How do you know it will run as a full-sized plant because no one had done that information that just assumed it would, but it could not? They spent so much money." CO1

Press reports confirm the scale of the damage to the firm:

Air Products has opted to face a $1bn write-off in preference to carrying on with their doomed gasification projects in Tees Valley… in April 2015 when they boasted that: "…Air Products has successfully completed commissioning with Tees Valley 1 (TV1), and it is well into its start-up phase. It is expected to enter commercial operation later this year…" CO11

Another example in the data comes from a health re-insurance company that has several types of legal contracts to protect the strength dimensions of the firm's resources by mitigating probable future liabilities. The Vice President (Health Insurance) highlighted the importance of understanding the contents of a firm's key documentation/ contacts and how their lack of due diligence led to financial losses during the pandemic. He acknowledged:

> *"Well, for us an issue is the way that our contracts were drafted pre-COVID. Nobody has bothered to sit down, read up these templates. So, one of the key issues that we found is that since pandemics and epidemics are so rare and are so unforeseen, and was something which was never expected, these contracts and wordings that were drafted were not given enough importance and proper cover. Because if we had drafted these wordings adequately the way we have redrafted them post January, they would have protected us or shielded us against a lot of liabilities that we had to incur due to COVID."* SM12

Firms sometimes make resource acquisition errors. Firms must recognise such errors and make the necessary changes to ensure that they remove any weaknesses. Firms may identify such errors as the resource manifests its weakness. The Chief Executive (Media) shared his experience on the importance of awareness of errors in resource accumulation leading to the emergence of any weakness within a firm, the cost of removing such weaknesses and having policies and procedures to mitigate or remove such weaknesses. He recalled:

> *"In the early days of Sky TV, where I worked, once upon a time, there was a guy who was the chief executive. He had a philosophy that if a person was in the wrong job, or they were a blocker, they were causing a problem, pay what it takes to get rid of them. You cannot apply that to every firm. It depends on how much cash organisations have available." SM6*

Data shows that firms believe their critical insight into the limitations of their resources and capabilities is crucial to minimise weakness development. Such insight places them in an advantageous position to manage those resource weaknesses. Data also highlights that understanding their resource weaknesses is critical to ensure that firms do not enhance the weakness dimensions of that resource and other related resources.

Several respondents highlight this. The President (Hospitality) said:

> *"People do not like talking about weaknesses, and they do not like admitting that they have any weaknesses, personally or in the business. So, to have a strategy, you must have the vulnerability to acknowledge what your weaknesses are, and, what you are okay with being weak at."* SM9

Discussing one of their key limitations (limited financial resources to recruit capabilities compared to their competitors) and how that insight enables the firm to focus on its strengths, the Chief Executive Officer (Education Services) said:

> *"We are very successful with things like customer service and the day to day running of the business. But when it comes to pure assessment expertise, we do not have the strength of firm (X) or (Y). They have teams of people that we simply cannot compete with."* SM4

Further elaborating on their strategy, the CEO clarified that his firm is very much aware of the limitations of their (financial) resources, and this ensures that they do not stretch themselves into areas where their competitors may have an advantage due to their relative resource strengths. The firm has focused on carving out a niche area that might be less vulnerable to disruption by firms with particular resource strengths. Sharing further on this note, the CEO (Education Services) said firms like Google or Amazon could disrupt their business. These firms may just come along and offer programmes online and take over the market. However, he argues that while there could be a disruption for some programs like business, admin, and customer service, they design some qualifications like nursing and childcare with a license to practice.

> *"We are lucky enough to have worked hard enough to secure childcare (approved by the government) which is one of our biggest areas….and which could keep us secure for the foreseeable future."* SM4

Hence, the CEO believes firms must have an insight into the strengths and weaknesses dimensions of their resources and how they may interplay when the market dynamics change.

The utilisation of a firm's resources for purposes other than what they were accumulated for (i.e., non-strategic/mission-critical operations) is also identified as a weakness for a firm as it may erode the ability of the firm to achieve the full capability of that resource. Explaining how firms sometimes may lose focus and miss utilising their critical resources, the Chief Executive (Media) shares where his firm may develop a risk.

> *"With non-profit organisations, particularly if you charge for services, you have got to balance the implementation of the mission with winning enough revenue, and you can get an imbalance. It is making sure you keep the right balance between money and mission. And that is not always easy."* SM6

Table 4.4 includes the key representative quotes that support the second-order concept, 'Resource Weakness Cognition'.

2nd Order Themes	Representative quotations
Awareness of the firm's resource dimensions and their limitations.	*"We were almost entirely technical people. The technical side was intuitive….and talking to you kind of made me realize a bit that I think we were technically orientating with foresight, but perhaps not more broadly, politically, economically, and socially. What you read in the paper, might have an impact subconsciously. But we were not focused on it".* SM10 *"People that are very aware of the numbers and abilities would have succeeded. And the people that were not very close to their numbers have probably failed". SM11* *"it is basically it's about self-awareness, it's about understanding what you can cope with. CO2* *"As long as you've got that awareness, then I think you can manage those risks reasonably well". SM7* *"Hyundai decided that to protect its people (staff) that we must run the business." (*MM6) *"Our setup is not set for retail like the equipment, or the machinery is not set for retail. But then we had to jump in straight away. So, what ended up is yes, we produced* (meat cuts for the retail market), *So it was a quick turnaround for us. Of course, lots of learning, lots of challenges, lots of mistakes, lots of rebuilds, and so on" MM4.* *"A daft example would be I have been in a food company they had bought a big mixer unit. They could not get the mixer where they wanted to get it. So, they cut the legs off, so they could get it through. That may not sound bad for you, but that meant at the bottom, there was like twenty mil to 25 mil gaps, how are they going to clean under that? You know, and this is in a bakery, and they use flour, you know, it just beggars' belief.* CO3 *We looked at two plants in Teesside operated by Air Products and they built them on the basis that what they found was to create energy from waste. Fantastic idea. So, they built these pilot plants, and the pilot plant was only a fifth or sixth the size of the real plant and other pilot plant work very well. Air Products built two brand new plants and they built one 100% complete and the other one was about 75% complete. And they started to commission it and realised a fatal flaw in that design, it would not work. It could not work cause the hot plasma was so intense, it basically burned the heat protected shield of the reactor and so it failed. They must write off 800 million pounds of the plant which is only run or tried to run for a week. it's an incredible waste … not one person stood back and said right, well it runs on a pilot plant. How do you know it will run as a full-sized plant because no one had done that information that just assumed it would, but it could not? They spent so much money*. CO1 *"Well, for us an issue is the way that our contracts were drafted pre-COVID. Nobody has bothered to sit down, read up these templates. So, one of the key issues that we found is that since pandemics and epidemics are so rare and are so unforeseen, and was something which was never expected, these contracts and wordings that were drafted were not given enough importance and proper cover. Because if we had drafted these wordings adequately the way we have redrafted them post January, they would have protected us or shielded us against a lot of liabilities that we had to incur due to COVID".* SM12

	"In the early days of Sky TV, where I worked, once upon a time, there was a guy who was the chief executive. He had a philosophy that if a person was in the wrong job, or they were a blocker, they were causing a problem, pay what it takes to get rid of them. You cannot apply that to every firm. It depends on how much cash organisations have available. SM6 *"People do not like talking about weaknesses, and they do not like admitting that they have any weaknesses, personally or in the business. So, to have a strategy, you must have the vulnerability to acknowledge what your weaknesses are, and, what you are okay with being weak at".* SM9 *"We are very successful with things like customer service and the day to day running of the business. But when it comes to pure assessment expertise, we do not have the strength of firm (X) or (Y). They have teams of people that we simply cannot compete with". SM4* *"There's always an awareness that what we currently have, and how we deliver our products and services now isn't going to be the way it's going to be done forever". SM4* *"With non-profit organizations, particularly if you charge for services, you have got to balance the implementation of the mission with winning enough revenue, and you can get an imbalance. It is making sure you keep the right balance between money and mission. And that is not always easy. SM6* *Often people do not see their own flaws. And depending on the ego and personality of the people in charge, in theory, companies bring in non-executive directors to help plug gaps. But they also need the self-awareness to realize there is a gap and it is a problem, that does not always happen. MM3* *I think one of the differences I suppose between my generation, and I'm 43 for the tape, is that to a certain extent, when you purchase something from an organisation, I would suggest that you just bought it on the thing that you could see the service that was provided, the quality of the product or whatever. But my understanding of millennials in particular, late teens, and early 20s, are much more interested in what that company stands for, why they exist, what they are doing in terms of their practices, and what effect are they having. And I have labelled that under the societal asset. ……. and if we are not careful as an organisation, that might be the type of thing that tips it over the edge. SM4*

Table 4.4: Resource Weakness Cognition (Representative Quotes)

4.3.2.2 *Addressing gaps in knowledge*

Indeed, data shows that people closer to resources are better placed to understand and identify weaknesses within those resources. During the pilot study, while discussing the lines of enquiry, The Chief Executive Officer (Consultancy) said:

> *"If you were talking to a plant manager of a plant that manufactures clutches or drives belts that go into* (cars), *his focus will be on infrastructure, because he is dealing with a just-in-time system that (the automobile company) demands, paying a premium for it, and failure is not an option because they lose the contract. Equally, if you are talking to the department head that specialises in designing, where the design and modifying is all theory, there is nothing practical…, they will think in terms of human resource weaknesses."* CO1

While senior management is more focused on future strategic weaknesses, operational-level managers are more focused on resource weaknesses at the operational level. Data also show that senior managers are better aware of strategic weaknesses, whereas operational managers better understand weaknesses within their respective domains of responsibility. This is more prevalent in large organisations with steep hierarchies, as the Plant Operations Manager (Automotive) believes:

> *"Middle/ lower-level managers have more operational or focus knowledge of what they do. But senior managers have more of a strategic not the operational knowledge."* MM10

Due to time constraints, senior managers focus on more strategic issues and expect middle management to identify and resolve operational weaknesses. However, a lack of attention to operational weaknesses can quickly accumulate and become a strategic weakness. Data shows that firms use various processes to plug the gap in their understanding of their resource weaknesses (strategic and non-strategic).

One of the key findings from the data is that firms establish various procedures and protocols to facilitate the flow of information around any weaknesses within the firm's resources. The Chief Operating Officer (Hospitality) explains how his firm identifies and mitigates weaknesses. He stated:

> *"Communication is very regular and open and closed both ways. That is the beauty of our organisation, a very open form of communication, there are no*

hierarchy barriers, and everybody's free to talk to anybody. And if there is a problem, you need to identify it as early as possible. Managers are incentivised if they can identify a potential weakness beforehand and resolve it." SM1

The General Manager (Public Services Provider) provides another example. He shares how his firm uses risk registers as a data-gathering tool to get relevant information from the departments and monitor weaknesses within their resources. He explained:

"We have something called a risk register we use a tool that allows us to identify, the inherent risk, the residual risk, and the target risk and it produces a dashboard. So, the inherent risk is what is that risk if we do not do anything, and the residual risk is what does that look like given all the mitigating actions that we are taking? And then the target level is what the graph would look like….. For those of us who are around, health and safety environment, business continuity, profitability in the business, and cost management some of them can be based on compliance and finance. And so, we review those risks regularly…. And then once a year, we start the process again and do not even look at the current risk register. And so, where we are now, what are the key risks and compare that and then build it up again. Otherwise, if you just leave it as being an organic risk register for too long, it does not generate fresh thinking about what the emerging risks are." SM2

The Vice President (Health Insurance) shared another exciting example. Their firm has a system that requires the relevant departments to review all the risks to the resources managed by the individual teams. In doing so, they ensure that all relevant information on any potential weakness is shared by teams closer to a particular set of resources. The firm can only proceed with the contract if all the relevant departments are convinced that the resources within their control do not develop any weaknesses.

"What happens in (Y), you need a technical person, plus you need the sales guy or the business development, we call them the client manager. The technical manager should come to an agreement for any decision to pass. If either one of them is not able to take a firm decision or does not agree to the other's point of view, a contract does not get passed." SM12

Firms also have protocols and systems to identify non-strategic/ benign weaknesses that may develop into strategic weaknesses. The Chief Executive Officer (Engineering) offer a simple example to illustrate the protocol within his firm:

> *"I will take a very mundane example, one of the items that our admin people must look after is transportation. Let us say that billing is not happening on time from our supplier to us. And if it is a matter of a few days, then I let the admin handle it. But if it becomes a matter of months, that means we accumulate liabilities, at which point I would like to be able to step in. So, it is a matter of how and at what stage we escalate things. I have given you a very simple example. Just so that you can understand what small problems that are delegated at a certain stage can become bigger, and at some level, I need to become involved. But if they are handled at the stage of a few days, it's fine. And the same happens for all kinds of weaknesses or problems that are emerging, where they can be left for staff, juniors, and subordinates to handle. And at some point, if they become of a certain scale, that is when I would need to step in. There is no aspect of the business where it cannot become big enough for my attention."* SM3

However, respondents also agree that it is challenging for firms to have information on the perception of weaknesses passed on to the firm by the staff members. These challenges could be due to several reasons, including leadership, organisational culture, and complacency. This lack of information stifles the firm from having an insight into its weaknesses. The Operations Manager (Manufacturing - Cannabis) pointed:

> *"Usually the feedback from employees, who is on the floor, I would say like the real action guys, versus the suggestion guys, which I consider the higher management or leaders of the team, in most cases, we do have feedback session we talk about a lot. ….. Because being in the middle of higher management versus actual employees, I see a lot of gaps in the data provided to the senior management."* MM11

The Partner and Account Manager (Maintenance) shared a similar scenario in his previous firm. He recalled the firm's significant customer service issues leading to

reputation loss. The firm tried to fix its problem, and as part of this, senior managers spoke to their front-line employees. However, he recalled:

> *"They (management) thought that putting the right people and putting the rights processes in place would allow them to improve the expectation of customer service. And they did have some meetings for the problems they were facing and what can be done better. But somewhere, I felt that they had this narrow mindset. First, not many people were sharing the information, because people have this fear that, if I share, I might be a bad person in the team."* MM9

The Managing Director (Consultancy) cites that this gap in information, especially around weaknesses within the firm, is a typical problem firms face. Interestingly, the Managing Director said, from his experience as a consultant, that when they offer their services to firms, most of the information surrounding the resource dimensions of the firm comes from the firm's employees. He said:

> *"Strategic solutions inside businesses are normally given to consultants because of the way consultants consult their staff. They (staff) would tell a stranger; a lot more than they would probably tell their senior manager." CO2*

Additionally, data shows that the smaller the firm, the better the managers can understand their weaknesses. The Managing Director (IT) said:

> *"I think that because my business is quite a small business, I am very aware of the weaknesses and constantly trying to change them into strengths. You know, that is always the challenge*." SM5

Lack of resource cognition, especially in the upper echelons of management, is viewed as a weakness. Additionally, any gaps in understanding may cause friction between the management levels, as the Operations Manager (Cannabis) maintained:

> *"If the leader does not have a proper understanding of operations, it will be difficult for us to execute."* MM11

Table 4.5 includes the key representative quotes that support the second-order concept, 'Gaps in Knowledge'.

2nd Order Themes	Representative quotations
Gaps in knowledge	*"If you were talking to a plant manager of a plant that manufactures clutches or drives belts that go into* (cars), *his focus will be on infrastructure, because he is dealing with a just-in-time system that (the automobile company) demands, paying a premium for it, and failure is not an option because they lose the contract. Equally, if you are talking to the department head that specialises in designing, where the design and modifying is all theory, there is nothing practical…, they will think in terms of human resource weaknesses.* *"Communication is very regular and open and closed both ways. That is the beauty of our organisation, a very open form of communication, there are no hierarchy barriers, and everybody's free to talk to anybody. And if there is a problem, you need to identify it as early as possible. Managers are incentivized if they can identify a potential weakness beforehand and resolve it". SM1* *"We have something called a risk register we use a tool that allows us to identify, the inherent risk, the residual risk, and the target risk and it produces a dashboard. So, the inherent risk is what is that risk if we do not do anything, and the residual risk is what does that look like given all the mitigating actions that we are taking? And then the target level is what the graph would look like….. For those of us who are around, health and safety environment, business continuity, profitability in the business, and cost management some of them can be based on compliance and finance. And so, we review those risks regularly…. And then once a year, we start the process again and do not even look at the current risk register. And so, where we are now, what are the key risks and compare that and then build it up again. Otherwise, if you just leave it as being an organic risk register for too long, it does not generate fresh thinking about what the emerging risks are".SM2* *"What happens in (Y), you need a technical person, plus you need the sales guy or the business development, we call them the client manager. The technical manager should come to an agreement for any decision to pass. If either one of them is not able to take a firm decision or does not agree to the other's point of view, a contract does not get passed". SM12* *"I will take a very mundane example, one of the items that our admin people must look after is transportation. Let us say that billing is not happening on time from our supplier to us. And if it is a matter of a few days, then I let the admin handle it. But if it becomes a matter of months, that means we accumulate liabilities, at which point I would like to be able to step in. So, it is a matter of how and at what stage we escalate things. I have given you a very simple example. Just so that you can understand what small problems that are delegated at a certain stage can become bigger, and at some level, I need to become involved. But if they are handled at the stage of a few days, it's fine. And the same happens for all kinds of weaknesses or problems that are emerging, where they can be left for staff, juniors, and subordinates to handle. And at some point, if they become of a certain scale, that is when I would need to step in. There is no aspect of the business where it cannot become big enough for my attention". SM3* *Usually the feedback from employees, who is on the floor, I would say like the real action guys, versus the suggestion guys, which I consider the higher management or leaders of the team, in most cases, we do have feedback session we talk about a lot. ….. Because being in the middle of higher management versus actual employees, I see a lot of gaps in the data provided to the senior management".* *They (management) thought that putting the right people and putting the rights processes in place would allow them to improve the expectation of customer service. And they did have some meetings for the problems they were facing and what can be done better.*

	But somewhere, I felt that they had this narrow mindset. First, not many people were sharing the information, because people have this fear that, if I share, I might be a bad person in the team. *"Strategic solutions inside businesses are normally given to consultants because of the way they consult their staff. They (staff) would tell a stranger; a lot more than they would probably tell their senior managers". CO2* *"If the leader does not have a proper understanding of operations, it will be difficult for us to execute and. if the leader is not actually supporting the execution side, the team will start moving out. MM4* *"They have the worst reputation in the country for operators who would connect the LPG hose and then set off connected to a big 12-ton tank of LPG. And that they had lots and lots of gas escapes. So, they came to me and asked in I can help. I looked at the common statistics of the country on typical automotive plants that used LPG. It is called a pull away where the operator connects, sits on the other side, whether it is for 10 minutes, and suddenly sets off without disconnecting it, and pulls the hose off. I think typically, most companies would have one pull away in six months, sometimes one a year. X (company name) had something like 12 in a week. That shows just how bad it was. …. So, I said, "Can I pay a visit to have a look around?" What I found when I walked around the place…. you only must look at the lintels on top of doors. They were all bashed in because the mast of the trucks was too high, and it just whacked it. When I looked at the LPG charging station, what I found was that all the forklift truck operators were employed from an agency* (not by the factory)*, and they were on a minimum wage. ……And it was no surprise they had the worst accident stats. ….. I was surprised by that lack of control because that was an Achilles heel for them. Just by the grace of God, no one was killed by these problems, because these could release a huge amount of gas very quickly. There could have easily been an explosion. But from the outside, no one would see it has been an issue. And I have seen that in other places where there is a loss of focus because it is not the main event……. Because the guys are becoming complacent. They are losing control. And that is the thing. Loss of control inevitably brings bad news". CO1* *let us just say the senior management of that company could not understand why it was such a big problem because before the growth came, everything was under control and everything, nothing is changed. Well, the one thing that changed was there was more salespeople put in more of the problem into the pipeline, which created the venturian and that is where the blockage comes from CO2.* *"I do not think so. I think that because my business is quite a small business, I am very aware of the weaknesses and constantly trying to change them into strengths. You know, that is always the challenge. I think it is probably more for larger organizations, you know. I guess the board of directors, the CEOs, and the decision makers and maybe that step or two steps, nearly three steps further away from the from the coalface. And then maybe not aware of some of the day-to-day challenges that the business has. I think at a small business like mine, you are very aware of them." SM5* *"Often people don't see their own flaws… they also need the self-awareness to realise there is a gap and it's a problem, which doesn't*

	always happen". MM3

Table 4.5: Gaps in Knowledge (Representative Quotes)

4.3.2.3 *Knowledge of the potential predictable weaknesses*

Several managers identify weaknesses that could arise from within the firm's resource bundle that are more predictable broadly. The firm must have an awareness/ insight into the most probable weaknesses that the firm can develop in the future. They are probable due to the nature of the resources within the bundle and the industry in which the firm operates. These predictable weaknesses indeed come from the first principles (generic). Some could be firm-specific, and some industry-specific.

Generic Weaknesses/ First Principles

Discussing the predictability of weaknesses within the products and services firms offer and how they translate to weaknesses within the resources that go into making those products and services, the CEO (Education Services) said:

> *"There's always an awareness that what we currently have, and how we deliver our products and services now isn't going to be the way it's going to be done forever."* SM4

The President & Chief Executive Officer (Automation) who shares this view said:

> *"One of the biggest issues you have when you make hardware is, … the components become obsolete…. these are largely predictable things and then you can manage that risk because, you know, it's going to happen. You have awareness that these things are going to become obsolete. It is just the nature of it."* SM7

Acknowledging some of the generic weaknesses of their firm, the General Manager (Public Services Provider) said:

> *"I would say the biggest potential weakness is around finance and funding. Making sure that you have enough reserves to finance the business, so managing the cash flow and the credit control necessarily because of that to make sure that you naturally continue the trade."* SM2

The Head of Mfg. Quality (Automotive) echoes a similar view. He said that in their line of business, some weaknesses could arise in any manufacturing firm, that they have an awareness of those weaknesses, and that it is common practice for firms to have contingency plans. He said, for example:

“It can be a material shortage, or a power shutdown can happen. Those things are foreseen. Then a plan is made accordingly.” MM6

Firm-Specific Weaknesses

The General Manager (Public Services Provider) also identified some of his firm-specific weaknesses. Their firm's key advantage is using aviation fuel for their fire training exercises. Aviation fuel creates black smoke, making for a very authentic training experience. However, most fire training centres burn gas for clean burns. The CEO believes that due to the environmental impact, the government may change legislation prohibiting them from using aviation fuel burn, resulting in most of their current equipment being useless and the firm losing its competitive advantage. General Manager acknowledged:

“So, change in any legislation nationally or locally, and if we lose that kerosene burn, which will harm the business.” SM2

Another potential firm-specific weakness is its training ground. General Manager said that since the land they are currently using for training is on 'lease' if they could not get a lease extension, that could be a significant issue for the firm. He said:

“If we couldn't relocate that would close the business because just the sheer cost and disruption of relocating all of these simulators for a business our size and not being able to trade for six months while that was happening, we would just close the business in that event, if we didn't have access to the fire ground.” SM2

When a firm’s competitive advantage is around specific organic resources developed over time, any weaknesses in those resources could be considered firm-specific. Discussing how their online system allows them to monitor relevant data in real-time, the Vice President (Health Insurance) explained.

“For us, it is very important that we keep a very keen eye in terms of two factors. One is the average cost, and the other one is the utilisation pattern. Average costs being how much we pay for each service that this industry provides us, and the utilisation is how often a service is prescribed to one of my customers by this industry. So, what we have in place is basically an online system where- - what we monitor are these two factors in a real-time basis.” SM12

Hence, for this insurance firm, the inability to monitor real-time data is either due to weaknesses in the resources that enable the firm to capture such data or if the firm cannot fix the weaknesses, they have firm-specific weaknesses. The Vice President (Health Insurance) acknowledge that this can be a potential weakness for their firm.

Industry and macro environment Specific Weaknesses

Specific weaknesses can be foreseen due to the nature of the industry and the macro environment in which the firm operates. While the following example may also be considered generic due to the nature of the business (fire training) and the industry in which the firm operates, the General Manager (Public Services Provider) acknowledges that Health and safety equipment, training, skills, and compliance monitoring systems are some of the resources that may pose a risk to the firm due to the firm operating in a highly regulated industry.

> *"So, health and safety, compliance and environmental compliance, to make sure that you don't run any reputational risks or risks of sanctions by the regulatory authorities."* SM2

Hence, any shortfall in the firm's (resources') ability to meet the regulatory requirements is a weakness that puts the firm at a competitive disadvantage, including sanctions and reputation loss.

In addition to industry-specific weaknesses, some weaknesses are more predictable for firms operating in industries that are influenced by the macro environment. For example, the Chief Executive Office (Education Services) identified that one of their probable weaknesses is the unpredictable nature of their sector's government policies and regulations. He lamented that historically, there were several changes in policies/ regulations by the governments affecting their sector. Hence, the firms in their sector face uncertainty around accumulating resources that will give them a competitive advantage in the long term. Discussing how his firm could see its resource strengths become a weakness due to the nature of the industry in which they are operating, the CEO said:

> *"I suppose it is government policy….it appears that ministers in the government have a view of how (further) education should work, that they don't generally*

get involved in other sectors. So, in terms of health or defence, or even at higher education, I would say they have less interference from government and ministers than what further education does." SM4

Other examples within the data set include how geopolitical issues may affect some firms. The Chief Executive (Media) gave this example:

"We can be affected by geopolitical issues, as much as anything else. We often work in what you might call closed or illiberal regimes. A funder may change their attitude to a region or an area. And you must keep abreast of the dynamics of geopolitics to make sure that where the funders want to target and what the issues are." SM6

It is important to note that there is no clear separation between generic, firm-specific, and industry-specific weaknesses. Generic and industry-specific weaknesses can become firm-specific if a firm cannot mitigate them better than its competitors.

Table 4.6 provides the key representative quotes that formed the first-order concept, 'Knowledge of the Potential Predictable Weaknesses.

2nd Order Themes	Representative quotations
Knowledge of the potential predictable weaknesses	*"There is always an awareness that what we currently have, and how we deliver our products and services now is not going to be the way it is going to be done forever. SM4* *"One of the biggest issues you have when you make hardware is, … the components become obsolete…. these are largely predictable things and then you can manage that risk because, you know, it's going to happen. You have awareness that these things are going to become obsolete. It is just the nature of it".SM7* *We are very successful with things like customer service and the day to day running of the business. But when it comes to pure assessment expertise, we do not have the strength of firm (X) or (Y). They have teams of people that we simply cannot compete with. SM4* *"I would say the biggest potential weakness is around finance and funding. Making sure that you have enough reserves to finance the business, so managing the cash flow and the credit control necessarily because of that to make sure that you naturally continue the trade". SM2* *it is basically it's about self-awareness, it's about understanding what you can cope with. And if you understand what you can cope with, that basically means you need an avenue, inside a business to say, it's now beyond my level of competency, I need some help, and not feel that's a weakness. CO2* *"It can be a material shortage, or a power shutdown can happen. Those things are foreseen. Then a plan is made accordingly". MM6* *So, change any in legislation nationally or locally and if we lose that kerosene burn, that will harm the business. SM2* *"And we couldn't relocate that would close the business because just the sheer cost and disruption of relocating all these simulators for a business our size and not being able to trade for six months while that was happening, we would just close the business in that event if we didn't have access to the fire ground. SM2* *"For us, it is very important that we keep a very keen eye in terms of two factors. One is the average cost, and the other one is the utilisation pattern. Average costs being how much we pay for each service that this industry provides us, and the utilisation is how often a service is prescribed to one of my customers by this industry.* *So, what we have in place is basically an online system where-- what we monitor are these two factors in a real-time basis".* *"So, health and safety, compliance and environmental compliance, to make sure that you don't run any reputational risks or risks of sanctions by the regulatory authorities".*

	I suppose it is government policy….it appears that ministers in the government have a view of how (further) education should work, that they don't generally get involved in other sectors. So, in terms of health or defence, or even at higher education, I would say they have less interference from government and ministers than what further education does. SM4 *we can be affected by geopolitical issues, as much as anything else. We often work in what you might call closed or illiberal regimes. A funder may change their attitude to a region or an area. And you must keep abreast of the dynamics of geopolitics to make sure that where the funders want to target and what the issues are.* *Firms lose trust when they lose focus of the mission. So if they are purely about money, but do not consider the service or the product as important as the money, that's when they lose trust. And I think all organizations must be credible. Credibility is very easy to lose. And it has happened in the sector that I come from, the media industry, and specifically the news industry.SM6* *If there was a death or a serious injury, due to one of our actions or omissions, …..and that would lead to some wider reputational damage which could affect the sustainability of the business.SM2*

Table 4.6: Knowledge of the potential predictable weaknesses (Representative Quotes)

4.3.3 Knowledge of the Eco-system

4.3.3.1 *Introduction*

Data highlights the need for firms to have a deep insight into the firm's value network, customers, competition, and the industry to understand and identify current and emerging weaknesses.

When asked how firms identify and mitigate potential and emerging weaknesses, managers emphasise the importance of knowing their eco-system well. They also identify the ability to have critical insight into the firm's customers and suppliers and how they perceive their future might unfold as crucial to avoid weaknesses within the firm's resource bundle. The Chief Executive (Media) expressed that '*an inability to keep in touch with the market'* could result in firms being unable to identify their resource dimensions' trajectory.

4.3.3.2 *Awareness of the current and emerging weaknesses from within the value network*

Understanding how value chain partners are faring and how changes to critical resource dimensions within the value chain may influence the firm's resource bundle are critical in identifying emerging weaknesses.

Several informants agree that critical knowledge of the value chain partners enables firms to have critical information that would allow them to identify any potential weaknesses within their value network and how that might impact the firm. Discussing one way of minimising the emergence of weaknesses, the Vice President (Health Insurance) said

> *"In terms of managing liabilities, I think the key thing is that you have to keep a very clear view on your entire value chain."* SM12

The Vice President (Health Insurance) stresses that the key to identifying emerging weaknesses is knowing value chain partners, their resources, and any shift in their dimensions. SM12 state:

> *"Across your value chain, you got to know what is happening. You also got to understand other people before you and after you. What are they going through? Because that will affect you as well."* SM12

On the same note, discussing the importance of cost control and its impact on the ability of the firm's resources to maintain their strength dimensions, SM2 stresses that knowing when and how to support suppliers to minimise their costs will enable his firm to mitigate weakness in terms of cost overruns. SM2 believes that in terms of weaknesses:

> *"Obviously the big one that is related to profitability is cost control. So, having a complacent approach to your supply chain is not good. I should be thinking about working with the suppliers to see how you can help them reduce their costs."* SM2.

Stressing the importance of understanding the supply side, SM2 gave this example,

> *"If I am putting pressure on the suppliers, pressure on their margins because ultimately, they'll walk away, or you'll get a poor quality of service because they don't value the business. It is about understanding how you can help them. So, are those quicker payment terms? Is it placing orders for bigger orders or smaller orders, collecting the items yourself? There are all sorts of ways that you can help supplier reduce their costs."* SM2

Weaknesses emanating from the supply chain side are even more critical when firms outsource their value chain activities, as it is impossible to identify and know what is happening within the outsourced firms' value chain. Explaining the importance of having an insight into the value chain partners, the President and Chief Executive Officer (Automation) share a situation.

> *"So, you tend to outsource that to a company that specialises in contract manufacturing, but then you have a problem, which is they can have problems themselves, right. And they are now, you, your dedicated manufacturing process that you have set up with them is now totally at risk."* SM7

In recent years, the aggregator business model has gained prominence. Firms like Amazon and Uber have successfully used the new business model. More profound insight into the supply chain is critical to gaining a competitive advantage for businesses operating an aggregator business model. The knowledge of their suppliers and customers and the support offered by the aggregator to both parties is a source of competitive advantage. To do so, such firms must know their platform partners'

strengths and weaknesses and under what conditions their partners may face difficulties, which enables them to identify any emergence of weaknesses and take mitigating actions. For example, the Senior Client Services Representative (Online Retail) shares how Amazon identified the emerging weaknesses within their system during the pandemic and acted quickly to minimise the impact on their customers and suppliers. He shared his experience:

> *"When I was working with Amazon e-books, the pandemic started. We realised there will be a lot of shipping delays in the future, probably in the coming months. And there is a concept in Amazon that whenever a seller starts selling their stuff, the buyers would rate them. And we have limited exclusions provided to the sellers. So, we usually give them yearly five exclusions that they can use for a genuine problem.*
>
> *So, for example, if the suppliers cannot meet the demand, or if the shipping is delayed by more than two days and three days and buyers are upset, they'll put negative reviews. But they have five reviews in a year which they can use their exclusions against. So, when we saw that, we thought it would be a disaster. Because when the shipping delays start, books will not get delivered on time. We increased the exclusions that we usually provide. So, we gave them 20 exclusions. At the same time, from the buyer's side, we started giving them goodwill refunds so that they would stay on the platform. So, there are a lot of different strategies. We created an outreach campaign to mitigate future risks and informed the sellers, "Okay, this is what will happen. You might face a lot of delays in your orders or shipping delays and all. So, try to ship the items as soon as you get the orders." Usually, we used to give them three or four days to ship the item. And then we told them that you must do it in 24 hours and try to get it out as soon as possible. If it is needed, do the priority shipping. We will pay the extra charges, whatever is required.*
>
> *So, Amazon put in a lot of money to mitigate those risks, the future challenges."* MM8.

Table 4.7 provides the key representative quotes that formed the second-order concept, 'Knowledge of the Eco-system'.

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2nd Order Themes	Representative quotations
Awareness of the current and emerging weaknesses from within the value network	*"In terms of managing liabilities, I think the key thing is that you have to keep a very clear view on your entire value chain". SM12* *"Across your value chain, you got to know what is happening. You also got to understand other people before you and after you. What are they going through? Because that will affect you as well." SM12* "Obviously the big one that is a little related to profitability is cost control. So, having a complacent approach to your supply chain is not good. I should be thinking about working with the suppliers to see how you can help the reduce their costs" SM2. *"If I am putting pressure on the suppliers, pressure on their margins because ultimately, they'll walk away, or you'll get a poor quality of service because they don't value the business. It is about understanding how you can help them. So, are those quicker payment terms? Is it placing orders for bigger orders or smaller orders, collecting the items yourself? There are all sorts of ways that you can help supplier reduce their costs". SM2* *"So, you tend to outsource that to a company that specialises in contract manufacturing, but then you have a problem, which is they can have problems themselves, right. And they are now, you, your dedicated manufacturing process that you have set up with them is now totally at risk".* SM7 *"When I was working with Amazon e-books, the pandemic started. We realised there will be a lot of shipping delays in the future, probably in the coming months. And there is a concept in Amazon that whenever a seller starts selling their stuff, the buyers would rate them. And we have limited exclusions provided to the sellers. So, we usually give them yearly five exclusions that they can use for a genuine problem.* *So, for example, if the suppliers cannot meet the demand, or if the shipping is delayed by more than two days and three days and buyers are upset, they'll put negative reviews. But they have five reviews in a year which they can use their exclusions against. So, when we saw that, we thought it would be a disaster. Because when the shipping delays start, books will not get delivered on time. We increased the exclusions that we usually provide. So, we gave them 20 exclusions. At the same time, from the buyer's side, we started giving them goodwill refunds so that they would stay on the platform. So, there are a lot of different strategies. We created an outreach campaign to mitigate future risks and informed the sellers, "Okay, this is what will happen. You might face a lot of delays in your orders or shipping delays and all. So, try to ship the items as soon as you get the orders." Usually, we used to give them three or four days to ship the item. And then we told them that you must do it in 24 hours and try to get it out as soon as possible. If it is needed, do the priority shipping. We will pay the extra charges, whatever is required. So, Amazon put in a lot of money to mitigate those risks, the future challenges".* MM8

	'It is the inability to keep in touch with the market, with the competition…. you wake up one day and find that you have been disrupted by a much cleverer competitor". SM6

Table 4.7: Knowledge of the Eco-system (Representative Quotes)

4.3.3.3 *Awareness of the current and emerging weaknesses from Customers*

Equally, information on how the firm's customers are faring, and the state of their resource bundle is important. Acknowledging this, the Manager (Information Technology) argues:

> *"We need to understand what is happening with the customers and what is happening at the sharp end of the business. And that needs to be considered alongside the spreadsheets, you cannot purely manage a business from a spreadsheet."* SM5

Knowledge of the customers must include insight into their resource problem/s, how the firm can contribute to their customers' strengths while minimising their weaknesses, and how the firm can continue to develop and align their resource bundles. The Chief Executive Officer (Mining) explains why he believes their firm was thriving. He said:

> *"As a company, we were able to be very close to our customers. We were talking to them, we knew them. Well, fortunately, they liked us because we listened, and we tried to develop new products for them and solve their problems."* SM10

Equally, SM3 highlights the importance of understanding the future of the customer.

> *"What I do is try and have more antenna up in terms of what our clients are doing and how they're looking at the world."* SM3

2nd Order Themes	Representative quotations
Awareness of the current and emerging weaknesses from Customers	*Sometimes Senior management are making decisions without being armed with all of the facts. There is a lot of spreadsheet management these days. And I think spreadsheets are important. They tell you an awful lot, but they do not tell you everything. We need to understand what is happening with the customers and what is happening at the sharp end of the business. And that needs to be taken into account alongside the spreadsheets, you can't purely manage a business from a spreadsheet. SM5* *As a company, we were able, to be very close to our customers. We were talking to them, we knew them. Well, fortunately, they liked us because we listened, and we tried to develop new products for them and solve their problems. SM10* *What I try and do is try and have more antenna up in terms of what our clients are doing and how they are looking at the world. SM3* *We have very good contact with our customers, in terms of what they were planning to do, talking to them about mine design, and what products are intended to use, and the specs, etc, etc, and what they wanted, and put developing new products for them as well. But also, in terms of seeing how our products were actually working in situ, which is what the production salespeople were mainly doing, they were going underground, two or three times a week actually seen our products in in practice. SM10*

Table 4.8: Awareness of the current and emerging weaknesses from Customers (Representative Quotes)

4.3.3.4 *Awareness of the current and emerging weaknesses due to competitive moves*

Respondents highlight the importance of insight into their competitors and how competitive moves may induce weaknesses within the firm's resource bundle. Highlighting the importance of the knowledge of competition in understanding and mitigating weaknesses that may arise from competitive moves, the Senior Project Manager (Consumer Electronics) said:

> *"You just can't be just too focused on your business; you need to always be so aware of your competition."* MM7

The competitive disadvantage arises from resources that are inferior relative to the competition. Discussing one of the key reasons why a firm that had an advantage may lose its competitive advantage, The Chief Executive (Media) said:

> *"I think it is the inability to react to the competition is a key one. It is an inability to keep in touch with the market… (if you) not keeping in touch with the market, with the competition, you can wake up one day and find that you have been disrupted by a much cleverer competitor. Or that your customers have found other solutions to their problems."* SM6

Data shows that firms systematically analyse their competitors to interpret how competition can induce weakness dimensions within their resource bundle. For example, Chief Operating Officer (Hospitality) shared:

> *"We do a regular SWOT analysis with respect to my competitors."* SM1

Another illustrated example comes from the Head of Human Resources (Heavy Engineering), who discussed how they analyse the competition to minimise weaknesses within their products and resources. MM2 explained:

> *"So, for articulated trucks, we will do competitor analysis. We will look at their machines, we will have a thought as to what they are coming up with. We will do analysis of their machine performance against ours……. We also look at their products. What they are coming out with like size, class."* MM2

The General Manager (Public Services) shared his experience of how competitors' moves induced weaknesses with their firm's resource bundle. SM2 explained:

"I am speaking from experience here. Competition, taking your products, rebranding them, re-skilling them, and putting them out as their own. Some of the stuff that we develop here, which can take time and money, and effort. We put it out there and we have seen one or two competitors just come along and introduce the same product very quickly and we then carry the cost of new product development." SM2

SM2 continues to share another example:

Another one is competitors going for unsustainable pricing models where they perhaps either a) in an act of desperation because that is the price to win work or their cost is low because of the price that they're getting. And so, we come into pressure. Or it is a very aggressive tactics to try and drive a company out of business or perhaps that they're very well resourced, they can slash the prices, reduce the level of competition by the competitors going out of business, and then they put the prices up afterward. So, the way competitors go about pricing can pose a real risk to the business."

Hence, SM2 believe that understanding competitors' moves, intent, and resource capabilities is essential to mitigate weaknesses within a firm. SM2 acknowledges that:

"If their scope of supply is the same or better and cheaper than yours, you have to recognise that you are doing something wrong and then see how you can take some of the cost out."

The Chief Executive Officer (Engineering) emphasised the importance of having intelligence into the intent of their competitors. He noted how competitors might use deception to induce weaknesses in a firm's resource bundle. Alternatively, the firm may not discern the available information on the competition. Highlighting the importance of having critical intelligence, SM3 explained:

"We do not have certain production facilities in India, but we have competition. Now it is more difficult to identify exactly which of our competitors is going to start producing locally, closer to the potential clientele. The closer you are to the potential clientele, the preference you might get in terms of purchase decisions by the clientele. So, it is very difficult to anticipate, of course, we have our antenna out and listening, and

customers will tell if B and C are planning to come into the market, why aren't you thinking of coming into the market. Coming into the market being starting a production facility right here. And a lot of this can be noise, noise in that we cannot be certain that they are just saying it so that you start, and the competitor is planning or not planning. And even if the competitor is planning, because competitors also have a range of products, are they going to start producing the product in question or they are just starting a factory and it might be producing other things, which are not competing for this line. And therefore, to get this kind of confidential information let us say, is more difficult, the competitor's specific information is more difficult. It is also more difficult to understand, for example, the R&D they are doing and what direction... they will announce some things in their annual general reports and in the plans and on the IR documents. But it is difficult to know how they are planning to address the common changes in business environment that we are witnessing, their critical success factors, and how they perceive their critical success factors are going to be different." SM3

Table 4.9 provides the key representative quotes that formed the second-order concept, 'Knowledge of the Ecosystem— Awareness of the current and emerging weaknesses due to competitive moves.'

2nd Order Themes	Representative quotations
Competitors	*So, for articulated trucks, we will do competitor analysis. We will look at their machines, we will have a thought as to what they are coming up with. We will do analysis of their machine performance against ours. Looking at things like fuel efficiency. Effectively, for an articulated dump truck, all you are doing is moving dirt from there to there. So, get your calculator out. It all boils down to whatever you are moving per square meter or whatever, or tonne, or whatever you are going to measure it. And we will do a lot of analysis of competition. We also look at their products. What they are coming out with, size, class.MM2* *"You just can't be just too focused on your business; you need to always be so aware of your competition". MM7* *"It is the inability to react to the competition is a key one. It is an inability to keep in touch with the market… (if you) not keeping in touch with the market, with the competition, you can wake up one day and find that you have been disrupted by a much cleverer competitor. Or that your customers have found other solutions to their problems". SM6* *"I am speaking from experience here. Competition, taking your products, rebranding them, re-skilling them, and putting them out as their own. Some of the stuff that we develop here, which can take time and money, and effort. We put it out there and we have seen one or two competitors just come along and introduce the same product very quickly and we then carry the cost of new product development". SM2* *Another one is competitors going for unsustainable pricing models where they perhaps either a) in an act of desperation because that is the price to win work or their cost is low because of the price that they're getting. And so, we come into pressure. Or it is a very aggressive tactics to try and drive a company out of business or perhaps that they're very well resourced, they can slash the prices, reduce the level of competition by the competitors going out of business, and then they put the prices up afterward. So, the way competitors go about pricing can pose a real risk to the business".?* *"We do not have certain production facilities in India, but we have competition. Now it is more difficult to identify exactly which of our competitors is going to start producing locally, closer to the potential clientele. The closer you are to the potential clientele, the preference you might get in terms of purchase decisions by the clientele. So, it is very difficult to anticipate, of course, we have our antenna out and listening, and customers will tell if B and C are planning to come into the market, why aren't you thinking of coming into the market. Coming into the market being starting a production facility right here. And a lot of this can be noise, noise in that we cannot be certain that they are just saying it so that you start, and the competitor is planning or not planning. And even if the competitor is planning, because competitors also have a range of products, are they going to start producing the product in question or they are just starting a factory and it might be producing other things, which are not competing for this line. And therefore, to get this kind of confidential information let us say, is more difficult, the competitor's specific information is more difficult. It is also more difficult to understand, for example, the R&D they are doing and what direction... they will announce some things in their annual general reports and in the plans and on the IR documents. But it is difficult to know how they are planning to address the common changes in business environment that we are witnessing, their critical success factors, and how they perceive their critical success factors are going to be different. SM3*

Table 4.9: Awareness of the current and emerging weaknesses due to competitive moves (Representative Quotes)

4.3.3.5 *Awareness of the current and emerging weaknesses from within the industry*

Firms that understand the implications of future structure and make commitments that it requires are likely to outperform those that do not (Cockburn et al., 2000). Several respondents identified a manager's lack of knowledge of their industry as one of the critical weaknesses when they responded to the question, 'What are the key issues or weaknesses that could affect the survival of a firm like yours?'. The Head of Marketing and Strategy (Oil & Energy) believes:

> *"It is the lack of sector awareness. What is happening on a macro level."* MM3

MM3 explained that if the senior managers are not tracking the big picture and "the detail", weaknesses will accumulate within the organisation.
Similarly, The Chief Executive (Media) spoke about the importance of keeping pace with the industry to meet the demands of their clients and their firm. He said:

> *"it is how you keep pace with the demands to fulfil your needs or client needs, making sure that a key part of the job is keeping in touch with industry trends and keeping in touch with what the demands of the industry are".* SM6

The Chief Executive (Media) shares an engaging experience where a high-profile appointment failed due to the CEO's lack of industry knowledge. The Chief Executive points out that to be a successful senior manager, the manager must have the market knowledge to assure the staff that the firm is heading in the right direction. SM6 recalled:

> *"There was a perfect storm due to the lack of knowledge of the sector, which led to a lack of authority because he could not speak with conviction, say, I have done these in three other firms and has been perfectly fine. And sort of knowing the individual, …. he was not as skilful in terms of creating a movement for change, rather than implementing something with consultants very quickly, which was sort of backfired badly."* SM6

Relevant knowledge enables managers to ask the right questions when faced with uncertainty. It helps the firm understand the problem, identify a potential problem, or understand an emerging weakness. The inability to understand the problem leads to inappropriate resource allocation or causal ambiguity. Partner and Account Manager

(Maintenance) shares his experience of how a lack of insight into the industry led his senior managers not to grasp the firm's problem entirely. Explaining the issue, MM9 said his firm faced significant issues in servicing their customers, and that cost the firm money and lost business. Though the firm tried to address the issue, MM9 believes that the senior managers did not understand the root cause of the problem. MM9 expressed that:

> *"They* (senior managers) *were not really asking the right questions from the team. I feel like that they were not really the getting the fundamentals."* MM9

Data reveals that firms have systems to constantly scan their market space for changes that could impact their resource dimensions. Innovation (efficiency) or disruptive innovations can render their assets less strategic or weak. Interestingly, the Vice President (Health Insurance) highlights the importance of changes in other industries and how they may influence the firm's resource dimensions. He explained:

> *"Even very large local insurance companies thought who would ever buy a medical insurance product from the internet. But then you have these small start-ups, aggregators who have already captured that market. Now, people are trying to invest so much and catch up. So, these kinds of liabilities as well, it is so important that you are not only looking at things withing your industry, it could be something that you never expect, which might not be relevant to you might not be relevant to your industry, but that might be a potential future liability for you."* SM12

Sharing a similar view, the Head of Marketing and Strategy (Oil and Energy) expressed that firms that are myopic and whose knowledge is limited to their industry could be caught out by competition who may look to learn from other industries. He said:

> *"I think a lot of firms, and this is not just about technology, in general. They get closed on one sector. For instance, they will see and get very good at what they do. And arguably what other companies in the sector do. I try to see, how and what can we learn from automotive? What can we learn from aerospace, to add value."* MM3

2nd Order Themes	Representative quotations
Industry	*We must be seen to understand the wide span of what is important to the market in terms of innovation, in terms of trends. We also must be seen to be ethical and respected. SM6* *There was a perfect storm due to the lack of knowledge of the sector, which led to a lack of authority because he could not speak with conviction, say, I have done these in three other firms and has been perfectly fine. And sort of knowing the individual, …. he was not as skilful in terms of creating a movement for change, rather than implementing something with consultants very quickly, which was sort of backfired badly. SM6.* *They* (senior managers) *were not really asking the right questions from the team. I feel like that they were not really the getting the fundamentals".* MM9 *Even very large local insurance companies thought who would ever buy a medical insurance product from the internet. But then you have these small start-ups, aggregators who have already captured that market. Now, people are trying to invest so much and catch up. So, these kinds of liabilities as well, it is so important that you are not only looking at things withing your industry, it could be something that you never expect, which might not be relevant to you might not be relevant to your industry, but that might be a potential future liability for you. SM12* *I think a lot of firms, and this is not just about technology, in general. They get closed on one sector. For instance, they will see and get very good at what they do. And arguably what other companies in the sector do. I try to see, how and what can we learn from automotive? What can we learn from aerospace, to add value."* MM3

Table 4.10: Awareness of the current and emerging weaknesses from within the industry (Representative Quotes)

4.3.4 Domain Knowledge

4.3.4.1 *Relevant Experience*

Schmidt (2015) argues that resource cognition is linked to the experience of the managers with that of the firm's resources and is rooted in the experience of the firm-idiosyncratic resources. Job experience directly impacts job knowledge (Schmidt et al., 1986). Industry and job experience are vital in identifying and managing current and potential future resource weaknesses.

Throughout their careers, managers experience a substantial number of situations. The experience of handling certain situations results in accumulating knowledge and skills relevant to dealing with specific bearings in their industry (Weterings & Koster, 2007). Developing innovative resource reconfiguration ideas usually follows a path-dependent pattern, in which a manager's knowledge about the past can help a manager predict an industry's future dynamics (Kor & Sundaramurthy, 2009). Managerial experience can help firms reach a situation where they recognise potential advantages and successfully reap benefits. The accumulated experience of managers builds a knowledge base that can be consulted to anticipate and act on given situations. Experienced managers have better insights into threats and opportunities in their current markets (Shane, 2000) and new markets, technologies, or products (Helfat & Lieberman, 2002).

Several informants acknowledged the importance of managerial experience and its role in identifying and mitigating resource weaknesses. When asked, “What are the key issues or weaknesses that could affect a firm's survival like yours?” The Head of Learning and Organisational Development (Public Housing) said:

> *“Weaknesses is probably not having the right people in place with the right level of scale, competence, understanding to manage things in the right way.”* MM1

The Chief Executive (Media) summarised:

> *“At the end of the day, it all boils down to the right people.”* SM6

Not having the *right people* costs the firm. Sharing their experience, the President (Hospitality) recall how their firm started as a mall brand in the US. However, malls

were going through a decline. Their competitors, like Panda Express, had figured out a way to create a brand that was also successful on both High Street and Main Street. Even though SM9's firm did identify that malls were eventually going to decline, identifying that as a weakness, the firm never successfully got its brand out of malls. SM9 believes the key reason for their inability was their lack of experience and understanding of the industry. The President (Hospitality) emphasises:

> *"Ultimately, having the right people in the right places to do the job is everything*." SM9

Interestingly, managers, especially senior managers who lack relevant experience, are weaknesses in themselves to the firm. The firm's inability to replace them may perpetuate its weaknesses. SM6 shares his views on ensuring he has the right people within his team.

> *"I suppose it is a personal mantra, but I also think it is applied in all organisations that you must have the right people. And if you have not got the right people, you should be bold in replacing them or finding the right ones."* SM6

Even firms that identify the correct set of choices when faced with uncertainty may find it challenging to implement the necessary changes to minimise their emerging weaknesses if the firm lacks the right experience. The President (Hospitality) narrated an issue faced by her firm. Before the pandemic, their firm started to roll out curbside ordering and sorted some issues with the online ordering system. However, when the pandemic started, they could not quickly implement these two changes across all their stores due to lacking people with the right experience and skills. She believes that was a significant weakness and that they could have done better. The President (Hospitality) said:

> *"We are already going through a lot of change. We had implemented some things immediately before the pandemic like we had just implemented curb side ordering, we just fixed all our online ordering. So that was a real blessing that we had, unbeknownst to us these two things that were going to help us. However, we did not have all the right people in the right places. So that slowed us down. I would give us maybe a score of 5 out of 10 because we've got some of the things in place."* SM9

Similarly, reflecting on the past difficulties in running the now thriving business, the Partner and Account Manager (Maintenance) acknowledges that the main reason for their difficulties was because he lacked the relevant experience. MM9 expressed:

> *"I feel like I should have had some personal experience myself. I went into the industry where I had no experience whatsoever. 99% of people that get into my industry that I'm working on, has prior experience, and then they decide to become a business owner, they don't get into the business ownership right away, but I jumped into the business ownership right away. And that was something I felt I could have avoided."* MM9

MM9 adds that when he realised that his lack of industry experience was detrimental to the business, he brought in a business partner with relevant industry experience.

Table 4.11 provides the key representative quotes that formed the second-order concept, 'Domain Knowledge — Relevant Experience.'

2nd Order Themes	Representative quotations
Relevant Experience	*"Weaknesses is probably not having the right people in place with the right level of scale, competence, understanding to manage things in the right way." MM1* *"At the end of the day, it all boils down to the right people. Things can go off the rails if you have somebody who comes in from another sector who does not understand the industry they are working in" SM6.* *I have worked for and other multinationals. Most of these are almost 80 to 110 years old companies. So, they have this kind of maturity. They have this kind of lessons learned and knowledge accumulated.* *"Ultimately, having the right people in the right places to do the job is everything. SM9* *"We are already going through a lot of change. We had implemented some things immediately before the pandemic like we had just implemented curb side ordering, we just fixed all our online ordering. So that was a real blessing that we had, unbeknownst to us these two things that were going to help us. However, we did not have all the right people in the right places. So that slowed us down. I would give us a score of 5 out of 10 because we have got some of the things in place". SM9* *Senior managers are better in that (scanning the external environment) they are better in that, because these are more study based, which is what higher education teach us, how to read this, how to manage to lead this how to understand and come up with strategies to overcome the situation and so on. So, yes, they do and understand that part, but on the real time of execution, I feel like they are failing, because of this lack of experience. Not necessarily you have to have experience on the same field, but at least you must have experience on the same area. MM4* *"I feel like I should have had some personal experience myself. I went into the industry where I had no experience whatsoever, practical experience. 99% of people that are get into my industry that I am working on, has had prior experience, and then they decide to become a business owner, they do not get into the business ownership right away, but I jumped into the business ownership right away. And that was something I felt I could have been avoided. MM9*

Table 4.11: Relevant Experience (Representative Quotes)

4.3.4.2 *Painful Memories / Experience of challenges in resource re-bundling*

The type of experience one has accumulated is also relevant. Managers who are only used to good times may not have the relevant knowledge to identify how eco-system changes could adversely affect their resource bundle. Several respondents share this view. For example, The Chief Executive Officer (Play Equipment) believes that managers who have faced crises learn from such situations and that learning is critical to managing future uncertainties. SM11 said:

> *"A business that has gone through a crisis learns to know what every penny is every moment, and how to manage money. And again, that is why at (company name) I have learned a lot of lessons."* SM11

The Chief Operating Officer (Play Equipment) added:

> *"I would also say one of the reasons why (the firm) was really doing well is because businesses that had been through previous crisis would survive because they have got muscle memory on how to, you know, react quicker know their numbers better compared to someone who's never been through a crisis before."* SM11

Recalling his past experiences, the Chief Executive Officer (Education) spoke about the importance of firms adapting their culture to be relevant to customers and staff. Even though the CEO has been happy with the firm's financial performance since he took office, he believes that the firm must change its culture to maintain its *"brand value not in terms of making money, what do we stand for."* The CEO highlighted:

> *"I have been here seven years, and one of the things I have always struggled with is that I think there is a lot that the company needs to do better. And yet, we have grown from 13 million to 42 million. So, it is almost looking at that period and saying, that has been done, despite some of the problems and challenges that we have had. But it then makes you second guess yourself, because it naturally does not feel right. And I am talking about culturally those kinds of things. They do not affect our bottom line. They are not affecting our survival. They are not affecting our key performance indicators. And yet, there is something that does not feel right."* SM4

However, the CEO's experience also makes him assess the likely consequences of his proposed changes and how they may play out in the future. The CEO said:

> *"I suppose this is where there is going to be a challenge, because if the company for whatever reason stops performing on the traditional methods of assessment, then does that indicate that the way that the organisation was set up previously, was right and justified? Or is that just a coincidence?"* SM4

Table 4.12 provides the key representative quotes that formed the second-order concept, 'Domain Knowledge — Painful Memories.'

4.3.5 Section Summary

The overall findings on the second aggregate dimension, 'Identification of current and emerging weaknesses,' highlight the critical role of firm-specific resource cognition in identifying and managing firm weaknesses. Firms use their insight into their resources, supply chain, task, and the industry environment to understand their resource fungibility and identify and mitigate current and emerging weaknesses. Such insight allows firms to develop a strategic mindset awareness that provides them with possibilities for strategic action.

2nd Order Themes	Representative quotations
Painful memories	*Yeah, I have been here seven years, and one of the things I have always struggled with is, is that I think there is a lot that the company needs to do better. And yet, we have grown from 13 million to 42 million. So, it is almost looking at that period and saying, that has been done, despite some of the problems and challenges that we have had. But it then makes you second guess yourself, because it naturally does not feel right. And I am talking about culturally those kinds of things. They do not affect our bottom line. They are not affecting our survival. They are not affecting our key performance indicators. And yet, there is something that does not feel right or has not felt right, until the last few months. And I suppose this is where there is going to be a challenge, because if the company for whatever reason stops performing on the traditional methods of assessment, then does that indicate that the way that the organization was set up previously, was right and justified? Or is that just a coincidence? when we have to do with culture, if I explain what that is, it is almost having like a fun and games culture. Not a professional, not commercial kind of or corporate approach to things. There are lots of advantages to having a fun environment. People want them to be at work and all of those kinds of things. But my view and the view of several of their managers was that it was always gone too far, actually doing silly things and wasting company time. And bearing in mind, we are a charity, should we be spending money on having fun? Or should we be spending time and money on doing things that ultimately lead to our charitable aims, which are for the beneficiaries, for learners in the main? I suppose that the biggest challenge for me moving forward is making sure that although we have addressed the concerns that we have had, making sure that the company is still fit for purpose in terms of those traditional methods of measurement, turnover, profit, net promoter score, staff engagement, all of those kinds of things. And clearly, there will be some impact on staff engagement. But hopefully, it should not drop too low. And actually, what we have seen in some early examples is some of the people were a bit concerned about the way that we as an organization was conducting ourselves and not happy about the changes, so their engagement will go up. But for some people who did like the old culture, etc., their engagement will likely go down. And I would not suggest that but probably ultimately move on. So, we might have a bit of turbulence in between.* *So that they can better assist the customers in future, just focusing on the past mistakes. MM8* *A business that has gone through a crisis learns to know what every penny is every moment, and how to manage money. And again, that is why at (company name) I have learned a lot of lessons. SM11* *I would also say one of the reasons why (the firm) was really doing well is because businesses that had been through previous crisis would survive because they have got muscle memory on how to, you know, react quicker know their numbers better compared to someone who's never been through a crisis before". SM11*

Table 4.12: Painful Memories (Representative Quotes)

4.4 Managing Identified Weaknesses

4.4.1 Introduction

Though the future is not entirely deterministic, the industry's existing structure and the players' actions within and outside influence the future structure of the industry either by intent or not. As discussed in the previous section, firms do not want to 'miss the boat'. To do so, they should be able to have the insight to understand the "unfolding patterns (that) can provide a guide to the impact of current action on future success" (McMaster, 1996). A firm's strategy dictates the nature and content of its resource bundle. They consist of strategic and ordinary assets; some may be a weakness. However, as the operating landscape changes (i.e., competition, customers, regulations), they must be dynamic in achieving their strategic objectives with the given resource set. It is difficult for firms to change their strategic assets in the short run, mainly when alignment still exists between their strategy and strategic foresight. Hence, firms make tactical manoeuvres with their resources to meet the market requirements. Such manoeuvres are based on assessing the action and reaction of the various stakeholders, notably competitors, customers, and regulators, to ensure that their strategic assets maintain their strength dimensions and that the firm can mitigate their weaknesses. They draw up contingency plans, use their structure and systems to monitor their immediate external environment and act/ react as relevant when realigning their resource bundle. Changing course is not easy. Hence, firms develop systems that will allow them to make tactical changes to their resources while still pursuing their strategy. As The President (Hospitality) pointed out:

> *The company must operate in a system with a structure that allows for change tactically. Nobody is going to set a strategy and say 'go, operate, and execute it'. Because the strategy can never foresee all the stuff that is changing all the time. So, the operating system needs to account for people needing to change stuff, because stuff is already happening."* SM9

Similarly, the Head of Marketing and Strategy (Oil and Energy) discusses the challenges firms face in mitigating resource weakness and must always consider diverse ways to address their weaknesses.

"What is interesting as well is that…there are different ways you can approach the challenge. The challenge is to pick the right way or be able to change the approach to meet the objectives more effectively." MM3

4.4.2 Judgement

4.4.2.1 *Understanding the extent of the current and emerging weaknesses and deciding when and how to respond*

While strategic foresight and insight enable firms to identify the emergence of current and future weaknesses, firms must find a way to work towards mitigating those weaknesses. The type of resources, their cost, how they are accumulated, and their interplay within the bundle are almost unique to each firm. Hence, a firm's response may be unique regarding how it alters its resources, though the change could be similar in broad terms.

Several respondents shared how their firm made judgements about the emerging weaknesses and how they chose to respond to them.

The Director (Food Safety Consultancy) explains his firm's situation, which was focused on traditional training and consultancy and mainly on the ISO 9000 standards in early 2000. The Director recalls:

"One of the big problems we saw is that we were doing a lot of work for example companies like Wynyard and Samsung, and they had two huge factories here (in the Northeast) … And all of a sudden, we saw companies moving out of the area. We saw our business potential restricted dramatically." CO3

Faced with the threat of reduced businesses and their crucial strength around ISO 9000 consultancy, the firm decided to review its options and develop its capabilities in areas that would give them long-term sustainability. At that time, the firm was dealing with '*about four or five reasonable sized food manufacturers'*, so they decided to look at the food sector. The Director continues:

"We sat down, and we said, if we are going to stay in business in the northeast, we need to change direction. So, what we decided Is that the one thing we

thought about was, everybody needs food, it is never going to change. So, what we did is we decided to target food companies". CO3

Staff members went through retraining, acquiring relevant food industry-specific certifications. The firm now specialises in offering food safety consultancy.

As in the case of the Food Consultancy, the Meat factory had to decide on its options when it almost lost its key market during the pandemic. The operations manager (meat industry) explained that the firm initially thought that the pandemic would be over in a few months and that they would be back in business. However, when the firm realised it would take longer and could not protect its resources, it decided to find alternative markets for its products. The Operations Manager explains:

"But once it (markets) started closing down, and the whole business started panicking, that's where the management decided, okay, it's time to go into retail, otherwise, we're going to get killed, either we change ourselves to the demand, or we have to stop the business. So, we were indirectly got forced to do this, otherwise, we will not have survived." MM4

As discussed previously, the meat factory changes its machinery to make meat cuts that the retail industry demands compared to their traditional restaurant clients.

While the first two cases discussed how and when the firm decided to make changes to its resource bundle in response to emerging weaknesses, the Chief Executive Officer (Engineering) offer an interesting example of where a firm may have to gather credible intelligence that will support their decision on how and when to decide on any emerging weaknesses. In other words, without credible market intelligence, the firm decided to wait and watch with their '*antenna out and listening'*. The CEO explains the situation:

"We *do not have certain production facilities in India, but we have competition. Now it is more difficult to identify exactly which of our competitors is going to start producing locally closer to the potential clientele. The closer you are to the potential clientele, the more preference you might get in terms of purchase decisions by the clientele. So, it is very difficult to anticipate, of course, we have*

our antenna out and listening, and customers will tell, B and C are planning to come into the market, why aren't you thinking of coming into the market? Coming into the market is starting a production facility right here. And a lot of this can be noise in that. We cannot be certain that they are just saying it so that you start, and the competitor is planning or not planning. And even if the competitor is planning, because competitors also have a range of products, are they going to start producing the product in question or they are just starting a factory and might be producing other things, which are not competing for this line? And therefore, getting this confidential competitor-specific information is more difficult." SM3

In dynamic industries, it is difficult to identify how soon a particular set of resources, especially modern technologies, may or may not offer a competitive advantage or, indeed, a competitive disadvantage. Betting on unproven technological resources based on foresight is a precarious proposition. Firms operating in such dynamic environments are sometimes happy to wait to see if their resources may become less valuable as innovative technologies emerge. The Head of Marketing and Strategy (Oil & Energy) shares their thoughts on difficulties in resource rebundling as modern technologies emerge in their sector. He stated:

"*The practicalities often fall on things like your resource planning because companies-- whoever gets it correct will wipe the floor with all the machining businesses. But it is a very high risk to invest a lot of money into a certain kit that could change in six months' time. And that is where it is almost harder to plan future resource demands. In oil and gas, they call it the race to be second. So, nobody wants to buy the new technology, which is first, because it might fail. That is why everyone will happily buy it second after someone else has bought it and it works."* MM3

Respondents reveal that there is no magic bullet, but they all stress the importance of the quality and speed of their judgement on the situation and how they decide to act or react to emerging weaknesses. The Chief Executive Officer (Play Equipment) pointed:

“I think the people that acted with pace succeeded. And the people that act slowly probably failed.” SM11

Table 4.13 provides the key representative quotes that formed the second-order concept, ‘Judgement.’

2nd Order Themes	Representative quotations
Judgement	*One of the big problems we saw is that we were doing a lot of work for example companies like Wynyard and Samsung, and they had two huge factories here (in the Northeast) … And all of a sudden, we saw companies moving out of the area. We saw our business potential restricted dramatically. We sat down, and we said, if we are going to stay in business in the northeast, we need to change direction. So, what we decided Is that the one thing we thought about was, everybody needs food, it is never going to change. So, what we did is we decided to target food companies". CO3* *But once it (markets) started closing down, and the whole business started panicking, that's where the management decided, okay, it's time to go into retail, otherwise, we're going to get killed, either we change ourselves to the demand, or we have to stop the business. So, we were indirectly got forced to do this, otherwise, we will not have survived". MM4* We *do not have certain production facilities in India, but we have competition. Now it is more difficult to identify exactly which of our competitors is going to start producing locally closer to the potential clientele. The closer you are to the potential clientele, the more preference you might get in terms of purchase decisions by the clientele. So, it is very difficult to anticipate, of course, we have our antenna out and listening, and customers will tell, B and C are planning to come into the market, why aren't you thinking of coming into the market? Coming into the market is starting a production facility right here. And a lot of this can be noise in that. We cannot be certain that they are just saying it so that you start, and the competitor is planning or not planning. And even if the competitor is planning, because competitors also have a range of products, are they going to start producing the product in question or they are just starting a factory and might be producing other things, which are not competing for this line? And therefore, getting this confidential competitor-specific information is more difficult".SM3* *The practicalities often fall on things like your resource planning because companies-- whoever gets it correct will wipe the floor with all the machining businesses. But it is a very high risk to invest a lot of money into a certain kit that could change in six months' time. And that is where it is almost harder to plan future resource demands. In oil and gas, they call it the race to be second. So, nobody wants to buy the new technology, which is first, because it might fail. That is why everyone will happily buy it second after someone else has bought it and it works". MM3*

Table 4.13: Judgement (Representative Quotes)

4.4.3 Response Tactics

4.4.3.1 *Being tactical in implementing changes to the resource bundle*

Respondents highlighted the importance of having insight into the current and future resource implications for response options. Firms must know how changes to specific resources to address weaknesses will interplay with other resources in the bundle. There is a general acceptance that firm resources are interconnected. Even though within the RBV, performance is linked to strategic assets, firms identify the importance of ordinary resources and their interplay with strategic assets in removing or mitigating weaknesses. Emphasising that resources do not work in isolation and that firms' resource bundle is intrinsically interlinked. Managing Director (Consultancy) emphasises:

> *"A business is a bit of a jigsaw puzzle. You have got all the pieces in the box. But unless you actually put them all on the table and join them all up, you don't really know what the picture is. So, looking at a single jigsaw piece, will let you see that piece of the resource/s for what whether it is good, bad, or indifferent. But where does it fit into the overall strategy?"* CO2

The Head of Marketing and Strategy (Oil and Energy) gives an example of the choices their firms must make. MM3 explained that their firm supplies equipment for offshore energy firms that work on most of their projects in the summer because the weather is good. Hence, most of the firm's production happens in the winter, so it is ready to go offshore. However, that also means that in the summer, it is incredibly quiet. Therefore, they do not need that many employees. Such firms must decide on the best course of action to ensure they are not saddled with resources that cost more than they produce. Their choices will be evaluated based on the interplay between the resources when a particular resource is ceased from their bundle (staff in this example). To foresee the impact of their action in re-recruiting similar skill sets for their next peak production period, including competition for such skills, retraining costs, employment laws, customer perception (brand equity), and their ethical standards, to name a few. MM3 points out that sometimes

> *"It is almost an ethical decision, if you're happy to go through that process, compared to you take someone from an agency."* MM3

Interestingly, several respondents highlighted the critical role of non-strategic resources. Managers identify that weaknesses in non-strategic resources may lead to undermining strategic assets. Non-strategic resources can also play a critical role in supporting and mitigating the emerging weakness dimensions of strategic assets.

The Managing Director (Information Technology) stresses the importance of understanding weaknesses in the firm's ordinary resources and how they could impact their performance. He said:

> *"But quite often larger firms (senior managers) are dealing with bigger issues; the little ones can become big issues but if they are really focused on big issues. There is going to be firefights."* SM5

Giving an example of the role of non-strategic resources and how they may induce strategic weaknesses, the Managing Director (Consultancy) highlights an issue in a client firm. The client firm faced issues with its administrative systems that were uncoordinated with its sales and marketing. Due to this misalignment, when the sales team sign a contract,

> "*There was no forecast for when money was due in, or money was due out of this business."* CO2

As the sales team got busier, the problem started to compound. CO2 recalled:

> *"Before the growth came, everything was under control and, nothing has changed. Well, the one thing that changed was there was more salespeople put in more of the problem into the pipeline, which created the venturi effect and that is where the blockage comes from."* CO2

4.4.3.2 *Being tactical in implementing changes in strategic assets*

Strategic assets are built over time, and firms try to get the maximum utility from them before they are released. Discussing the changing nature of the auto sector, the Head of Mfg. Quality (Automobiles) highlights how the sector moves from internal combustion engines to electric vehicles. MM6 believes that auto manufacturers will

move their IC plants to markets where they are still in demand before they entirely phase out those assets. He said:

> *"We are moving from IC engines to electric vehicles. So, internal combustion engine plants are no more going to be useful after maybe 20 years from now. And there are some areas where companies have already started reducing its production volume. So, these manufacturing plants will be a liability for the company. This is where you will need to think about how I can replace the plants. In Europe, maybe in 2030, but in South Africa, and India, it may get slightly bit later, maybe in 2050. So, whether I can ship these plants from the UK to India or South Africa, or can I utilize these production facilities to export to these countries (though it may be difficult to do so because the European or US manufacturing cost is higher)."* MM6

Additionally, there is an interesting case where a machining firm identified that they should not follow their competitor who upgraded their machine-making tools by adopting the latest technologies. Considering its client base, the firm believed its strategic assets could still retain its strength dimensions. The Head of Marketing and Strategy (Oil & Energy) recalled that after considering the cost of the update, market share and future demand, their firm decided not to upgrade their machinery. He believes that the decision paid off.

> *The company across the road from us, who was also a machine shop, they probably spent half a million pounds on a new five-axis machine, but they didn't have enough work to fill it. So, then what happened is that they were trying to bid work against us, who would do it the old-fashioned way. But because we did not have the overheads of the big machine, we could compet."* MM3

Firms also make incremental changes to their strategic assets when they believe their future state is a liability. Discussing how the mining firm decided to make slight changes to its strategic assets by entering into international product markets, the Chief Executive Officer (Mining) said:

> *It takes time and is often expensive, those lessons can be expensive. We learned them over time, often, at a cost. That is perhaps fine. I think that's*

probably part of the process. When you can pick it up early enough, and not take such big risks." SM10

However, another example from the data shows how firms can identify future trends yet may get their timing wrong in changing their strategic assets, resulting in liabilities. The Senior Project Manager (Consumer Electronics) articulates what happened when their firm decided to move away from manufacturing fossil fuel generators and develop generators that run on sustainable energy. MM7 shared that there is a high demand for electricity generators in Lebanon to supplement the patchy electricity supply from the grid. Most generators run on fossil fuel, which is noisy and emits greenhouse gases. Their firm identified a gap in the market for generators that could run on sustainable energy, be less noisy and release acceptable levels or no harmful gases. Their firm reorganised its resource bundle by developing new assets (machinery and capabilities that led to the development of generators that would generate electricity from environmentally friendly energy sources). The firm believed the financial resources spent on additional R&D and machinery would protect the firm. Their action will help the firm replace its current assets, which it thought would become a future weakness. They worked on the latest technologies and developed a product they thought would meet the gap and the one with a future. However, the senior manager recalled:

"We started developing (generators) that run on sustainable energy. But that one did not pick up as a replacement for the diesel generators. The diesel generators were still to be high in demand. What they have done was (diesel generator manufactures) they have worked more on noise reduction, filters to make sure it is within the acceptable limits." MM7

Unfortunately for the firm, its competitors saw the market's trajectory differently. They made tactical changes to their resources, enabling them to change certain product features at a much lower cost, making their products (diesel generators) more attractive to customers.

While one firm's foresight based on current trends indicated that resources supporting the manufacture of diesel generators might lose their strategic value in the future and hence started to develop alternative assets, other firms added additional resources and capabilities to continue to support their strategic assets to retain their strength dimensions.

Hence, though trends might indicate that a particular technology may be the future, firms must decide if they want to be the first mover or wait for the competition to evaluate the technology before they make their move. This is based on several variables, including how they foresee the evaluation of the technology, competitive moves, and cost of failure. MM7 provides an excellent example of how their former firm identified a significant shift towards renewal energy and that they must move in that direction before the competition. However, she explains how this tactical error in releasing some of their resources to develop new capabilities went terrible for them, accumulating liabilities within its resource bundle.

4.4.3.3 *Being tactical in responding to potential weaknesses*

The Managing Director (Consultancy) shares an example of a firm in the timber industry that was more strategically aware of a potential weakness than some of their competitors. There was a shortage of timber in the UK during and immediately after the pandemic. The Managing Director (Consultancy) explains that firms in the industry primarily forward orders and have contracts to buy from their suppliers. Though, during the pandemic, the client firm was unsure how long the lockdown might last, CO2 highlights that their client decided to honour their contracts, support their suppliers, and build their stock. This move enabled their client to overcome the crisis better than their competitors, who focused more on accumulating cash reserves to overcome the crisis. CO2 recalled:

> *"The more strategically aware companies would know that it would cost more money to bring the timber in, but they had already got a contract, which meant that they might have to finance that delivery, while they were taking less income in. However, they do it, and they invest in that stock. The other companies cancel the orders, save the cash. So, they ride it out two- or three-month period, however, and now it goes to six 9 12 15 months, and they run out of stock."* CO2

Understanding when and where the resource dimension could develop into weaknesses is critical in mitigating resource weaknesses. CO2 believes that some of the firms in the timber industry did not consider the consequences of cancelling their

orders. CO2 believes that a lack of knowledge on the interplay between organisational resources and foresight on how changes could impact the future of the resource dimensions. CO2 stated:

> *"It is about self-preservation instead of how do we work with our chain of supply? How do we work with our customers? So, the selfish nature of that decision caused the problem because strategically they were not considering the impact of the decision."* CO2

An example (provided earlier) of how Hyundai responded to the emergence of weakness compared to its competitors in India (during the pandemic) is worth noting. While Ford decided it must protect its valuable assets by stopping production, Hyundai used its resources, capabilities, and insight into its resources to keep production going.

Ford's International Markets Group President announced to the press that.

> *"We are continuing to act in real-time and taking added safety measures by temporarily halting production at our manufacturing sites in the international markets."* MM61

Whereas Hyundai's statement from the Director of Production stated

> *"We have managed to create accommodation for about 1,200 workers in nearby areas to ensure continuity in production. We have also helped our vendors in creating this temporary set-up within the premises or nearby hostels."* MM62

Highlighting their choice, the Head of Mfg. Quality (Automobiles) said:

> *"Some innovative ideas are necessary to manage the situation balancing both the personal interest as well as the corporate interest, sometimes it looks silly, and sometimes it looks very tough."* MM6

The Vice President (Insurance) discussed how they respond to emerging weaknesses. He explained in their monthly meeting where the heads of all the departments discuss any change in the environment that could affect their products and their partners and analyse:

“How does that impact my line of business? And how does it affect other people down the chain?” SM12

If they see a change in the trend, they then look at the historical trends and what measures were taken to counter the change and base their current understanding of the environment. SM12 continued:

“So, then we start applying countermeasures to mitigate the trend and bring it back to the norm. Or we will have to apply price increases to products proactively before things balloon and other people are affected more drastically.” SM12

Table 4.14 provides the key representative quotes that formed the second-order concept, ‘Response Tactics.’

2nd Order Themes	Representative quotations
Response Tactics	*It is almost an ethical decision, if you're happy to go through that process, compared to you take someone from an agency".* MM3 *There was no forecast for when money was due in, or money was due out of this business. Before the growth came, everything was under control and, nothing has changed. Well, the one thing that changed was there was more salespeople put in more of the problem into the pipeline, which created the venturi effect and that is where the blockage comes from". CO2* *We are moving from IC engines to electric vehicles. So, internal combustion engine plants are no more going to be useful after maybe 20 years from now. And there are some areas where companies have already started reducing its production volume. So, these manufacturing plants will be a liability for the company. This is where you will need to think about how I can replace the plants. In Europe, maybe in 2030, but in South Africa, and India, it may get slightly bit later, maybe in 2050. So, whether I can ship these plants from the UK to India or South Africa, or can I utilize these production facilities to export to these countries (though it may be difficult to do so because the European or US manufacturing cost is higher)". MM6* *The company across the road from us, who was also a machine shop, they probably spent half a million pounds on a new five-axis machine, but they didn't have enough work to fill it. So, then what happened is that they were trying to bid work against us, who would do it the old-fashioned way. But because we did not have the overheads of the big machine, we could compete". MM3* *The more strategically aware companies would know that it would cost more money to bring the timber in, but they had already got a contract, which meant that they might have to finance that delivery, while they were taking less income in. However, they do it, and they invest in that stock. The other companies cancel the orders, save the cash. So, they ride it out two- or three-month period, however, and now it goes to six 9 12 15 months, and they run out of stock". CO2* *How does that impact my line of business? And how does it affect other people down the chain…So, then we start applying countermeasures to mitigate the trend and bring it back to the norm. Or we will have to apply price increases to products proactively before things balloon and other people are affected more drastically". SM12*

Table 4.14: Response Tactics (Representative Quotes)

4.4.4 Section Summary

The overall findings on the third aggregate dimension, 'Managing identified weaknesses', highlight how firms manage their identified weaknesses by making tactical manoeuvres with their resources. Firms draw contingency plans, monitor their external environment, and realign their resource bundle to mitigate their weaknesses by realigning their resource base as needed. By having strategic foresight and insight, firms can identify current and future weaknesses and take steps to mitigate them. Findings also highlight the importance of a firm's judgements about emerging weaknesses and how they respond to them, leading to a highly differentiated approach in addressing weaknesses.

4.5 Pragmatic Outlook

4.5.1 Being Curious about the Future

One of the recurring themes within the data set is that the respondents are wary of any uncertainty that may lead to the development of resource weaknesses. In addition, data shows a sense of fear among most respondents that they may be unable to foresee future resource requirements and may end up with a resource bundle with more weaknesses, hence missing the boat. As the Chief Executive Officer (Engineering) expressed:

> *"I wouldn't want my firm, especially in these turbulent times, not be future-ready. …If you miss the boat on how things are changing, you can be out of business very fast. That is what I fear."* SM3

Similarly, the Chief Executive Officer (Education Services) shared his thoughts on the difficulty in understanding the external changes and their implications for the strength or weakness dimensions of their resources and capabilities. The CEO stated:

> *"Probably the biggest challenge for us is just the uncertainty, the uncertainty of what's going to happen and the uncertainty of even when a* (government) *policy is in place that it is actually going to be stuck to and go ahead."* SM4

In the absence of such crucial information, SM4 lamented that it is difficult to identify future resource configurations, which could lead to the accumulation of weaknesses. The Chief Executive Officer (Engineering) also highlighted this concern and identified that:

> *"One kind of weakness, I wouldn't want the firm to develop is not to be, especially in these turbulent times not be future-ready."* SM3

4.5.2 There is no Crystal Ball.

Though firms are wary about developing resource weaknesses in the future and are making efforts to minimise any uncertainty, data shows that firms are mindful that it is difficult to predict the future and that it may not be possible to foresee and remove all weaknesses before they arise.

Several managers admitted that it is impossible to prepare for all future eventualities and identify a resource combination with minimum or no weaknesses ex-ante or ex-post.

The General Manager (Public Services) acknowledged:

> *"you'll always certainly be caught out by an unanticipated change."* SM2

Similarly, Owner/ Managing Director (Antiques) remarked:

> *"I would say that, in general, it's difficult to identify future liabilities". SM14*

Emphasising the difficulty in identifying how and which resource or a combination of resources may become a weakness in the future, the Chief Executive Officer (Engineering), on a lighter note, remarked:

> *"If people knew how to read the future, they wouldn't be working, they'll be making money on the stock exchange."* SM3

It is evident in the data set that firms accept that they cannot prepare for all eventualities, and while foresight exercises are helpful, they do not provide a crystal ball to peer into the future. While discussing this topic, Chief Operating Officer (Chemical Engineering) poignantly said:

> *"We don't have 747 coming through window plan,"* SM8

Nevertheless, as highlighted earlier, all the respondents identified that their firms undertake some form of activities to understand the future state of the environment and its implications for their resource bundle. Indeed, irrespective of whether the firm can identify probable future resource requirements, not thinking about the future is a weakness.

When asked what one of the critical weaknesses they do not want their firm to develop, the Chief Executive (Media) categorically stated,

> *"I feel one of the worst ones is complacency or lack of curiosity about the future."* SM6

4.5.3 Culture of Change

While firms may have several tools to monitor emerging weaknesses and contingency plans, respondents identify that they cannot plan and prepare for any eventuality. However, respondents acknowledge that firms that are used to change or have a culture of change are better prepared to manage any identified weaknesses.

The President (Hospitality) believes that if change is the norm in a company, it is a lot easier for the firm to adapt and manage any emerging weaknesses. SM9 said:

> *"If you are a company that changes a lot anyway, if you have a culture of change, it is going to be a lot easier for the firm to change, because you have got all the systems and processes and the culture. Everyone knows …This is just a different type of change."* SM9

Similarly, the Senior Client Services Representative (Online Retail) recalls the critical reason for their firm's adoption during the pandemic. MM8 believes that it was because they were prepared.

> *"For these changes, learn from them and just adopt the changes."* MM8

Respondents also believe that being change-ready and willing to experiment with different ideas in managing weaknesses enables the firm to learn, even if they fail initially. As The Chief Executive Officer (Mining) said:

> *"Even if you have failed at addressing the particular issue, you might have learned enough so that when that when that liability eventually comes to light, you say, we tried to solve it that way. That did not work. But what if we just did this if we just tweaked it a little bit? You have learned about how to react to that liability."* SM10

Table 4.16 provides the key representative quotes that formed the second-order concept, 'Domain Knowledge — Painful Memories.'

4.5.4 Section Summary

While it is evident that firms are concerned about developing resource weaknesses in the future, they also acknowledge the difficulty in predicting future resource requirements and identifying future liabilities. The overall findings on the fourth aggregate dimension, 'Pragmatic Outlook', highlight the importance of being future-ready and change-ready for firms. Adopting such a pragmatic outlook enables firms to effectively manage emerging weaknesses by being proactive and adaptable to manage future uncertainties.

2nd Order Themes	Representative quotations
Being Fearful of the Future	*I would not want my firm, especially in these turbulent times, not be future-ready. …If you miss the boat on how things are changing, you can be out of business very fast. That is what I fear". SM3* *Probably the biggest challenge for us is just the uncertainty, the uncertainty of what's going to happen and the uncertainty of even when a (government) policy is in place that it is actually going to be stuck to and go ahead". SM4* *"One kind of weakness, I wouldn't want the firm to develop is not to be, especially in these turbulent times not be future-ready" SM3.* *Perhaps the fear to innovate or try something radically different because of the situation that we are in means that, you know, will keep doing what we are doing and keep doing it well or perhaps not get to that next stage where we, identify a real opportunity that could be a game changer for the organisation. So, we might miss that on a massive opportunity, MM1.*
There is no Crystal Ball	*The prime example would be not worrying about something that could happen in four years, when they could actually go bust in six months. MM3* *I would say that, in general with our businesses, it is difficult to identify future liabilities. SM13* *In the abstract you can identify all of the weaknesses, but in the, uh, in the specific, um, you don't know whether they're going to come from or* *when they are going to arrive. SM2* *It is difficult to know you because you have got to get a crystal ball, you got to try to anticipate what the impact could be. And then what you put in places, you know, to mitigate all the risks that can present. SM5* *There is a whole bunch of things that go around into a product, internal factors, external factors, but any of these good but impact on, um, suddenly the product becoming weak.SM3.*
Being Change Ready	*A lot of it is, you know, awareness, then preparation. And then having some kind of response plan, which recognises that unexpected things can happen and then being able to react to them. SM7* *If you are a company that changes a lot anyway, if you have a culture of change, it is going to be a lot easier for the firm to change, because you have got all the systems and processes and the culture. Everyone knows …This is just a different type of change. SM9*

	Even if you have failed at addressing the particular issue, you might have learned enough so that when that liability eventually comes to light, you say, we tried to solve it that way. That did not work. But what if we just did this if we just tweaked it a little bit? You have learned about how to react to that liability SM10. *So, we started more focusing on pork manufacturing, slicing pork, chopping pork, and so on. So yes, we are flexible with those changes.MM4* *We would have done more planning and stress tested and sensitised our plans, which is what we learned from it and then implemented on the back of it, you know, not to waste a crisis.SM11* *sort of have people who are open minded to change SM6.*

Table 4.1: Pragmatic Outlook (Representative Quotes)

Chapter 5: Discussion and Implications

5.1 Introduction

This chapter presents a novel Generic Foresight Process Framework and, as an extension, the Organisational Resource Weaknesses Identification and Management Framework. It is a culmination of the findings from Chapter 4 and the relevant theories discussed in Chapter 2. It offers a new perspective on the topic and highlights the areas where the findings align and diverge with the extant literature.

This research addresses the critical question, 'How do firms identify and mitigate the accumulation of resource weaknesses within their resource base?'

In addition to the above high-level question, the study seeks to answer the following two sub-questions.

1. To what extent does strategic foresight influence resource weakness identification and management?
2. What is the nature and impact of foresight under conditions of uncertainty*?*

The study rigorously employed the Gioia Methodology, a well-established research approach, to collect and analyse interviews and relevant secondary data. This meticulous approach ensured the reliability of the findings, which were then drawn into a robust data structure. Chapter 3 presents this data structure, which includes four aggregate dimensions, resulting from a thorough analysis of the interviews from 'knowledge agents' who understand their actions and can articulate their thoughts and intentions.

This discussion chapter has eleven sections. The chapter starts by briefly revisiting the research problem, the key question, and the aims and objectives of the research (5.2), followed by a summary of the key findings of this study (5.3). Discussions on the role of Strategic Foresight, Strategic Insight and Tactical Foresight are presented in sections 5.4, 5.5 and 5.6, respectively. Section 5.7 discusses the role of organisational culture in identifying and managing resource weaknesses. Section 5.8 presents the Generic Foresight Process Framework, followed by an illustration of the Organisational Resource Weakness Identification and Management Framework to further expand on the generic foresight

process framework and highlight the findings of this study (5.9). The chapter concludes with an outline of the study's theoretical contributions (5.10) and a summary of the chapter (5.11).

5.2 Overview of the Research Problem, Aim and Objectives

This study is dedicated to the crucial research problem of how firms can identify and mitigate weaknesses within their resource bundle, exploring the role of strategic foresight. This issue is of paramount importance as it has practical and theoretical relevance. To comprehensively understand this problem, I merge two distinct bodies of literature, the Resource-Based View and Strategic Foresight frameworks.

While most RBV empirical studies have focused on firm resource strengths, there is a pressing need for more research to understand how firms identify and manage their weak resources. In other words, the literature primarily focuses on resources that enable the firm to achieve a competitive advantage or increase performance. However, it has largely overlooked the role of resource weaknesses in performance heterogeneity. This has led to a limited understanding of how firms can identify and mitigate weaknesses. Additionally, though the RBV posits that firms need the foresight to develop a desirable resource base in a dynamic environment (Barney, 1986; Ahuja et al., 2005), there is a noticeable gap in the discussion on the role of strategic foresight in resource rebundling, especially on how firms identify resource weaknesses. Addressing resource weaknesses can lead to significant benefits for firms. It can reduce the likelihood of being targeted by a competitor, leading to increased efficiencies and the ability to exploit new opportunities. Firms that proactively account for these weaknesses can turn the tide in their favour, as they may require less time and investments to reach a favourable resource position that could provide a competitive advantage. Managers can play a critical role in shaping the future context to their advantage. Their understanding of the likely evolutionary path of strategic factors and their ability to mitigate the impact of strategic weaknesses can be instrumental in a firm's success. Firms can exploit opportunities for manipulation, mainly when rivals cannot counteract such manipulation. They can strengthen the dimension of their strategic assets, mitigate the adverse effects of their strategic liabilities, and even influence their rivals by reducing their asset strength and increasing the strength of their liabilities (Arend, 2004). Therefore, a firm's strategy content should focus on its distinctive internal characteristics and address its potential weaknesses.

Aside from the management literature, strategic foresight explains how firms navigate through uncertainties, serves as a micro foundation of the firm's dynamic capabilities (Vecchiato, 2015), and enhances the outcome of dynamic capabilities (Rohrbeck & Schwarz, 2013; Schwarz et al., 2018; Haarhaus & Liening, 2020), allowing firms to purposefully restructure their resource base as an ongoing event. Integrating the RBV and Foresight literature widens our understanding of how firms can identify and manage their resource weaknesses.

The following section summarises the key findings of this research.

5.3 Summary of the Key Findings

The Organisational Resource Weaknesses Identification and Management Framework, illustrated in Figure 5.1, is a product of this study's critical contributions. The model is significantly shaped by the research findings discussed in Chapter 4 and the comprehensive literature review presented in Chapter 2.

The model draws upon two dominant theories that explain resource heterogeneity among firms: the Resource Based View and Strategic Foresight. Findings suggest that firms' strategic foresight and insight are critical factors in enabling the firm to make the 'unknown' weaknesses 'known' so the firm can deal with the weaknesses. Firms use strategic foresight to identify the rise of future weaknesses. A firm's strategic insight enables the firm to identify current and emerging weaknesses. Once the firm has identified a weakness, it uses its understanding of its ecosystem to determine the probable outcomes of reconfiguring its resource base. Firms perform tactical manoeuvres by reconfiguring their resource base to establish a desirable resource position. As shown in the model (arrows), strategic insight informs strategic foresight, and strategic foresight and insight inform a firm's tactical foresight. The study's findings also indicate that a firm's pragmatic outlook towards the future supports identifying and managing resource weaknesses.

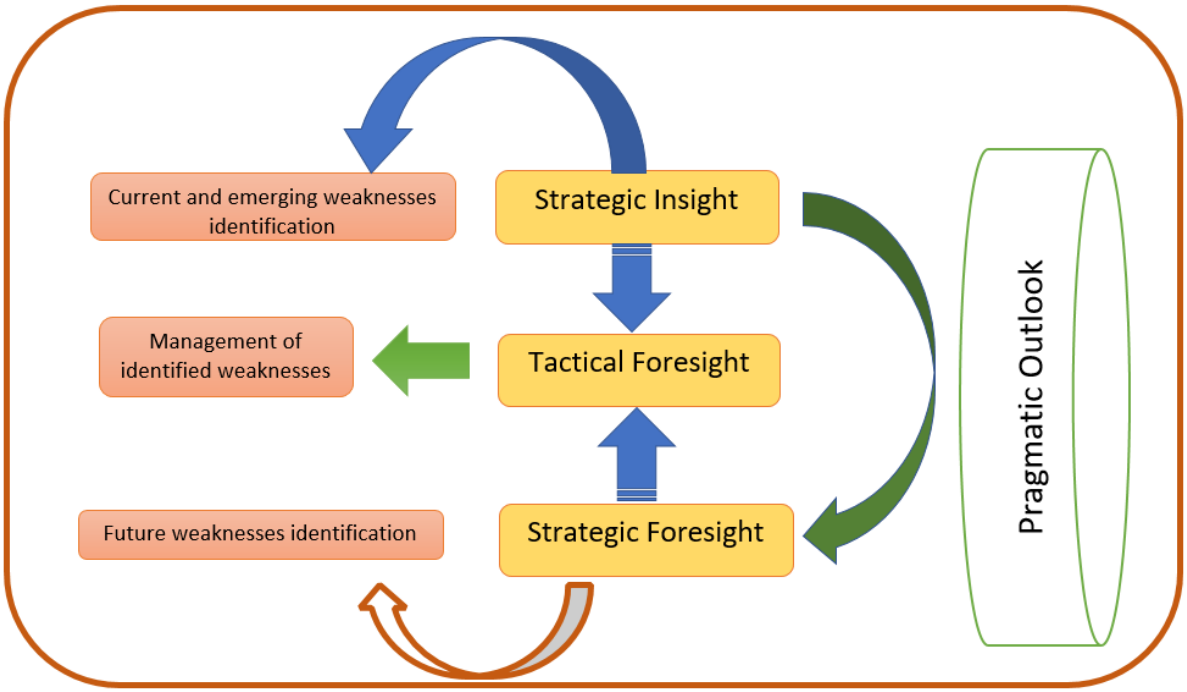

Figure 5.1: Organisational Resource Weaknesses Identification and Management Framework.

The following sections expand on the findings.

5.4 Identification of Probable Future Weaknesses (Strategic Foresight)

One of the critical findings of the study reiterates the constant pursuit of understanding the future by organisational members, regardless of the use of structured foresight approaches. There is a consensus among participants that the intelligence derived from foresight exercises and the subsequent understanding of its implications for resources are pivotal to securing a competitive advantage and mitigating any future competitive disadvantages. Firms indicate that their foresight activities enable them to reduce perceived strategic uncertainties (Elenkov, 1997) and synthesise their perceptions of the environment with their actions to facilitate the firm's adaptation to its environment (Hambrick, 1981; Jennings & Lumpkin, 1992). Foresight is crucial for firms to identify the most suitable future resource position, thereby gaining a competitive advantage and mitigating any disadvantages (Hambrick, 1981; Hamel & Prahalad, 1994; Slaughter, 1996).

Findings indicate that firms employ a variety of foresight approaches, utilising various foresight tools. Some firms integrate structured foresight exercises using standardised tools into their organisational routines. Others adopt structured yet limited foresight, focusing only

on the aspects of the environment they consider crucial for opportunity identification and survival. Interestingly, findings indicate that engaging in any form of strategic foresight activity is better than none, and the process supports learning and feeds into the firm's strategy. However, the data provide limited evidence to judge the efficacy of a specific form of strategic foresight activity for identifying weaknesses. Nevertheless, participants were unanimous in their belief in the role of strategic insight and tactical foresight in identifying and mitigating current and emerging weaknesses.

Interestingly, while firms engage in structured foresight activities, findings indicate that collectively or individually, organisational members always strive to understand the future, even without using structured approaches. Organisational members think about the future individually (Slaughter, 1995), lending to the organisation's foresight capability. Firms are pragmatic in their view of the future and do not use their foresight exercises, including various scientific techniques, to extrapolate the past to predict future events. For them, foresight is about understanding the probable future and developing multiple mental models that enable them to decipher what those futures mean for their resource's dimensions. This approach not only creates insights but also helps managers be change-ready. What firms aim to achieve is 'foresightfulness', which Tsoulas & Shepherd (2004, p.138) term as "the ability to cope with the future, the capacity of an organisation to respond to the organisation's change in circumstances in a way that the organisation continues to survive and prosper".

5.4.1 Structured Strategic Foresight Exercises

Findings show that firms use various structured strategic foresight approaches, such as scenario planning, trend analysis, backcasting, and forward-looking exercises, to understand future resource requirements. However, one of the critical aspects of the findings is that firms undertake foresight exercises predominantly to peer into their future resource requirements to take advantage of an opportunity. However, such foresight enables firms to work backwards to identify probable resources within their resource bundle, which may become a weakness. Firms make sense of the future by retrospectively looking at what needs to change to reach the future state (Gioia et al., 2002). As the CEO (Education Services) pointed out, they identify "*what resources would be required to deliver (in the future) and what we currently have"*. Similarly, the CEO (Play Equipment) highlighted that their foresight enables them to "*workaround"* their resources. Of course, firms need to be organised to enable them to restructure their resource base, which the CEO (Play

Equipment) clarifies, *“We have got a good system, we meet weekly, then we have monthly board meetings, we obviously have quarterly risk registers, we are very process-driven”.*

As stated by the CEO (Play Equipment), outputs from the firm's foresight activities are fed into organisational routines to help the firm make sense of its findings and the potential impact on its resource base. Such routines and processes result from the firm's insight into its resources. Interestingly, organisational routines that constantly seek new information lead to more intelligence gathering for the firm's foresight activities. For such firms, strategic foresight is not a one-time exercise but an ongoing process that has no clear beginning and ending (Rohrberk et al., 2015), as exemplified by the Senior Project Manager's (Consumer Electronics) statement, '*We always engage in research, looking for trends'*.

The success of a firm hinges on its proactive approach to continuously reassessing its understanding of the future, especially when it encounters uncertainties beyond its current scope. The participants in the study emphasised this adaptability as a means to enhance their resilience and maintain a competitive edge. However, it is essential to note that specific threats or emerging uncertainties often trigger the focus on foresight activities. The study underscores that when firms face profound uncertainty, they engage in more focused strategic foresight activities to gather strategically relevant information that can guide their assessment of the resource base's implications, including identifying potential weaknesses, as discussed in the following section.

5.4.2 Limited Foresight Activities

The data reveals that the availability of expertise, cost, managerial mental capacity and the depth and breadth of intelligence needed are vital factors influencing firms' structured foresight activities. However, the findings also indicate that managers play a pivotal role in this process. When firms perceive the environmental conditions as too complex, where the speed of change can make distant foresight difficult or impossible, managers are more likely to refrain from incorporating formal, full-fledged foresight activities. This strategic decision is often guided by managers' perception of the future as cognitively distant, a state where the future is deemed too different or unfamiliar to be understood, and hence, its probable future weaknesses cannot be comprehended, a finding that aligns with the insights of Eisenhardt and Martin (2000), Gavetti and Levinthal (2000), Schmidt (2015), and Wayland (2015).

Furthermore, the findings of this research indicate that managers adopt a selective approach to foresight when firms confront challenges, and their mental capacity is limited. They focus on variables closely tied to their resources, particularly the section of the environment that encompasses customers, suppliers, competitors, and regulatory groups, all of which significantly influence the firm's behaviours. When managers anticipate a potential decline in their resources, they shift their attention to those aspects of the environment that offer potential solutions to their concerns. As quoted by MM3, a striking example is the notion of not *'worrying about something that could happen in four years when we could go bust in six months'*. This perspective aligns with Dill (1958), who argues that under uncertainties, firms concentrate on their task environment and respond by developing cognitive formulations to guide the firm.

5.4.3 Informal Foresight

Irrespective of the level of foresight activities, use of a method or not, the focal aim of firms' foresight activities is to reduce uncertainty, to make the 'unknown' 'known' and, therefore, something that the firm can manage. Data highlights that managers sense helplessness and are anxious when they believe they cannot decipher the future state of the environment, its impact on their resource base and the likely consequences of their response options. Interestingly, firms are more comfortable when they are aware of an emerging weakness, even though they may not currently have a solution. It is the 'unknown' which causes discomfort among firms. Hence, firms, especially senior management, deliberately or 'subconsciously' engage in strategic foresight using no standardised tools. Tapinos and Pyper (2018) argue that individuals can use forward-looking analysis to produce foresight without standardised methodology.

In summary, the findings of this study demonstrate that foresight exercises enable firms to proactively respond to environmental shifts, anticipate external changes, and explore various response options that minimise the risk for the firm. As McMaster (1996) and Cockburn et al. (2000) argue, firms that comprehend the future's structure and the impact of their current actions on future success and then commit accordingly are likely to outperform their peers. From a resource perspective, identify the emergence of any future weaknesses within the resource portfolio. Once firms have identified the key emerging variables that could be an opportunity or a threat (for example, technology social trends), they use their strategic insight into their resource bundle to identify resources that may become a

weakness. The firm's strategic insight enables it to develop tools that would allow it to monitor those resources that may decay over time.

The following section considers how firms identify their current and emerging weaknesses, drawing on the value of their strategic insights into their resources and the environment.

5.5 Identification of Current and Emerging Weaknesses (Strategic Insight)

Strategic Insight allows firms to connect their resources and environment, especially their task environment, generating superior insights critical to competitive advantage (Yorks & Nicolaides, 2012) and superior performance. A firm's strategic insight in identifying its resource weaknesses and strategic options comes from firm-specific resource weakness cognition, knowledge of the ecosystem and domain knowledge.

The dynamic capabilities literature highlights managerial cognition's unique and pivotal role in shaping a firm's dynamic capabilities (Adner & Helfat, 2003; Helfat & Peteraf, 2015). The variations in managerial cognition result in firm resource heterogeneity, and a firm's pre-existing understanding of its unique resources contributes to its sensing, seizing, and reconfiguring capabilities (Helfat & Peteraf, 2015; Teece & Leih, 2016). In particular, the findings of this research highlight the importance of managerial cognition in minimising resource weaknesses. It also points out that cognitive limitations or mental slacks can lead to inattention, potentially leading to undesirable outcomes, as Schoemaker (2019) has pointed out.

The following sections summarise these findings.

5.5.1 Resource Weakness Cognition

Resource cognition, which involves identifying resources and comprehending their potential uses, plays a pivotal role in firms developing a mental model of their resources, which Danneels (2010, p.21) conceptualises as a firm's “resource schema”. This 'resource schema' is a cognitive framework that firms utilise to grasp and manage their resource dimensions. The absence of this 'resource schema' can lead to firms lamenting their inability to detect potential issues within the firm earlier (Augier & Teece, 2008; 2009; Schilke et al., 2018). While the literature on managerial cognition primarily focuses on its role in identifying strategic assets and opportunities, this research's findings underscore the relevance of

cognition in identifying and managing weaknesses within the resource portfolio. Indeed, Danneels's (2010) case study of Smith Corona, formerly one of the world's leading manufacturers of typewriters, highlights that resource cognition is a critical and missing element of the dynamic capabilities framework.

Findings indicate that resource weakness cognition includes three areas: awareness of the firm's current resource dimensions and limitations, predictable weaknesses that may emerge from the resource portfolio, and the critical need for firms to address gaps in knowledge of the resource schema. The following sections address these three areas.

5.5.1.1 *Awareness of the firm's resource dimensions and their limitations.*

One of the study's key findings is the crucial role of managerial resource cognition and its significance in identifying resource weaknesses. Managerial cognition underscores the role of individual and group cognition in shaping perception and influencing decision-making in conditions of uncertainty (Hodgkinson & Clarke, 2007). Duncan (1972) also emphasises that perceived uncertainty depends on the manager's cognitive ability to handle ambiguity and uncertainty.

As underscored in Chapter 4, Section 4.3.2, the respondents frequently mention having an 'awareness' of their resources, highlighting the significance of managers' comprehensive understanding of their firm's resources as a critical factor in identifying and mitigating weaknesses. Firms with a thorough awareness of their resource dimensions and limitations can leverage their existing resources, identify the interplay between resources within their resource base, and better identify and mitigate any weak resources. Firms believe that if they can identify the weaknesses within their resources, they may be able to manage them better. Resource cognition guides firms in identifying the best course of action to address their weaknesses. It supports Danneels's (2010) findings from their Corona Smith case study that firms with a limited critical understanding of their resources may lead them in an undesired direction. Awareness of where weaknesses could emerge is crucial. As the President and Chief Executive Officer (Automation) highlighted, "*As long as you have that awareness, then I think you can manage those risks reasonably well".*

Findings also align with the dynamic capabilities literature. For example, Adner and Helfat (2003) and Helfat and Peteraf (2015) highlight that managerial cognition influences the firm's dynamic capabilities. Helfat and Peteraf (2015) find that resource cognition is a source of

heterogeneous response to environmental changes and serves as the micro foundation of the firm's dynamic capabilities. "It is not only resources that affect dynamic capability but also cognition about those resources", highlighting that dynamic capabilities need 'resource schema' (Rohrbeck & Schwarz, 2013, p.26).

Findings also indicate, as Schoemaker (2018) found, that limitations to managerial cognition could lead to inattention. The case of the bakery (discussed in Section 4.3.2) that needed to understand how changes to their machinery may affect the health and safety requirements is a simple example of how limitations to managerial cognitions may lead to weaknesses within the firm. Such limitations may make firms regret not being able to identify potential problems within the firm earlier (Augier & Teece, 2008; 2009; Schilke et al., 2018). The case of the maintenance company (discussed in section 4.3.2) is a good example.

A critical outcome of resource cognition (*awareness,* as the participants put it) is that firms can identify the most probable weaknesses that may emerge within their resource bundle due to the idiosyncratic nature of their resources. Findings identify three distinct types of weaknesses that firms classify and use their understanding of their resources to monitor whether any of the identified resources are moving towards becoming a weakness. They include any potential weaknesses in first principles, potential weaknesses that are firm-specific due to their path-dependent resource endowments and weaknesses due to the nature of the industry. The following sections discuss these three classes of weaknesses.

5.5.1.2 *Knowledge of the Potential Predictable Weakness*

Weakness in First Principles

Findings indicate that firms are aware that their strategic assets (that can be identified *a priori*) that offer the firm an advantage in the marketplace (financial resources, plants, and machinery) may become a weakness due to decay or developments elsewhere in the industry in line with Itami & Roehl (1991) and Connors's (2007) arguments. Findings show that firms develop systems to monitor their first principles and ensure they do not become a weakness, a continuing strategic capability. Data also indicate that firms view their key characteristics (e.g., reputation; employer brand) as a source of competitive advantage a priori (first principles) and hence may become a weakness (Connors, 2007). Excellent examples (discussed in Section 4.3.2) come from the Chief Executive's (Media) categorical

view that "*All firms must be credible*," and the General Manager (Public Services) who identified "*reputational damage which could affect the sustainability of the business*".

An exciting part of the interview with the CEO (Education Services) was when he shared his thoughts on his firm's future direction and his unease about their current organisational culture, which he described as a culture of *'fun and games and not a professional, commercial or corporate approach to things'.*
CEO (Education Services) said,

'*We are a charity.....I have been here (X) years, and one of the things I have always struggled with is that I think there is a lot that the company needs to do better. However, we have grown from 13 million to 42 million.....despite some of the problems and challenges... but it naturally does not feel right. I am talking about 'culturally' those kinds of things.... (currently) they do not affect our bottom line. They are not affecting our survival. They are not affecting our key performance indicators. However, something does not feel right ..... Moreover, this is where there is going to be a challenge (to convince and motivate staff for a change)... The biggest challenge for me moving forward is ensuring that the company is still fit for purpose.*

When probed about why he feels their current organisational culture may not be fit for the future, the CEO (Education Services) said that even though the firm seems to be heading in the right direction based on the firm's key performance indicators, he is of the view that in the future, people joining a large charitable, educational organisation (like theirs) may not be entirely motivated by money but by the value of the organisation. Hence, to attract and retain talent, a strategic resource, they must change their culture over time to align with the future competitive space.

The CEO added,
'Millennials want to know what the brand value is, not in terms of making money, but what we stand for. They want to see the brand value. If there is no value and if the values do not align, they are not willing to work. It does not matter how much we offer and how much money we make.'

The implication the CEO (Education) draws is that the decay in business characteristics may take longer to manifest, and the weakness will be exposed if a firm is unprepared to respond to environmental changes (West & DeCastro, 2001). Decaying business characteristics may

take longer to manifest in a more mature industry like education. However, it also takes a long time to set it right as achieving a new favourable resource position takes longer (West & DeCastro, 2001; Breton-Miller & Miller, 2013). Liabilities in intangible first principles detract the firm from developing future competitive advantage, exacerbate the current liabilities (especially in a more dynamic environment), complement other weaknesses (Wild & Lockett, 2016) and may lead to perpetual decline (Hughes et al., 2010; Dierickx et al., 2013).

Firm-Specific Weaknesses

Findings underscore the strategic insight of firms, revealing their ability to anticipate probable weaknesses that may develop within their resource base due to the distinctive nature of their resources. A firm's resource weakness cognitive schema includes assessing if such a weakness would be rare and valuable and, if so, to what extent the weakness dimension will give the firm a competitive disadvantage. A weakness is rare when competitors do not have such a weakness. They become valuable when there are no commonly available solutions that the firm can deploy to address the weakness. As the CEO (Hospitality) highlighted, *"All four (hotels) may have different weaknesses based on where they are located"*. However, one of their hotels has transitioned *"from a position of strength, they are in a position of weakness"* and could become a strategic liability due to the main airport in Bangalore shifting to a location 60 km away from the hotel.

Data demonstrates that firms accounting for weaknesses must also grasp the context and the dynamic nature of time needed to eliminate such inadequacies. The dimension of time or "time-dependency" is crucial in the evolution of resource weaknesses (West & DeCastro, 2001, p.421). Like strategic assets, weaknesses evolve. Additionally, applying Dierickx and Cool's (1989) bathtub metaphor, removing resource weakness emerging from strategic assets takes time. As Wernerfelt (1984) argue, like assets, they are semi-permanently attached to the firm.

Discussing how the strategic assets involved in producing internal combustion engines will become a liability over time due to the emergence of electric vehicles and government policies in various countries regarding fossil fuel emissions, MM6 highlights the time dependency in removing liabilities. *"This is where you must think about how I can replace the plants. In Europe, maybe in 2030, but in South Africa and India, it may get slightly later, maybe in 2050".* Findings underscore the importance of a firm's cognition of its potential

firm-specific weaknesses, emphasising its crucial role in judicious monitoring and finding effective ways to attenuate such inadequacies.

Industry-specific weaknesses

Though the RBV is the study's underpinning theoretical lens, findings do not exclude the effects of industry-specific weaknesses that firms have identified within the data. Indeed, McGahan and Porter (1997) have accounted for the industry's influence on firm performance. They emphasise that it would be 'misguided to disconnect the influence of organisation from the industry and competitive contexts in which firms operate' (p.30). Recently, Bradley et al. (2018) highlighted McKinsey's report on the industry effects that shows the annual economic profit of companies in Software and automobiles to be far greater than Oil, Gas and Electric Utilities between 2010 and 2014, indicating the significant impact of industry-specific factors on firm performance.

The findings of this research underscore the critical need for firms to proactively manage the resources that can potentially transform into weaknesses under the influence of industry effects. Instances from the data, such as '*environmental compliance'* in the fire training industry and unpredictable government policies in the further education sector in the UK, highlight the importance of this proactive approach. However, as section (4.3.2) emphasises, these industry-specific weaknesses can quickly become firm-specific if a firm fails to mitigate them more effectively than its competitors.

5.5.1.3 *Addressing gaps in knowledge*

Firms' insight into their resources, hierarchy, and knowledge base enables them to develop suitable and robust systems to monitor and minimise any gaps in their knowledge of resource weaknesses arising in isolation or because of an interplay with other resources within the bundle. To bridge the gap between weakness cognition and organisational action, managers judge how best to filter and synthesise information from organisational members and incorporate feedback loops into their system (Priem & Cycyota, 2001), enabling them to identify weaknesses in their resource bundle effectively. As a collaborative social process, foresight involves individuals working together to comprehend the future and its possible outcomes (Rohrbeck et al., 2015). This collaborative aspect is pivotal, as it allows for the integration of 'blocks of knowledge' (Durand, 2009, p.294), thereby reducing bias and making the firm more perceptive, flexible, and adaptable to environmental changes (Scoblic, 2020) and could foster institution-wide change (Vuori, 2015).

In addition to predictable weaknesses, findings indicate that weaknesses may emerge from shifts in the firm's ecosystem, as highlighted in the following section.

5.5.2 Knowledge of the Ecosystem

Findings show that firms use their insight into the task environment to identify weaknesses that may emerge due to their interaction with customers, value network and competition. Firms strive to understand how weaknesses may emerge from competitors who compete by exchanging resources with the firm's customers and suppliers (Child 1972). Equally, findings indicate that firms develop an insight into their value chain partners' resources and try to understand how changes to their resource base may lead to weaknesses within the firm's bundle. From the 'resource dependence' theory perspective, the lack of control over resources that the firm requires to compete in the environment it chooses to operate in and its relationship with its counterparts leads to uncertainty (Child 1972). A firm's insight is critical in identifying the potential for losing access to its critical resources, thereby enabling managing uncertainty.

The findings also highlight the importance of 'sector awareness'. Firms benefit from industry-specific knowledge due to the path-dependent nature of the developments in essential industry conditions (Kor & Sundaramurthy, 2009). A lack of insight into the industry may put the firm at a disadvantage in identifying any emerging weaknesses as the industry conditions change.

In addition to industry-specific knowledge, this research's findings indicate that firm-resource-specific experience is one of the critical requirements for identifying and minimising current and emerging weaknesses, as highlighted in the following section.

5.5.3 Domain Knowledge

Firm-specific resource cognition is deeply rooted in the managers' practical experience with the firm's resources (Schmidt, 2015). Accumulating this practical experience in handling various situations leads to developing knowledge in dealing with the firm's resources. This practical aspect of resource cognition is crucial, allowing firms to anticipate and act on given situations. For example, a firm that has successfully reconfigured its production processes to be more efficient can respond more effectively to changes in demand. Hence, experienced managers are better equipped to identify threats and opportunities in their

current markets (Shane, 2000) and new markets, technologies, or products (Helfat & Lieberman, 2002). Differentiated resource configurations often result from the firm's experience in resource reconfiguration (Kor & Sundaramurthy, 2009) and Sturman (2003) found experience to be one of the predictive variables of managerial performance in overly complex environments.

The knowledge gained through experience of the firm's resources and industry experience is not just critical, but it is the key to identifying and managing weaknesses. This finding is in line with the arguments of Helfat and Lieberman (2002), Kor and Sundaramurthy (2009), Schmidt & Keil (2013), and Schmidt (2015). They all agree that a firm's knowledge of its idiosyncratic resources and experience enables it to make superior judgements about using its resources. Our findings also underscore the immense value of idiosyncratic resource knowledge and experience in managing deep uncertainties, emphasising the contextual nature of this knowledge. A compelling example from the data set that underscores the challenge of transferring knowledge from other industries comes from the Chief Executive (Media) discussed in Section 4.3.3. The Chief Executive recalled how a high-profile appointment failed due to the CEO's lack of industry knowledge, '*There was a perfect storm due to the lack of knowledge of the sector'.* Our findings align with those of Helfat and Martin (2015), who found that managers have difficulty transferring knowledge structures from one context to another.

Another exciting finding is that firms that have gone through challenges in resource re-bundling and have learned from their past mistakes are better at identifying and avoiding weaknesses when they rebundle their resource base, highlighting the role of experience and knowledge accumulation through learning from mistakes. However, in organisations, distinct knowledge accumulation happens at different levels. Furthermore, our findings confirm that distinct levels of management focus on different resource weaknesses within the firm, as highlighted by the CEO (Consultancy). He said, *'You talk to the IT man, and his biggest weakness in the entire world will be the standard of the server. Whereas the HR will not even know what a server is',* highlighting people closer to the resource understand its dimensions better.

Another excellent example highlighting the critical role of experience and the distinct levels of knowledge accumulation comes from the Operations Manager (Meat Industry). Highlighting the source of the essential knowledge to make changes to the machinery that

allowed the firm to cater to an alternative segment (retail) when their key customers (restaurants) were closed due to the pandemic in 2020/21, the operations manager said,

> *"Employees, who are on the floor, I would say, the real action guys versus the suggestion guys, which I consider higher management. ....In most places, if you see the higher management, they will be there for up to five or six years. But the employees on the floor have been there for many years. So they're experts—they are more experts than the people on the top. Yeah, they don't have that education. They don't have that research background, but they are living it....they don't call themselves experts, but they are experts by doing this task."*

Hence, uncertainty also results from incomplete knowledge about individual resources, differences in the hierarchy, and the intensity of individuals' preferences and values within the firm's hierarchy (Zarefsky, 2019). Findings indicate that to overcome knowledge gaps, firms establish systems and protocols to ensure a smooth flow of information, enabling them to identify and manage weaknesses within their resource base.

5.6 Managing Identified Weaknesses (Tactical Foresight)

5.6.1 Judgement under Uncertainty

While strategic insight enables firms to identify current and emerging weaknesses, firms use their judgment to determine the best course of action to remove or mitigate the impact of the weaknesses. Findings show that when firms identify a weakness within their resource bundle (current or future), based on the understanding of the situation from the available information, they decide how best to mitigate an identified weakness. Firms use their intuitive expert judgement (Tapinos & Pyper, 2018) without all relevant information to determine the potential impact of the weaknesses. As Teece & Leih (2016, p.6) state, firms recognise that they will not be able to have 'enough information' to see through deep uncertainties. Hence, they use their insight and judgement in combination with the available information to activate action. A firm's basis to activate action is anchored in its understanding of the situation it finds itself in, its idiosyncratic resources and its anticipation of the eventual outcomes of its decisions. This critical finding aligns with Schmidt (2015), who argues that firms use their judgement to inform their decision, though the outcome probability may still need to be fully known.

Though discussions on managerial judgement predominantly focus on decisions on resource acquisition and deployment under uncertainty (Schmidt, 2015), our findings add to the knowledge by showing that managerial beliefs on resource weaknesses are essential as they contribute to a firm's ongoing strategic success.

5.6.2 Response Tactics

Recognising that resources within a firm are interconnected is essential, and changing to address weaknesses can have far-reaching implications. Firms must consider the relationships between their resources, the task environment, and potential responses. Guided by their strategic insight, firms must explore how changes to specific resources can impact other resources in the portfolio and how different response options can influence actors in the task environment, such as partners and competitors. When developing response tactics, it is crucial to consider the critical role of strategic assets and the interaction between strategic and non-strategic resources in addressing weaknesses.

The research findings suggest that a firm's understanding of the external environment and its internal resources affects its decisions to address its weaknesses. Teece and Leih (2016) argue that firms must act on the available information. This "available information" includes the firm's insight into its task environment, resource base, and expectations (foresight) on the outcome of its resource rebundling. Findings suggest that firms engage in tactical manoeuvres and decide how to manage a weakness based on assessing the actions and reactions of various stakeholders, other resources within the firm, competition, and regulators to maintain their strengths and mitigate weaknesses.

Findings show two broad classifications of how firms respond to identified weaknesses in their strategic assets. A firm's response depends on its understanding of the longevity of the assets in offering a competitive advantage or performance improvements, i.e., the firm's strategic foresight.

Under deep uncertainty, where the firm cannot decipher the future value of its strategic asset but faces a short-term impact on the strength dimensions of its resource base, firms mitigate by reorganising ordinary resources and adding new resources and capabilities to support their strategic asset. An excellent example from the data set includes the Canadian meat factory changing its production line to produce meat cuts for different markets (the grocery retail segment). Such judgements stem from the firm's insight into its resources, enabling

them to identify the value-creating potential by rebundling an emerging strategic weakness with non-strategic resources (Karadag & Poppo, 2020).

Alternatively, firms can find alternative uses for their assets to gain an advantage in a different product market. For example, Hughes et al. (2020) highlight how American Roots, McLaren and Mercedes-Benz F1 reorganised their resource base to mitigate any reduction to the strength dimensions of their strategic assets during the pandemic. American Roots used their production lines to "create valued personal protective equipment", and McLaren and Mercedes-Benz F1 started producing "innovating new ventilators for health services worldwide" (Hughes et al.,2020, p.485).

On the other hand, if the firm's foresight indicates that the future value of a strategic asset is a liability, firms try to maximise the utility value of their strategic assets before they remove them from their resource bundle. Again, a firm's understanding of its asset's interplay with its resource base and the task environment determines how long it can retain its assets and in what configuration. Findings suggest that the firm's foresight on the interplay between its restructured resource base and the critical variables that the firm expects the new resource structure to interact with influences its judgements regarding resource weakness mitigation. The difficulty in removing a weakness depends on the complexity of its relationship with the firm's resource base. Strategic assets, by nature, take time to develop and must be exploited by the firm.

An illustrative example of this is the case of the automotive firm that has identified the future state of the resources associated with its internal combustion engine (ICE) as a liability. However, its current option is to maximise the value generation of those resources based on their understanding of the future market trajectory of ICE cars in different parts of the world. Hence, the current plan is to reduce investments in associated resources and move their ICE factory to those markets where they expect demand and favourable regulations over the years. Discussing his thoughts on the future of their ICE assets, the Head of Mfg. Quality (Automotive) said, *'These (ICE) manufacturing plants will be a liability for the company. This is where you will need to think about how I can replace the plants. In Europe, in 2030, EV vehicle populations may be higher, but in South Africa and India, it may get slightly later in 2050. So, can I ship these plants (ICE) from the UK to India or South Africa, or can I utilise these production facilities (in the UK) to export to these countries? The latter option may be difficult because..... We expect investment in these facilities to go down.'*

On the other hand, the Food Consultancy firm, as highlighted in section 4.4.2, changed its services from offering consultancy on ISO9000 standards to food safety training and consultancy, targeting a different market for its services (within a brief period, as their strategic assets became a liability in a very short term). It is worth noting that the path-dependent nature of the resources plays a critical role in the time dependency required to mitigate when the firm identifies the current or future state of those resources as a weakness.

5.7 The Role of Organisational Culture - Pragmatic Outlook

5.7.1 Being curious about the future

Organisational culture is a source of a firm's competitive advantage (Barney, 1986b). In particular, findings indicate that firms with a pragmatic outlook about the future can better mitigate identified weaknesses from their resource base. One key term several respondents use is being "*curious about the future"*.

Findings show that firms take a more pragmatic approach to identifying potential future weaknesses. Firms appreciate and accept that not all future weaknesses can be identified. Firms believe it is almost impossible to foresee every dimension of their resource weaknesses and their effect on the firm, especially in dynamic environments. Firms find the complexity of the environments and the speed of change making "distant" foresight difficult or impossible (Eisenhardt & Martin, 2000, p.1112). In line with Wayland (2015), firms believe that understanding the effect of distant changes is as tricky as anticipating the change. The Chief Executive Officer (Engineering) used this analogy to explain the intricacies and difficulties in foresight: *"If people knew how to read the future, they would not be working; they would be making money on the stock exchange."*

Interestingly, this does not stop firms from being curious and fearful about the future. Firms with a pragmatic outlook accept that not everything can be foreseen, yet constantly explore ways to understand the future. Indeed, findings show that successful firms believe that while the distant future may be challenging to foresee, they must use all the tools to keep their *'antenna up' (*The Chief Executive Officer - Engineering) and listen to the future. The CEO's thoughts align with McMaster (1996), who highlights that firms must try to see the shadow of the future and what that means to the firm.

5.7.2 Being change-ready.

Data shows that firms that successfully identify and mitigate weaknesses have embraced a culture of change readiness. Hughes et al. (2020) argue that such a posture is crucial to a firm's survival and future ability to thrive. Armenakis et al. (1993, pp.681–682) define readiness as the "cognitive precursor to the behaviours of either resistance to, or support for, a change effort". Change readiness (as a firm-level construct) refers to the shared resolve of the organisation's members to implement a change and the shared belief in their collective capability to implement change effectively (Weiner, 2009). The definitions given by Armenakis et al. (1993) and Weiner (2009) both refer to a shared resolve and belief in an organisation's ability to implement change effectively. Goh et al. (2006) see organisational readiness for change through a cultural lens. They argue that firms with a culture of openness and flexibility enhance their change readiness.

Findings show that firms constantly changing their resource base are better prepared to make relevant changes when facing uncertainties. The President (Hospitality) offered an excellent analogy to emphasise her need to be change-ready.

> *"The flywheel is already going on the companies that change. Thus, they are like, oh, wait, let us just wrap another rope around it and get it going again. And companies that did not change and were just happy with how things were, the flywheels buried underground. Thus, to get it out, they must find where it is buried; the grass has already grown over it. They must get their metal detector out. It just takes them a long time to know what the flywheel is, let alone get it going."*

Indeed, a ‘culture of continuous renewal keeps the organisations supple and responsive’ (Teece & Leih, 2016, p. 9).

Building on these findings, I develop a Generic Foresight Process Framework in the next section. The process framework identifies four distinct phases, from gathering information through the different levels of foresight to producing outputs (which feeds into the firm’s strategy development and strategic planning processes).

5.8 Resource Weakness Identification and Mitigation: A Generic Foresight Process Framework

The Generic Foresight Process Framework (Figure 5.2), an extension of Horton's (1999) and Voros's (2003) foresight process framework (Voros's Generic Foresight Framework available in Appendix 4), is the cornerstone of this study. The generic framework differs from Horton and Voros in four key aspects. Firstly, the process separates the inputs used for the foresight work into two distinct elements. Secondly, the process framework identifies three levels of foresight. Thirdly, by introducing the concept of 'tactical foresight', the model identifies the tactical importance of strategic options in weakness management. Finally, the generic foresight process for weakness identification and mitigation highlights the circular learning process and the interdependent nature of the three levels of foresight.

Building on the research findings, the Generic Foresight Process that the study presents for resource weakness identification and mitigation has four key elements: Strategic Intelligence Gathering (Inputs), Strategic Foresight, Strategic Insight and Tactical Foresight. The following sections describe them in detail.

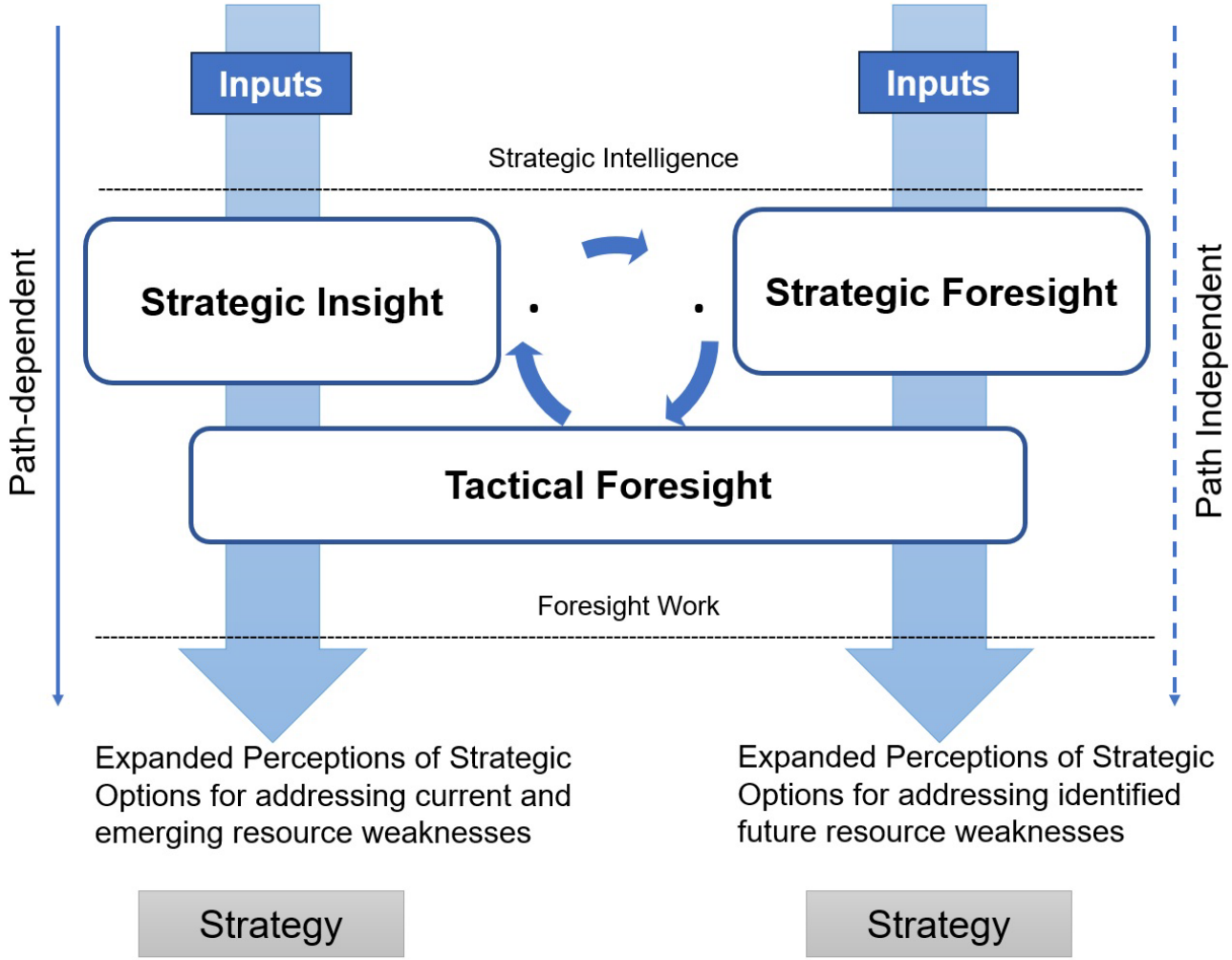

Figure 5.2: The Generic Foresight Process Framework

5.8.1 Strategic Intelligence Gathering (Inputs)

The Generic Foresight Process draws from the works of Dill (1958), Duncan (1972), Porter (1990, 1994), and Grant (2010) to delineate the firm's environment into two distinct components: the task environment (Dill, 1958; Duncan, 1972) or the 'microenvironment' (Porter, 1994; Grant, 2010) and general environment (Dill, 1958; Duncan, 1972) or the macro environment (Johnson et al., 2020). The classification builds on the information from the environment section that influences a firm's behaviours.

The task environment, for instance, consists of those relevant external and internal factors that influence the strategic decision-making process. The internal environmental factors include resources, functional characteristics, firm-level goals and objectives, and organisational processes (Duncan, 1972). The external task environment, which comprises customers, suppliers, competitors, and regulatory groups, is formed by the organisation's relationships with three players: its customers, suppliers, and competitors (Porter, 1994; Grant, 2010), and potential entrants, substitute, and complementary products (Porter, 1994). Porter identified these six key elements, which he terms 'forces' that influence the ability of an organisation to achieve its goal or business strategy. The environment that indirectly affects the firm is its general or macro-environment, including social, political, economic, technological, legal, and environmental factors. However, these environmental factors influence the competitive landscape's future structure and may give rise to weaknesses.

By delineating the firm’s environment and by identifying the distinct information that firms gather to scan for strategic intelligence in their foresight work, I separate the 'inputs' or information into two distinct elements:

1. The inputs that offer the firm strategic intelligence to continuously monitor and provide strategic insight and tactical options to sustain its current competitive position by managing its identified current and emerging weaknesses.
2. The inputs that offer strategic intelligence for traditional strategic foresight work, as identified by Voros (2003), aim to understand the future competitive landscape and, thereby, future weaknesses.

To monitor and manage current and emerging weaknesses, the firm's intelligence gathering predominantly comes from organisational routines and processes like risk registers (SM2), financial data (SM1, SM6), internal reports (SM11), and data from value chain partners,

including suppliers (SM12, SM2), customers (SM5, SM10), competitor analysis, competitive intelligence (SM1, SM2, MM2, MM7), regulatory bodies (SM4, MM1), and industry data (MM3, SM6). Firms develop routines and processes that constantly seek specific information that is of relevance to the firm. Hence, by nature, they are path-dependent.

On the other hand, to identify future resource position, data that is path independent comes from sources consistent with the strategic foresight literature to understand the emergence of future weaknesses. They include SWOT analysis (SM1), Environmental scanning (SM11, MM4), brainstorming (MM8, SM14), horizon scanning (CO3), trend analysis (SM12), focused trend analysis (SM10, MM7), Scenario planning (MM1), forward-looking (SM11), and marketplace analysis (SM6).

The following sections explain the three levels of foresight and their functionality.

5.8.2 Three Levels of Foresight

Having distinguished the two categories of information that act as 'inputs' for the Generic Foresight Process Framework shown in Figure 5.2, I present two critical reasons that support the need to identify the three levels of foresight for weakness identification and mitigation. Firstly, by showing that the foresight process starts with summarising the 'collected information' (Horton, 1999) that leads to strategic intelligence scanning (Voros, 2003), Horton and Voros indicate that the foresight exercise has a starting point and a firm can collect the requisite information. Accordingly, the 'input phase' is the 'first step' in intelligence gathering that the firm uses to analyse and assess factors and their interrelationships. The approach is an excellent foresight approach to exploring future states and creating a 'forward view' that is 'prospective' (Voros, 2003), allowing the firm to cast back to identify probable future weaknesses. However, understanding and mitigating known and emerging resource weaknesses must consider the role of the firm's insight into its task environment, including its resource cognition, relevant managerial experience, and knowledge of the ecosystem, which gives the firm strategic insight into its task environment. Such an insight, which is firm-specific, is critical in identifying current and emerging weaknesses within its resource bundle and in resource reconfiguration.

Additionally, Horton (p.007) argues that the 'inputs' phase requires 'standard managerial practice', and hence they are easy for the firm, and the only judgemental aspect that managers should consider is to not eliminate any information as irrelevant at this stage.

While this is true in the case of prospective strategic foresight work to identify future weaknesses, this research highlights the critical role of the firm's strategic insight in identifying, generating, and searching for relevant information that it can use to enhance its insight and develop tactical options. Firms develop routines, protocols, and processes that systematically capture requisite information and support it in rigorously monitoring the task environment for any deviation. Unlike the information collected for traditional foresight activities, managers play a critical role in making judgements about the kind of information, frequency of information search and how they are processed and synthesised (routines) to inform their strategic insight and tactical foresight. As Yorks and Nicolaides (2012, p.186) state, the foundation for strategic insight is the "analysis of trends within critical domains in the task environment and synthesising trends across these domains".

Having clarified the areas of alignment and improvement with the literature, I discuss the three levels of foresight within the Generic Framework for Resource Weakness Identification and Mitigation: Strategic Foresight, Strategic Insight, and Tactical Foresight.

5.8.2.1 *Strategic Foresight*

The generic foresight process aims to understand the future competitive space and the strategic issues and opportunities (Hamel & Prahalad, 2013). Foresight exercises aim to understand the future competitive structures that are 'potential' (unknown), 'possible' because they are imaginable, 'plausible' as they could happen, 'probable' as they are likely to happen and 'preferable' are those futures that the firm wants to happen (Voros, 2003). Gathering information and scanning for strategic intelligence on these variables forms the input for the strategic foresight work. Such strategic intelligence enables and supports the firm's foresight work, and it aims to explore changes to the epistemological and ontological boundaries and analyse the impact of such changes (Wayland, 2015, p.444), enabling them to understand the future competitive landscape. Strategic foresight aims to develop an understanding of the time's philosophy, science and technology and options for meeting the challenges (McMaster, 1996).

Though the future is not entirely deterministic, the industry's current structure and actions of the players within and outside influence the future structure of the industry either by intent or not. Hence, the future will be related to the past. However, this relationship does not necessarily provide clear guidance about the future. The challenge of foresight is to see the shadow of the structure of the future rather than its content, detail, or shape (McMaster,

1996, p.151). Firms can work back (backcasting) to identify the emergence of future weaknesses within their resource portfolios.

5.8.2.2 *Strategic Insight*

A firm's strategic insight consists of a strategic awareness of its resources and their interplay with the environment in which it operates. Such insights accumulate over time and are firm-specific. Firms accrue their strategic insights from their managers' extensive and collective knowledge and experience in building and configuring the firm's resource base, resource fungibility, and knowledge of its ecosystem, including that of the industry. Additionally, strategic insight enables firms to identify and develop organisational processes that constantly seek information, enhancing their insights into their resources (resource schema) and the environment.

5.8.2.3 *Tactical Foresight*

The term' tactical foresight' is not used in management or foresight literature but finds references in military and historical strategy literature. For example, Fragmentum Sabbaiticum, an ancient historical text, describes Alexander the Great's tactical foresight. The text describes the battle between Alexander the Great and the Persian king Darius III in 331 BC. Describing the battle scene, the author states that no Western army has ever seen an elephant on the battlefield. Hence, for Alexander, some of his traditional resources and capabilities could become a weakness when his army faced elephants on a battlefield, especially when they had yet to see them, particularly on the battlefield.

However, with his most extraordinary “tactical foresight” during the battle, Alexander's army modified their spears to make spikes. They used the modified spikes to delay the elephants' forward momentum (cited in Charles's (2009, p.31) work in Studies in Classical Antiquity), thereby minimising or removing some weaknesses, such as death or injury to his front-line soldiers. Once Alexander figured out the potential impact of the elephants, though he may have had limited information, he identified their potential weaknesses on the battlefield using his insight into their resources and capabilities. To mitigate the identified weaknesses, he altered their resources to shield their strategic assets.

Alexander may have had several options. However, they formed estimated beliefs on the effectiveness of the spikes (to other alternatives), to what degree the spikes will slow down

the elephants (if at all), and possibilities of how they could mitigate their vulnerabilities. Such beliefs and expectations in a complex and partly knowable environment result from Alexander's tactical foresight, which led them to manipulate and experiment with various elements of their resources to achieve the desired outcomes. Using Teece and Leih's (2016) advice, under uncertainty, Alexander used his strategic insight into the army and its resources, the knowledge of experts, and the judgement of his commanders with the available information in their decision-making process. In doing so, Alexander significantly influenced the outcome of the battle.

Thus, unlike the foresight perspective, tactical foresight does not take the environment as given and objective but as open to imagining possibilities, and the future can be influenced. From an organisational perspective, a firm can integrate many appropriate bits of information, view one's situation objectively, and creatively visualise alternative feasible futures (Priem & Cycyota, 2001). Through experimentation and learning, firms reduce uncertainty, making the unknown known. Hence, unlike strategic foresight, tactical foresight is strongly path-dependent, and firms' resources shape their actions. However, strategic foresight plays a critical role in fostering tactical foresight. For example, both for Alexander and his soldiers, there should be a desired future, a larger purpose, which would enable acceptance from the rank and file as to why it is necessary to devise new tools (like spikes), make necessary changes to their battleground routines (for example, a new formation) and any other changes. In an organisational context, as Rohrbeck and Schwarz (2013) argue, by instilling a perception of change, uncertainty, and ways to respond, strategic foresight activities develop the emotional capacity needed by the firm to recognise and implement change collectively.

5.8.3 Learning from the Foresight Process

“The core benefits of strategic foresight lie in establishing a planned learning process about the future”, Gordon et al. (2020, p. 441). The generic foresight process framework highlights the link between the three levels of foresight and the organisational learning process. Firms use their strategic and tactical foresight, informed by their strategic insight, to maintain a dynamic resource base and offer the best performance outcome in a given context. Firms need deep insight into the current industry structure and their organisation to understand how the future might unfold. Hence, foresight depends upon a deep-rooted understanding of the industry and its structure (Whitehead, 1933; Hamel & Prahalad, 1994). Indeed,

Whitehead (1933, p.133) states that 'foresight is the product of insight', highlighting the link between strategic foresight and insight.

The following section illustrates the Organisational Resource Weakness and Identification and Mitigation Framework, drawing insights from the generic foresight process model.

5.9 Organisational Resource Weakness Identification and Mitigation Framework

Figure 5.3 illustrates the Organisational Resource Weakness Identification and Mitigation Framework, identifying the three levels of foresight and their role in resource weakness identification and mitigation. As shown in the illustration in Figure 5.3, the arrows indicate the role of the three levels of foresight. Strategic foresight supports the firm to understand its probable future weaknesses (future unknown weaknesses), strategic insights enable the firm to identify its current and emerging weaknesses (current unknown), and a firm's tactical foresight develops strategic options for managing its identified weaknesses. The research findings underscore the symbiotic relationship between strategic and tactical foresight and the firm's strategic insight. Strategic and tactical foresight, informed and guided by strategic insight, helps firms maintain a dynamic resource base that offers the best performance outcome in a given context.

Firms adopt the traditional foresight exercises to understand the emergence of future strategic weaknesses. They use various strategic foresight tools to aid their understanding of the future competitive landscape, its opportunities, and its impact on the firm's current resources. Foresight exercises predominantly focus on (but are not limited to) the strategic assets that the firm may need to build to be part of the future that it envisages. Hence, it helps in understanding the future dimensions of its current strategic assets. The aim is to detach from the firm's current ontological and epistemological beliefs; hence, strategic foresight is path-independent by design. However, based on this path-independent exercise, when firms identify the future state of a current resource as a weakness, firms' strategic insight and tactical foresight play a critical role in enabling them to manage their identified weaknesses.

The role of strategic insight is pivotal and twofold. Firstly, it empowers the firm to effectively manage strategic assets whose future state is perceived as a weakness. Building strategic

assets is time-consuming, and the firm must safeguard such resources while building on alternative strengths to sustain its competitive advantage. Secondly, it aids in identifying weaknesses that may arise due to the continuous change process within the task environment. Firms leverage their strategic insight to recognise the emergence of weaknesses within their current resource bundle, thereby maintaining their strategic course.

Firms' strategic insights are instrumental in recognising potential weaknesses due to the idiosyncratic nature of their resources and any weaknesses that may arise from their first principles due to their resource endowments and the industry in which they operate. In essence, firms rely on their firm-specific strategic insight to transform the unknown current and emerging weaknesses into known entities. Such insights and the firm's tactical foresight into its task environment enable it to make informed decisions.

Findings indicate that once a firm identifies a weakness, it explores its tactical options to mitigate the known weakness. This exploration is crucial as the firm tries to identify options for resource manipulation and understand how other resources within the bundle, its task and the macro environment may react to the manipulation and its impact on the outcome. This understanding is critical to identifying the optimal option for mitigating the weakness. It is essential to understand the implications of the interplay between the environment and the resources (now a weakness) and make tactical adjustments to mitigate them.

Tactical foresight differs from strategic foresight in two critical areas. Firstly, while foresight literature characterises the environment as inherently uncertain and voluntaristic, firms adopt an anti-deterministic approach when practising tactical foresight. They strive to bring about a desirable change through their actions, with foreseeable potential outcomes. Any errors in this process serve as valuable learning opportunities. As Schmidt (2015, p.554) notes, firms “form estimated beliefs” about the possibilities of their actions leading to resource reconfigurations. Secondly, foresight work is not typically tied to idiosyncratic resource endowments. However, a firm's tactical foresight is path-dependent, with its resources shaping possibilities. The role of managerial resource cognition, shaped through experience, is crucial in identifying strategic options through tactical foresight, underscoring the importance of the firm's strategic insight.

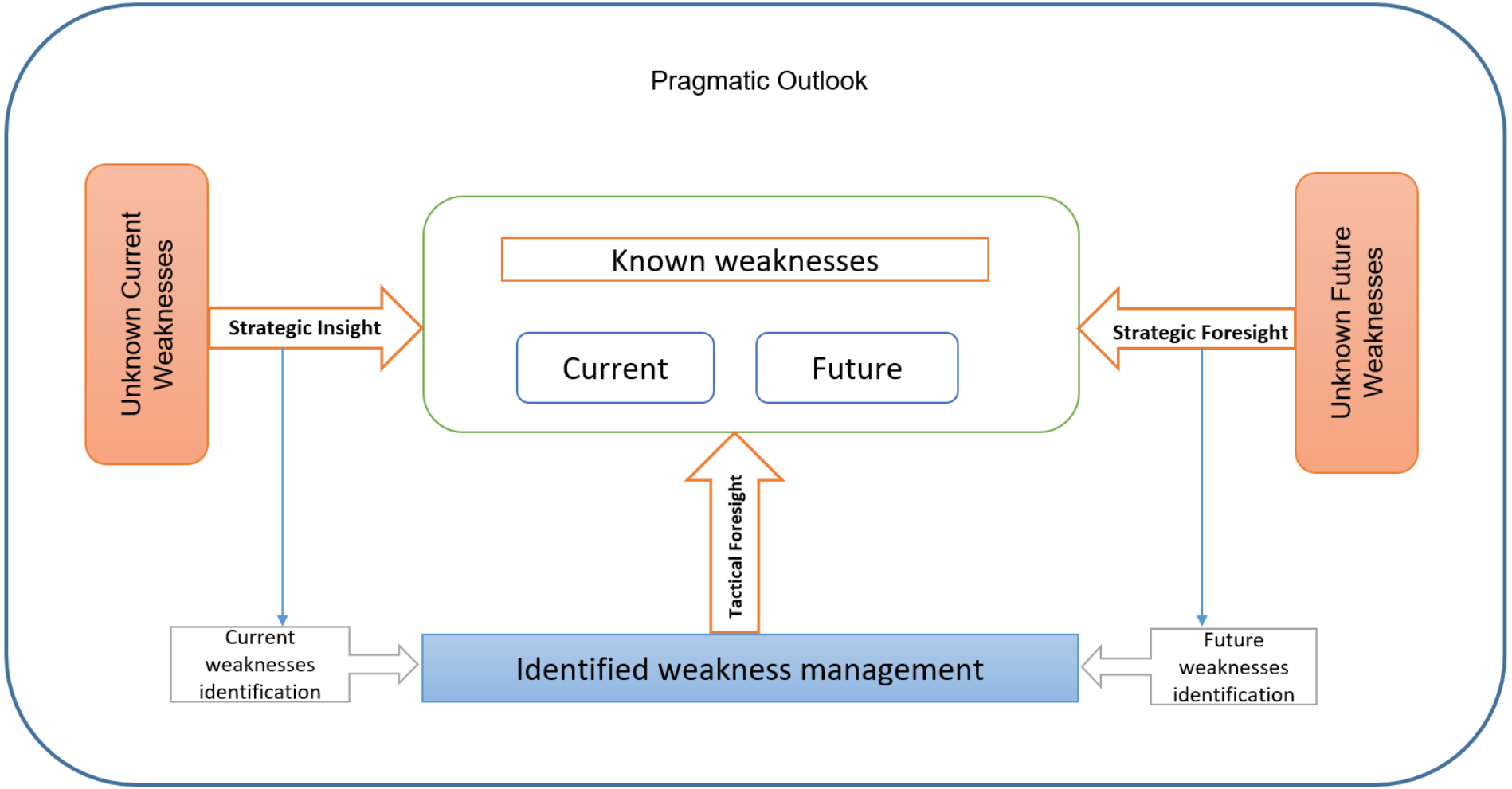

Figure 5.3: An Illustration of the Organisational Resource Weakness Identification and Mitigation Framework

While strategic foresight's critical role is to identify future strategic assets and weaknesses, strategic insight and tactical foresight play crucial roles in understanding how a firm could mitigate its weaknesses and protect its strategic assets. Hence, time horizons for tactical foresight are generally much shorter than those for strategic foresight. The following section expands on this notion.

Findings from the research highlight the broad time horizons of the foresight activities. Environmental dynamism and strategic insight are the critical factors that dictate the strategic foresight time frame. However, the factor that plays a crucial role in deciding the time horizon of tactical foresight is the balance between the utility value of the firm's strategic assets and the firm's expectation of the asset becoming a liability. Examples from the data set that underscore the findings include the automotive firm's consideration to extend and continue to draw value from its ICE capabilities for at least another decade. On the other hand, when the ISO 9000 consultancy firm faced a 'big problem' due to the dynamic environment, it decided to reconfigure its resource base, releasing some and building on some existing capabilities to become a food safety consultancy firm. Another example comes from the Public Housing firm. The Head of Organisational Development (Public Housing) narrated their rationale to sell their solar panel division at a loss of £3.8 million said,

> *"We kept it running and tried to make improvements to efficiencies. But essentially, we are a housing association. We did not have people with manufacturing expertise to do that effectively. So, we had to sell that at a significant loss ...due to that lack of understanding of the external environment and management of that risk."*

His statement highlights that the firm needed strategic insight to defend its investments in solar panel manufacturing in the face of uncertainty. However, their insight into their core business ('*we are a housing association*') supported their tactical foresight (*management of that risk*), and they sold the solar plant at a loss to save their core business.

Evidence from the literature that aligns with the above findings on time horizons comes from Vecchiato's (2012) study of large European multinational companies. Vecchiato highlights that in a complex yet non-dynamic environment, a firm's strategic foresight time horizons usually match or exceed the payback period of those firms' substantial capital investments. For example, Shell's time horizon for its strategic foresight is generally 15–20 years. In contrast, Vecchiato argues that Nokia and Philips faced uncertainty regarding the variety of dynamism in the early 2000s. As a result, it was appropriate for them to develop different

foresight systems with a shorter time horizon that aims to “function as a tool for identifying new business opportunities and driving organisational renewal” (Vecchiato, 2012. p. 441), with Nokia deciding not further to defend their investments in their mobile phone assets and release its mobile phone division.

5.10 Theoretical Contributions

This study stands out for its unique integration of the strategic foresight framework with the RBV literature for two reasons. Firstly, it responds to calls from RBV scholars, including West & DeCastro (2001), Powell (2001), Arend (2004), Armstrong & Shimizu (2007), Hughes & Morgan (2007), Lockett et al. (2008), Hughes et al. (2010) and Knott, (2015) to enhance our understanding of organisational resource weaknesses, an intriguing yet puzzling gap within the RBV literature. Secondly, the study also responds to the calls from Rohrbeck (2012), Vecchaito (2015), Gordon et al. (2020), and Fergnani (2020) for the integration of foresight within strategic management literature. In doing so, this study is one of the first to investigate the role of strategic foresight in addressing organisational resource weaknesses, providing a comprehensive understanding of the topic.

This study addresses the shortcomings of the RBV and foresight literature and introduces several theoretical and practical contributions. First, it offers a comprehensive empirical study on organisational resource weaknesses identification and management process, shedding new light on how firms identify and manage known and unknown weaknesses. Second, it presents an empirically validated enhanced generic foresight process framework that presents three levels of foresight. Third, it contributes to the literature by offering an empirically validated framework for identifying and managing organisational resource weaknesses. Additionally, though dynamic capabilities literature is not the focus of this study, it provides, in a broader sense, links to dynamic capabilities theory.

I summarise the specific contributions in the following sections.

- The study provides empirical support for the underlying assumption that foresight enables firms to make meaningful resource reconfigurations (Coase, 1937; Barney, 1986; Hamel & Prahalad, 1994; Ahuja et al., 2005; Rohrbeck & Schwarz, 2013; Vecchiato, 2015) that could provide a competitive advantage. The findings challenge the notion that since foresight lacks theoretical grounding (Oner, 2010; Hideg, 2007;

Marien, 2010; Piirainen & Gonzales, 2015; Wayland, 2015), its adoption is questionable (Gavetti & Menon, 2016) by offering empirical evidence to link the critical role of foresight in resource reconfiguration and, in particular, identifying resource weaknesses. In doing so, the findings from this study contribute to our knowledge of the foresight process and the research on resource reconfiguration by explaining the role foresight plays in identifying and mitigating resource weaknesses.

- Additionally, grounded in empirical evidence, the study's findings differ from the literature on foresight, arguing that three levels of foresight shed a comprehensive light on how firms identify resource weaknesses and generate strategic options for their mitigation. The first aspect of foresight identified is Strategic Foresight, which enables firms to identify future unknown weaknesses; the second is Strategic Insight, which enables firms to identify current or emerging weaknesses within their resource set. The third aspect is Tactical Foresight, which revolves around developing strategic options for managing (known) weaknesses.

<u>Strategic Foresight:</u>

Empirical evidence from this study indicates that the traditional strategic foresight process, as represented in the literature, is the primary tool firms use to understand the emergence of unknown weaknesses in the future, thereby reducing perceived strategic uncertainties (Elenkov, 1997) and facilitating strategic fit (Hambrick, 1981; Jennings & Lumpkin, 1992; Hamel & Prahalad, 1994; Slaughter, 1996) by guiding their current actions to gain a competitive advantage. The study's findings complement the insights of McMaster (1996), Cockburn et al. (2020), Gioia et al. (2002) and Vecchiato (2015) and align with the findings from Vecchiato (2012), Gavetti and Menon (2016), Schwarz et al. (2018) and Haarhaus and Liening (2020) that firms with a grasp of the future competitive structure and the impact of their current actions are likely to outperform their peers.

- Thus, the findings align with the traditional approach to foresight, which advocates a path-independent process that seeks to extend the current epistemological and ontological boundaries (Bourgeois, 1980; Slaughter, 1996; Wayland, 2015), identifying multiple futures and their implications for the resource base (Vuori, 2015; Sarpong & Maclean, 2016 and Scoblic, 2020).

- However, findings also indicate that under conditions of dynamic uncertainty where the future is cognitively distant, firms engage in selective strategic foresight work to develop cognitive formulations to guide the firm. These findings are in line with the insights of Dill (1958), Eisenhardt and Martin (2000), Gavetti and Levinthal (2000), Schmidt (2015), and Wayland (2015).

- Strategic insight and tactical foresight are powerful tools that enable firms to strategically plan the timing of removing future weaknesses. This involves gaining insights into unknown future weaknesses. The findings underscore that firms primarily undertake foresight exercises to anticipate future resource requirements and seize opportunities, aligning with the traditional approach to foresight in the literature. However, this study offers empirical evidence to complement the notion of Gioia et al. (2002) that foresight empowers firms to proactively identify potential weaknesses within their resource bundle, preparing them for future challenges by retrospectively looking at what needs to change.

Strategic Insight

Based on this study's findings, I emphasise the crucial role of strategic insight in enabling firms to identify and mitigate weaknesses within their resource set. The findings indicate that a firm's strategic insight derives from its resource cognition, understanding of its ecosystem, and collective and relevant experience.

- The study's findings emphasise the critical role of a firm's resource cognition in identifying current and emerging weaknesses. The evidence suggests that a firm's resource cognition limitations can make it challenging to identify potential weaknesses within the firm earlier. The findings of the study contribute to the resource cognition literature (Schilke et al., 2018; Schoemaker, 2018; Tripas & Gavetti, 2000; Augier & Teece, 2008; 2009; Danneels, 2010; Schmidt, 2015 and Leemann & Kanbach, 2023) by confirming the importance of resource cognition in managing inadequacies and for the firm to maintain a dynamic resource base that supports its competitive advantage.

- A key finding of this study is the importance of the managers' firm-specific experience in resource reconfiguration, especially in dynamic environments. Due to the path-dependent nature of the resource bundle, firm-specific resource cognition is crucial

for firms to anticipate and act in given contexts, underscoring the critical role of firm-specific managerial experience in managing uncertainty. These findings complement the insights from Shane (2000), Helfat and Lieberman (2002), Sturman (2003), Kor and Sundaramurthy (2009), Schmidt and Keil (2013), and Schmidt (2015), who highlight the critical role of idiosyncratic experience and path dependency in making superior judgment concerning the value-creating potential of the resource.

- The study's evidence highlights that firms must be able to monitor and understand the conditions under which First Principles' resource strengths could become a source of weakness, as liabilities in First Principles may lead to perpetual decline. This complements the insights of West and DeCastro (2001), Hughes et al. (2010), Breton-Miller and Miller (2013), Dierickx et al. (2013), and Wild and Lockett (2016).

- The study also underscores that a firm's cognition of the dynamic nature of the time dimension and context is critical in eliminating inadequacies. This aligns with the insights of Wernerfelt (1984), Dierickx and Cool (1989), and West and DeCastro (2001), who highlighted the time-dependence nature of developing resources and their decay.

- The study's findings underscore the significant influence of the industry on a firm's weaknesses. Understanding the industry's effects on resources and potential inadequacies is crucial for firms to avoid competitive disadvantage. This insight, which aligns with Bradley et al. (2018) and McGahan and Porter's (1997) findings, highlights the criticality of external factors influencing a competitive advantage.

- Findings indicate that organisational members closer to a resource have a higher cognition of that resource. Hence, firms have knowledge blocks about their resources. The findings of this study indicate that a critical challenge for firms is to have insights into the location of these blocks of knowledge and incorporate ways to integrate them seamlessly and meaningfully to guide their actions. Findings highlight the positive effects of foresight work as a collaborative social process to integrate knowledge blocks aligning with the insights of Durand (2009), Priem & Cycyota (2001), Rohrbeck et al. (2015), and Scoblic (2020). They could foster institution-wide change (Vuori, 2015).

- The critical role of a firm's strategic insight in minimising weaknesses complements and strengthens the findings of Rohrbeck and Schwarz (2013), Heger and Boman (2015), Vechatio (2015), and Haarhaus and Liening (2020) on the role of foresight in enhancing dynamic capabilities, particularly Danneels (2010), who found "resource cognition as a missing element in dynamic capability theory."

Tactical Foresight

The third aspect is 'Tactical Foresight' and involves managing identified (known) weaknesses. Findings show that when firms identify a weakness within their resource bundle (current or future), based on the understanding of the situation, they decide how best to mitigate an identified weakness. Without enough information, strategic managers must use their insight and judgement and the available information to identify superior response tactics to activate action. Accordingly, while strategic foresight aims to understand unknown future weaknesses, firms need tactical foresight that involves the identification of the various response tactics and managerial judgement to analyse and navigate potential known current and future weaknesses.

- Based on the findings, as Courtney (2001) proposes, firms must analyse uncertain environments dynamically to ascertain strategically relevant information and provide the best possible strategic options to incorporate into their decision-making processes. Firms should be able to discern and factor in the knowable, unknown, and unknowable to navigate the uncertainty of dynamic nature successfully. The pandemic in 2020/21 allowed this study to collect critical evidence supporting this notion.

- Evidence indicates that firms can use ordinary resources to defend their strategic assets by engaging in tactical resource manoeuvres, underscoring the critical role of ordinary resources in supporting strategic assets and strengthening their dimensions. These findings align with the notion of Barney (1995) and Knott (2003) on the value potential of ordinary resources in indirectly helping the firm achieve a sustainable competitive advantage and survival. This study’s evidence supplements the findings that ordinary resources can enhance firm performance (Cockburn et al., 2000; Shamsie et al., 2004; Branzie & Thornhill, 2006; Warnier et al., 2013), and adds to the literature that firms can use ordinary resources tactically to support and enhance

the strength dimension of its strategic assets and can address weaknesses within the resource bundle.

- A firm's response tactics identify various strategic options to mitigate weaknesses. This study's findings confirm that firms use their insight and foresight to decide on the best course of action. While Schmidt (2015) and Tapinos & Pyper (2017) highlight the importance of managerial judgments for resource acquisition and deployment under conditions of uncertainty, empirical evidence of this research supplements this notion by arguing that managerial judgments on resource weaknesses are critical for strategic success.

- Another critical addition to the literature is the time dimension firms adopt in their tactical management of emerging weaknesses. This study's findings show that a firm's tactical response to a known weakness depends on its judgement of the longevity of the asset in offering a competitive advantage or performance improvements. These findings support Karadag and Poppo's (2020, p.1535) notion that "the timing and extent of which (resource management) should be aligned with the temporal properties of the strategic resources."

The findings also offer an empirically validated generic foresight process framework for identifying and mitigating organisational weaknesses.

- The generic foresight process framework identifies three levels of foresight. It shows that firms use different approaches to identify current, emerging, and future unknown weaknesses. The first aspect of foresight is the traditional strategic foresight work, aligning with the framework presented by Voros (2003). However, adding strategic insight and tactical foresight is a novel approach grounded in this research's empirical findings.

- The findings indicate that the firms must collect relevant information on an ongoing basis to gather strategic intelligence about the task environment and macro environment to keep their resource base supple and mitigate known weaknesses. Strategic intelligence, derived from a firm's strategic foresight and insight, is pivotal in generating tactical options. This process of tactical foresight aims to equip the firm with a range of strategic options. The information that firms gather for strategic insight

and tactical foresight is linked to their idiosyncratic resources, and judgments on the strategic options are usually path-dependent. These findings markedly differ from the traditional foresight work that aims to explore beyond the current epistemological and ontological boundaries and, hence, by nature, path independent.

- The findings show that firms take a pragmatic yet deterministic approach when anticipating future weaknesses (the unknown) and focus on being change-ready to take advantage of new opportunities and minimise threats (weaknesses), which differs from Godet's (2008) notion that firms should adopt an optimistic and anti-deterministic attitude and identify and work towards desirable futures. While the data does not reveal much about this deviation, the current pandemic, after which most of the data was collected, may have influenced managerial thinking.

- On the other hand, when the unknown weaknesses become 'known', firms adopt an optimistic and anti-deterministic attitude and work towards desirable futures. The findings align with Godet (2008) and, in particular, with Bourgeois (1984), who suggests a dialectic between deterministic and anti-deterministic approaches to strategy.

5.11 Chapter Summary

This chapter presents the findings concerning the research questions and the extent to which the study's research questions have been answered. It also provides a detailed discussion of the 'Generic Foresight Process Framework' and the 'Organisational Resource Weakness Identification and Mitigation Framework', which are the study's outcomes. The chapter also presents the study's theoretical contributions.

The next Chapter (Chapter 6) will summarise the research and present the implications for practice based on this study's findings, limitations, and suggestions for further research.

Chapter 6: Conclusion and Final Remarks

6.1 Summary of the Thesis

The study adopted the RBV and the Strategic Foresight perspective to explore to what extent strategic foresight enables firms to identify and mitigate resource weaknesses. The study's theoretical framework was developed based on the review of the RBV, dynamic capabilities, environmental uncertainty and strategic foresight literature in Chapter 2. In Chapter 3, the study's philosophical position and the rationale for the chosen methodology present a guide for the empirical stage of the study. The findings presented in Chapter 4 and the follow-up discussion in Chapter 5 offer in-depth insight and a novel understanding of the role of strategic foresight, strategic insight and tactical foresight in addressing organisational resource weaknesses. The Generic Foresight Process Framework is developed in Chapter 5. As an extension, the Resource Weaknesses Identification and Mitigation framework and these frameworks enhance our theoretical understanding of how firms identify and manage weaknesses, including under conditions of deep uncertainty.

6.2 Practical Implications

The starting point for being prepared for the future comes from strategic insight into current or emerging weaknesses within the firm's existing strategic resource set. Establishing what strength and advantage a firm holds regarding resources is central to a resource-based approach to strategic management. However, a deeper evaluation of current weaknesses and understanding how existing strengths and weaknesses hamstring the firm is insightful and necessary for understanding future preparedness and where future weaknesses may arise. Strategic managers must address these weaknesses through tactical foresight and avoid resting on laurels if multiple sources of resource strength exist. It takes but one environmental event or calamity to put firms in positions of weakness. From this, strategic foresight comes to the fore in addressing the unknown in the future and in creating an understanding of future resource weaknesses or future resource needs so that the firm can be prepared structurally and in terms of resource endowments to succeed.

The explicit danger in not embedding and relying on foresight activities to understand and address possible current and future resource weaknesses comes in the form of (a) excessive strategic adherence to using existing resources and capabilities long beyond their actual competitive usefulness (e.g., Covin et al. 1997; Hughes et al., 2010); (b) hamstringing

the potential for the firm to pivot strategically by allowing weaknesses to become embedded, such that (c) the firm is trapped in a downward spiral towards failure (Hambrick & D'Aveni, 1988).

Positions of resource weakness are, by their very nature, inevitable for most, if not all, firms. Natural environmental evolution and changes brought on by competitor behaviour, customer trends, economic conditions, and the like demand that strategic managers do not allow their resource and capability base to become strategic liabilities (Arend, 2004) or core rigidities (Leonard-Barton, 1992). To enhance survivability, firms require foresight and strategic managers to be pragmatic. Endless information searches, analysis and attempts to predefine all possible futures are not the way forward, even with the most extraordinary foresight capabilities. Instead, foresight, from strategic insight to tactical foresight to future-looking strategic foresight, will generate insights and strategic directions to mitigate resource weaknesses and the potential for liabilities/rigidities to arise. Attempts to predict everything are futile; such is the nature of uncertainty, and resilience comes from readiness for change. Strategic managers must be pragmatic and hold a practical outlook to avoid potential rigidity leading to deeply embedding resource weaknesses in the firm. By being pragmatic about the need for resource fluidity, strategic managers can build change readiness into the firm (e.g., Hughes et al. 2020) to better navigate whatever possible future it faces.

Resource fluidity reflects a firm's ability to redeploy resources and reconfigure operations by managing resource capital and capabilities (Doz & Kosonen, 2010). To ensure change readiness, firms must avoid the capability trap (Repenning & Sterman, 2002) so that strategic resources, capabilities, routines, and practices can adapt to changing demands (Hughes et al., 2020). As Hughes et al. (2020) argue, without this form of resource fluidity for reconfiguration, and in circumstances where change is necessary, resources become weaknesses, and capabilities can quickly become obsolete because of the capability trap, whereby a firm is competent in a routine that is no longer valuable. Indeed, and similar to theorising around strategic liabilities and core rigidities by Arend (2004) and Leonard-Barton (1992) respectively, the capability trap helps explain why strategic managers often fail to engage in activities that are in their long-term interest (Repenning & Sterman, 2002).

The above behaviours lead to organisational resilience to future problems, crises, or unexpected events. Lengnick-Hall and colleagues suggest that "resilient organisations thrive despite experiencing surprising, uncertain, often adverse, and usually unstable" (2011, p.

243). I propose that the findings reveal resilience comes from understanding and addressing resource weaknesses through applying foresight in strategic management, holding a pragmatic outlook, and ultimately, this "organisational resilience leads to organisational evolvability as its outcome" (Kantur & Iseri-Say, 2012, p. 762). As such, foresight is critical for a firm's future and must be a strategic imperative for managers to employ.

6.3 Research Limitations

Though a comprehensive approach is taken to research resource weaknesses and strategic foresight in this work, it is acknowledged that limitations exist that require appreciation:

1. This study is, ultimately, exploratory in nature, and while empirically anchored in qualitative research, the findings still require confirmation through additional research, be it through cross-sectional surveys or longitudinal-based designs.

2. All interviewees were highly experienced and tenured in their respective industries, which gives confidence in their responses' accuracy, validity and reliability, but all were independent. Other managers do not strictly verify their responses and insights within a given firm. Though secondary data sources are used in some instances, additional triangulation is preferable.

3. Excessive generalisability is cautioned against without further investigating resource weaknesses and foresight in additional contexts.

4. Strategy-making requires a choice about strategic posture. In essence, strategic posture defines—and provides clarity on—the intent of a strategy relative to the current and future state of an industry and is then complemented by choices on an accompanying portfolio of strategic actions (Courtney et al., 1997). In practice, the choice of strategic posture and an accompanying portfolio of actions is not straightforward, as such decisions depend highly on the level of uncertainty facing a firm (Courtney et al., 1997). I do not delve into the strategic posture in this work beyond assuming the starting point of strategy-making, and thus, posture is the firm's resource base as per the principles of the Resource-Based View. It is unclear what role or impact foresight would have in, say, an outside-in or market-oriented firm. The marketing literature around market orientation would lead us to believe that foresight would be critical. However, this has not been studied, and I cannot directly speculate

on or speak about it. As such, it is more challenging to formulate an opinion on the value of foresight in such strategically oriented firms. This opens a path, however, to some welcome future investigations to further determine the value of foresight.

6.4 Further Research

While this research and its findings have revealed nuances around what constitutes foresight and the types of foresight in play within firms, additional directions for research stem in part from limitations and the study's findings. I will now reflect on the latter.

First, while the importance of foresight is established in the results, what are the strategic imperative or building blocks that articulate the internal conditions for developing foresight and embedding strategic foresight activities within the firm and strategic management practice? Though some insights may be gleaned from the literature around strategic decision-making and uncertainty (e.g., Courtney et al., 1997; Courtney et al., 2013) or on the intersection of strategy and future (e.g., Evered 1983; Hamel & Prahalad, 1994; Ahuja et al., 2005), it remains that the underpinning building blocks of strategic foresight are not established. This gap in scholarly knowledge is a significant practitioner problem, as Andrews (1970, p.170) advances: "The highest function of the chief executive is the management of the future-oriented purposeful development of the enterprise".

Second, as Courtney et al. (1997: 4) note, "[u]nder uncertainty, traditional approaches to strategic planning can be downright dangerous". Accordingly, how might strategic foresight be expanded and embedded into the strategy-making process beyond understanding and addressing resource weaknesses? What is the role of strategic foresight in contemporary strategy-making? In examining these questions, it is possible to expand on the tool kit of activities available to strategic managers for more effective strategic decision-making (e.g., Courtney et al. 2013).

Third, building forward from the prior two future research directions and thinking back to the central principles of strategic management, how might strategic foresight benefit strategic fit and long-term alignment between the firm and its environment, such that strategy adherence and rigidity are mitigated? Is it enough for strategic foresight to just be focused on resource-base? What about firm structure? Processes? Organisational culture? As Hughes et al. (2020, p. 489) note: "[s]trategies are heavily aligned and interdependent with, as well as

being a product of, the organisational climate from where they are derived". With this in mind, research focused on developing a better understanding of the interplay between foresight and internal organisational climate (such as structure, processes and culture) will potentially unlock more significant insights into how strategic foresight can be genuinely embedded in strategy-making, benefit the firm in maintaining strategic fit, and ultimately play a role in enabling the firm to thrive into the future.

6.5 Final Conclusions

This study brought together literature around the Resource-Based View and foresight to examine and understand the nature of resource weaknesses and to address to what extent strategic foresight enables firms to identify and mitigate weaknesses within their resource bundle. By contributing to Resource-Based theory and theorising around foresight, insights are generated that shed light on much-needed nuance in our understanding of foresight and its role in resource weaknesses.

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Appendix 1 Data Reduction Exercise

Appendix 2 Ethics Forms

Participant Information Sheet (15/04/19)

Project title: An Examination of the Relationship Between Organisational Foresight and Organisational Resource Weaknesses

Researcher: Mohan Namasivayam
Department: Durham University Business School
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Supervisor name: Prof Paul Hughes
Supervisor contact details: paul.hughes@durham.ac.uk

You are invited to take part in a study that I am conducting as part of my PhD at Durham University.

This study has received ethical approval from Durham University Business School ethics committee of Durham University. The researcher is a Senior Lecturer at the University of Sunderland and has over ten years of industry experience and over ten years of teaching experience. The researcher has worked in several countries including India, Sri Lanka, Malaysia, France, and Zimbabwe.

The lead supervisor is Paul Hughes, Professor of Strategic Management at the Castle Business School, De Montfort University (previously at the Durham University Business School). Prof Hughes' research is published widely in internationally recognised outlets such as Journal of Product Innovation Management, Journal of World Business, and Strategic Entrepreneurship Journal, British Journal of Management, Public Administration, Journal of International Marketing, Industrial Marketing Management, International Marketing Review, and Journal of Business Research. In 2013, a research paper by Paul and his colleagues, Dr Yiannis Kouropalatis and Professor Robert Morgan, on pursuing 'flexible commitment' won the Outstanding Paper Award for 2012 in the European Journal of Marketing (http://www.emeraldinsight.com/doi/full/10.1108/EJM-02-2014-001).

Before you decide whether to agree to take part it is important for you to understand the purpose of the research and what is involved as a participant. Please read the following information carefully. Please get in contact if there is anything that is not clear or if you would like more information.

The rights and responsibilities of anyone taking part in Durham University research are set out in our 'Participants Charter':
https://www.dur.ac.uk/research.innovation/governance/ethics/considerations/people/charter/

What is the purpose of the study?
The aim of this study is to...

- Understand the various types/ categories of weaknesses that a firm could have based on their impact on a firm's competitive advantage and performance. This is the first stage of the study, and your participation is limited to the first stage. Following this, the study will examine if and how firms use their strategic foresight to minimise the accumulation of various types of weaknesses.
- This research is expected to be completed by Sep 2021.

Why have I been invited to take part?
You have been invited because of your experience and the wealth of information that you may be able to provide regarding firm weaknesses that this research is exploring. ...

Do I have to take part?
Your participation is voluntary, and you do not have to agree to take part. If you do agree to take part, you can withdraw at any time, without giving a reason. [Your rights in relation to withdrawing any data that is identifiable to you are explained in the accompanying Privacy Notice].

What will happen to me if I take part?
If you agree to take part in the study, you will...

- Take part in an interview conducted by the researcher. The interview could take place at a mutually agreed venue. The researcher will ask a series of structured and semi structured questions regarding your understating of organisational foresight and how firms use foresight to minimise current and future threats. It is expected that the interview will last around 60 minutes.
- While the researcher can travel to the agreed place of interview, organise tea/coffee during the interview, unfortunately there will be no reimbursement or incentives for the participant.

Are there any potential risks involved?

- There are no potential risks or discomforts involved. However, of you are not comfortable with the questions, you may skip the question.
- You may take a comfort break during the interview.
- If you are not happy with the interview room/ environment, you can ask for the interview to be moved to a different environment or you may even cancel the interview.
- There are no financial incentives or other remuneration that will be paid to the participant.
- The findings of the research will be shared with all the participants once the thesis has been successfully defended.

Will my data be kept confidential?

- All personal data will be held securely and strictly confidential to the researcher.
- The interview will be recorded and stored on an encrypted device until it has been transcribed by the researcher. No-one else will have access to the recording, and it will be erased once the transcript has been completed.
- You will be allocated an anonymous number in the transcript which will not be connected to your name or identity. Names of firms (if any) that you may identify during the interview will also be anonymised and made unidentifiable.
- If the data is published it will be entirely anonymous and will not be identifiable as yours.
- Information that identifies you to the transcript and your signed consent form will be kept separately to the anonymised transcript. This will be destroyed within five years or within a month of the successful defence of the thesis (whichever is earlier).

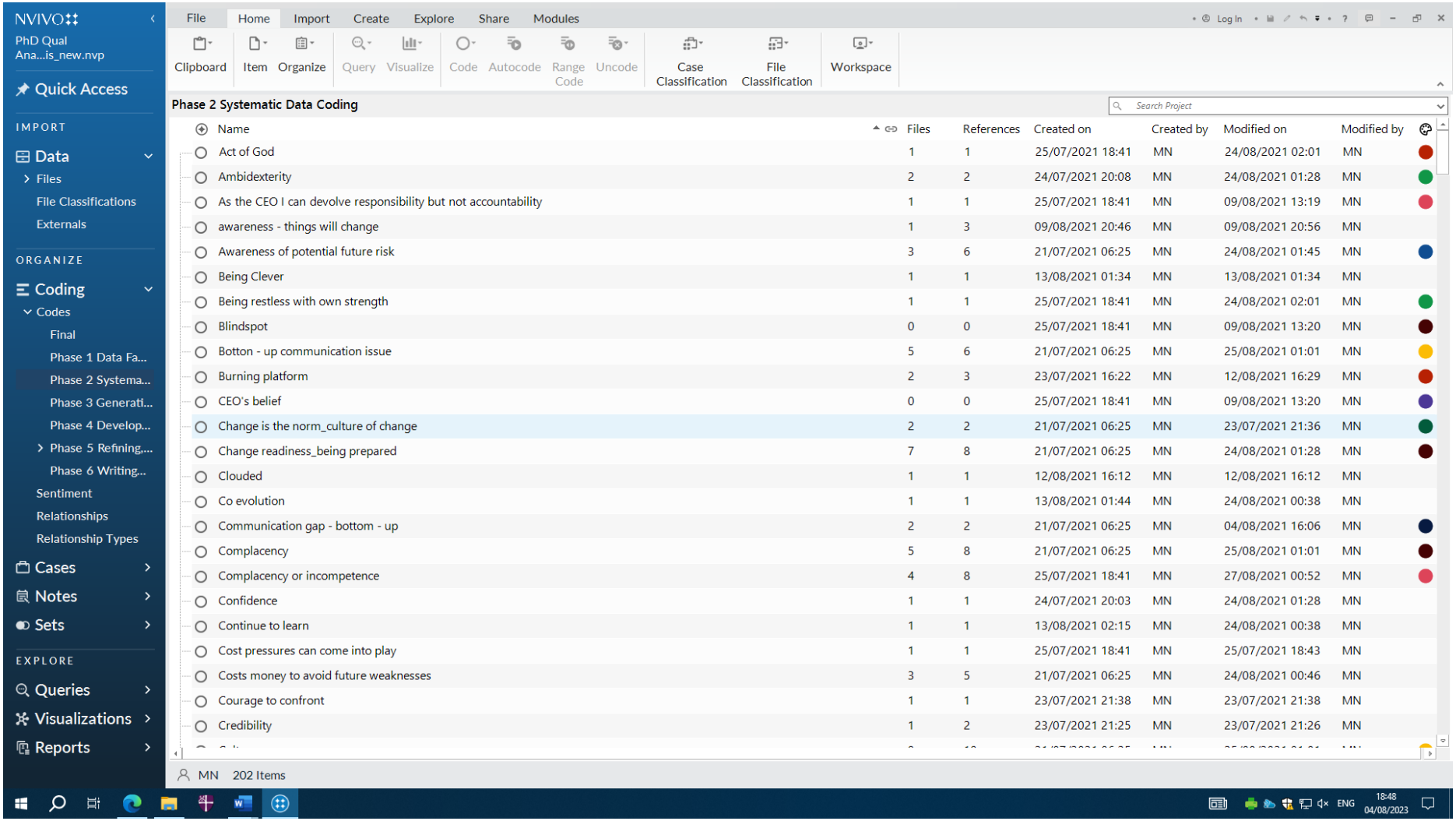
What will happen to the results of the project?
Durham University is committed to sharing the results of its world-class research for public benefit. As part of this commitment the University has established an online repository for all Durham University Higher Degree theses which provides access to the full text of freely available theses. The study in which you are invited to participate will be written up as a thesis. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The thesis will be published open access after an initial embargo of one year. An application for one year embargo will be made prior to online submission of the thesis in accordance with the University procedures.

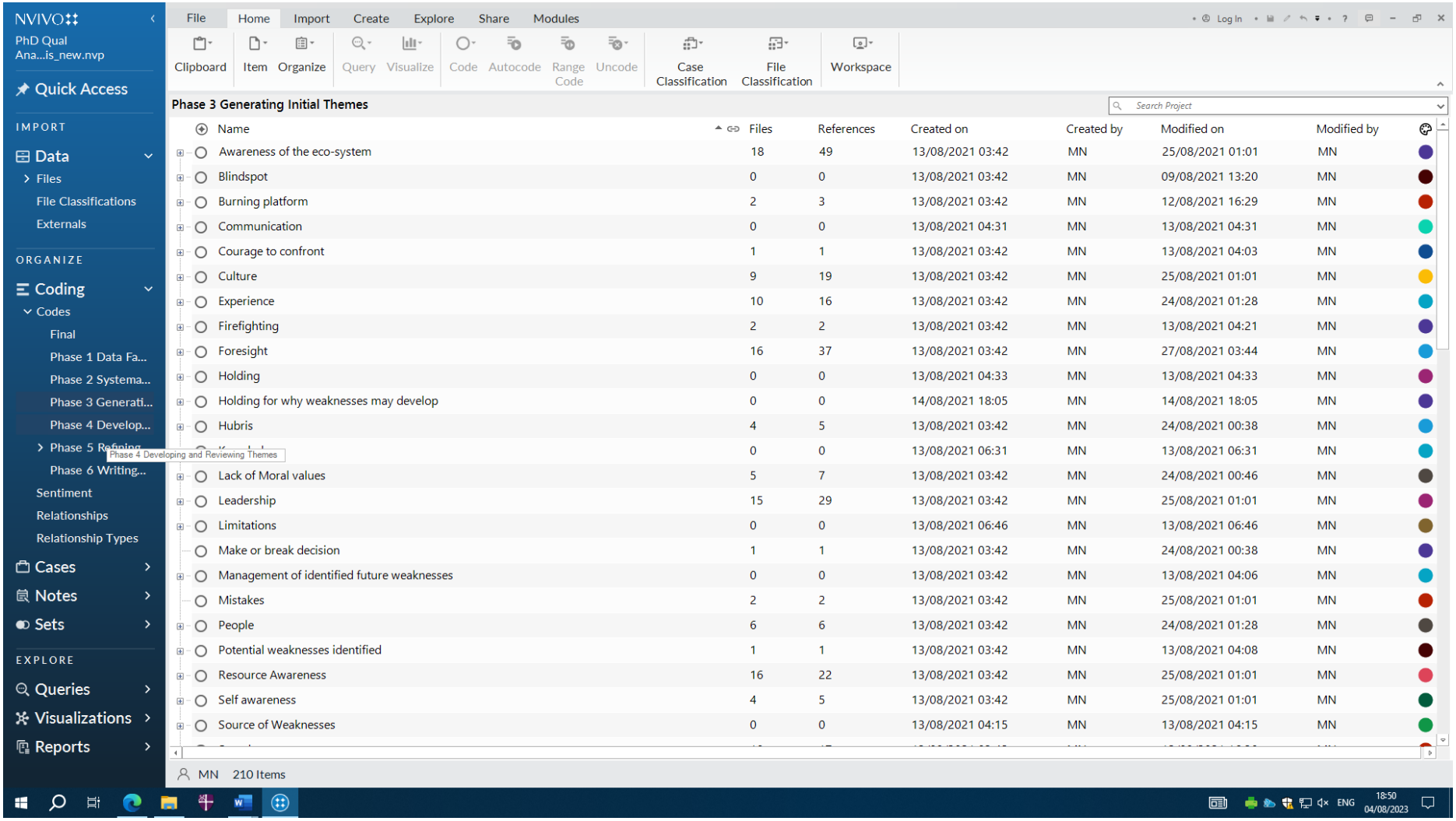
Who do I contact if I have any questions or concerns about this study?
If you have any further questions or concerns about this study, please speak to the researcher or their supervisor. If you remain unhappy or wish to make a formal complaint, please submit a complaint via the University's Complaints Process.

Thank you for reading this information and considering taking part in this study.

Template version 2: August 2018

Appendix 3 NVivo Codes




NVIVO
PhD Qual Ana...is_new.nvp
Quick Access
IMPORT
Data
Files
File Classifications
Externals
ORGANIZE
Coding
Codes
Final
Phase 1 Data Fa...
Phase 2 Systema...
Phase 3 Generati...
Phase 4 Develop...
Phase 5 Refining
Phase 6 Writing...
Phase 4 Developing and Reviewing Themes
Sentiment
Relationships
Relationship Types
Cases
Notes
Sets
EXPLORE
Queries
Visualizations
Reports
File
Home
Import
Create
Explore
Share
Modules
Log In
Clipboard
Item
Organize
Query
Visualize
Code
Autocode
Range Code
Uncode
Case Classification
File Classification
Workspace
Phase 3 Generating Initial Themes
Search Project
Name
Files
References
Created on
Created by
Modified on
Modified by
Awareness of the eco-system 18 49 13/08/2021 03:42 MN 25/08/2021 01:01 MN
Blindspot 0 0 13/08/2021 03:42 MN 09/08/2021 13:20 MN
Burning platform 2 3 13/08/2021 03:42 MN 12/08/2021 16:29 MN
Communication 0 0 13/08/2021 04:31 MN 13/08/2021 04:31 MN
Courage to confront 1 1 13/08/2021 03:42 MN 13/08/2021 04:03 MN
Culture 9 19 13/08/2021 03:42 MN 25/08/2021 01:01 MN
Experience 10 16 13/08/2021 03:42 MN 24/08/2021 01:28 MN
Firefighting 2 2 13/08/2021 03:42 MN 13/08/2021 04:21 MN
Foresight 16 37 13/08/2021 03:42 MN 27/08/2021 03:44 MN
Holding 0 0 13/08/2021 04:33 MN 13/08/2021 04:33 MN
Holding for why weaknesses may develop 0 0 14/08/2021 18:05 MN 14/08/2021 18:05 MN
Hubris 4 5 13/08/2021 03:42 MN 24/08/2021 00:38 MN
0 0 13/08/2021 06:31 MN 13/08/2021 06:31 MN
Lack of Moral values 5 7 13/08/2021 03:42 MN 24/08/2021 00:46 MN
Leadership 15 29 13/08/2021 03:42 MN 25/08/2021 01:01 MN
Limitations 0 0 13/08/2021 06:46 MN 13/08/2021 06:46 MN
Make or break decision 1 1 13/08/2021 03:42 MN 24/08/2021 00:38 MN
Management of identified future weaknesses 0 0 13/08/2021 03:42 MN 13/08/2021 04:06 MN
Mistakes 2 2 13/08/2021 03:42 MN 25/08/2021 01:01 MN
People 6 6 13/08/2021 03:42 MN 24/08/2021 01:28 MN
Potential weaknesses identified 1 1 13/08/2021 03:42 MN 13/08/2021 04:08 MN
Resource Awareness 16 22 13/08/2021 03:42 MN 25/08/2021 01:01 MN
Self awareness 4 5 13/08/2021 03:42 MN 25/08/2021 01:01 MN
Source of Weaknesses 0 0 13/08/2021 04:15 MN 13/08/2021 04:15 MN
MN 210 Items
ENG
18:50
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Appendix 4: A Generic Foresight Process Framework

Figure 1 — The generic foresight process framework, in broad outline form

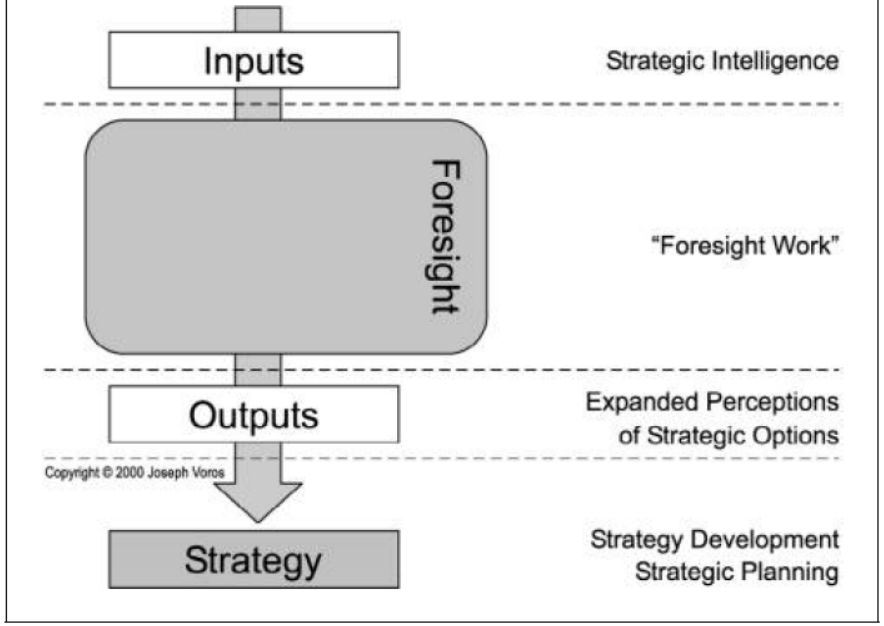
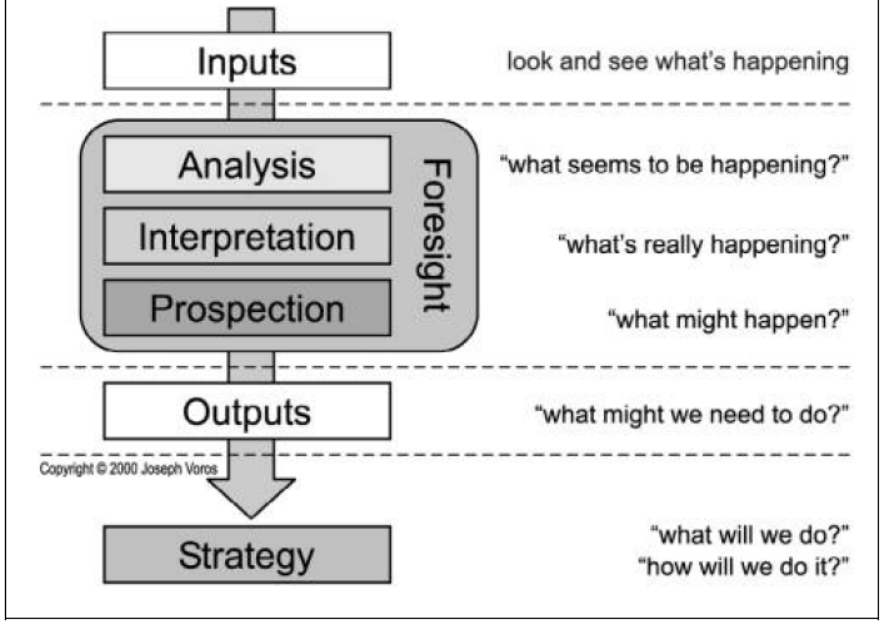


Figure 2 — The foresight framework, in "question" form



Source: Voros (2003)