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A Leadership perspective to enabling organisational ambidexterity

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ABSTRACT

Innovation implies change which causes disruption. Ambidexterity is required to balance disruption and change with the additional prerequisite of stability to enhance efficiency, and it remains a challenge. However, each of these elements require specific processes and cultures. As such, organisations structure either through spatial or temporal separation. This is to ensure focus on both explore, required for innovation, and exploit that is needed for efficiency. What is not clear from literature is how leaders manage the ensuing changes, required within the organisational structure, to enable ambidexterity.

This research sought to shed new light on how leaders manage the structural changes required within an organisation to support ambidexterity and as such fits into the inductive research approach. A qualitative, exploratory study through semi-structured interviews was completed to enhance the understanding of this understudied phenomenon.

The research results build on the current understanding of ambidexterity, different operating models, integration mechanisms and possible organisational structures to enable both explore and exploit. A model was conceptualised, based on the research findings, that included leadership capabilities required to deal with both core business and new venture processes and structures as well as the integration of these disparate elements.

KEY WORDS

Ambidextrous organisation; leadership capabilities; organisational structure.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Liezl Bell

Date

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1. CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1 Research problem

Change is ubiquitous to the contemporary firm due to the influx of new technologies, globalisation and the omnipresence of competition on the organisational level. Yet, rather than facilitate change, many organisations continue to operate with structures, processes and cultures that hinder progress for the sake of efficiency and stability (Leavy, 2014; Lyons, Jordan, Faas, & Swindler, 2011).

Due to this general continuous rate of change, the extant leader could perceive that any or all organisations require a high internal rate of change. Yet, context matters. In a highly regulated environment, where incremental innovation sustains profitability, an organisation can remain competitive through industry analysis and strategic positioning and realignment as the market changes (Jackson & Leung, 2018), rather than continuously developing new products. In contrast, where value chain specialisation and market disruptions are reality firms are required to be more explorative, continuously developing new and customer-centric products to stay ahead of the competition (Jackson & Leung, 2018; Leavy, 2014).

To remain competitive, an organisation must thus ensure that its internal rate of change is quicker than that of the competitive environment (Uhl-Bien & Arena, 2018). The competitive environment is in constant flux due to a myriad of human activities, globalisation and changing technology, resources and services (Patora-Wysocka, 2017; Roh, Turkulainen, Whipple, & Swink, 2017). However, frequent change within an organisation can hamper improvement and negatively influence efficiency. Stability and routine are required to maintain the efficiency and quality management systems required for processes such as manufacturing (Kollenscher, Eden, Ronen, & Farjoun, 2017; Kotter, 1995; Leavy, 2014). It is therefore crucial that the organisation is able to balance the requirement for innovation and efficiency as necessitated within the specific context of the organisation. However, the organisational requirements to enable innovation and the requirements to enable efficiency within an organisation is remarkably different.

Innovation and efficiency each require a specific culture, organisational structure, leadership style and organisational processes (Uhl-Bien & Arena, 2018). To remain relevant, organisations must adapt these systems to ensure internal stability but external agility. These elements must effectively be balanced to maintain efficiency and exceed the rate of change of the relevant industry (Leavy, 2014). The organisation can achieve this balance by achieving ambidexterity. Ambidexterity must play out on each level within the organisation as ambidexterity achieved within each level of the organisation is positively correlated with organisational profitability (Doz & Kosonen, 2010; Havermans, Den Hartog, Keegan, & Uhl-Bien, 2015; Horney, Pasmore, & O'Shea, 2010; Leavy, 2014). As such, the concept of ambidexterity can be used as a vehicle to understand the existence of the paradox of efficiency and innovation and how this paradox can be managed to ensure a profitable, sustainable organisation. However, it is challenging to hold such a paradox within one person due to the diverse requirements for innovation and efficiency. Ambidexterity is defined in the next section to explain this conundrum in more detail.

Ambidexterity as a concept is defined within literature as the ability to develop new products while still exploiting the existing market. The ability to build on current knowledge while developing new knowledge and capabilities. Organisational ambidexterity is not conceptualised as an extreme on the exploitation versus exploration continuum, but rather, an organisation should determine the optimal point on that scale. Literature proposes that the ambidextrous organisation can effectively manage these competing demands (Uhl-Bien & Arena, 2018). Ambidexterity can also be defined in terms of a paradox; "hosting multiple, internally inconsistent architectures, competencies and cultures", with the capability to be both efficient and consistent as well as innovative, with the ability to be flexible and experiment (Tushman & O'Reilly, 2011). Organisational theory defines ambidexterity as the dual ability of the organisation to manage the current business demands as well as to adapt to the changing environment (Havermans et al., 2015). It has been proven within literature that this balance between efficiency and innovation is required to ensure a sustainable organisation however, in practice, the balance is difficult to maintain.

From a paradoxical standpoint, literature is clear that ambidexterity is required to solve for the explore/exploit tension. The elements of ambidexterity are fundamentally different, requiring different change logic and processes. Therefore, tension and paradox are at the core of this concept. This paradox symbolises an exceedingly challenging tension with opposing elements (Lewis, Andriopoulos, & Smith, 2014). Leaders must be able to view and manage the opposing elements as interrelated rather than in silos, to solve for this tension. In such a situation, the goal is to identify solutions where synergy can be created between the contradictory elements of explore and exploit. Such a solution refers to a both/and solution. It is exceedingly difficult for such a paradox to be held within one person or department as it requires an identity change, thus being able to adjust between the elements. In addition to the identity change, the elements also require particular and exceedingly different processes and cultures. To solve for this problem and ensure that the organisation is able to focus on both explore and exploit ambidextrous organisations utilise either spatial or temporal structural separation to hold either element of exploring or exploiting (Havermans et al., 2015; Lewis et al., 2014).

Spatial separation is achieved by creating disparate divisions, functions or teams (Chen & Kannan-Narasimhan, 2015; Uhl-Bien & Arena, 2018). There are thus distinct functions, separated by physical and structural spaces, each either dedicated to efficiency and focussing on the core business or dedicated and focussing on innovation and new venture (Havermans et al., 2015; Leavy 2014). Temporal separation utilises the same team where the team divides its time into innovate and exploit (Havermans et al., 2015; Lewis et al., 2014). This separation in and of itself creates tensions which must be managed by the extant leader (Tushman & Euchner, 2015; Uhl-Bien & Arena, 2018).

A literature review was conducted to understand what body of knowledge exists, indicating how the leader can deal with the changes, and resulting tensions, required to support ambidexterity. Literature outlines specific considerations, such as resource allocation as well as the effect on strategy execution and collective learning, when using a specific model such as spatial separation (Khanagha, Volberda, & Oshri, 2014). Evidence is also found within literature on how organisations practically address the reintegration of the two separated elements and resulting capabilities (Chen & Kannan-Narasimhan, 2015; Uhl-Bien & Arena, 2018). However, what is not

clear from literature is how leaders specifically manage the changes and flux created within the organisational structures to support the required ambidexterity (Salas Vallina, Moreno-Luzon, & Ferrer-Franco, 2019). It is essential to understand this gap in literature, especially from a leadership perspective because ambidexterity plays out on all levels of the organisation.

The CEO is responsible for ensuring a strategy that reflects the ambidexterity required for the organisation to increase profitability and market share. This strategy must be rolled out and communicated to all employees. Employees on the floor, directly involved with clients, must be capable of both efficiency and adapting for specific customer needs (Luu, Rowley, & Dinh, 2018). It is the responsibility of these employees to communicate changes in client needs as well as strategic blindspots to senior management. Middle management is then responsible for translating strategy and communicating it to the lower levels of the organisation. Middle management is also responsible for communicating the required changes and possible opportunity upwards (Kollenscher et al., 2017). It is vital for leaders to understand how to enact and enable ambidexterity practically. Therefore, this study aims to understand how leaders manage the change and flux created within organisational structures to support ambidexterity.

Ambidextrous leadership, as well as ambidexterity on the individual level, have been positively correlated with organisational profitability (Doz & Kosonen, 2010; Havermans, Den Hartog, Keegan, & Uhl-Bien, 2015; Horney, Pasmore, & O'Shea, 2010; Leavy, 2014). It is then clear that the contemporary leader must be able to understand and develop the change capabilities required to lead an ambidextrous organisation in the current change era. The literature review outlines the requirements from leaders to create organisational ambidexterity. This includes the requirement for vision statements and charismatic or transformational leaders as well as the creation of specific formal structures (Lewis et al., 2014; Zacher & Wilden, 2014). There is also reference to the requirement for leaders to create supportive contexts where each individual is given the space to demonstrate specific capabilities, as required for their unique context within the business unit or division. This translates into ambidextrous individuals on each level within the organisation (Luu et al., 2018; Uhl-Bien & Arena, 2018; Zacher & Wilden, 2014).

However, what remains unclear is how the leaders themselves manage the changes required to support these changes and unique contexts (Salas Vallina et al., 2019). This study focuses on how leaders manage the changes required in organisational structures to support ambidexterity. These structures depend on the specific organisational design, which is a result of the strategy and change logic of the organisation (Galbraith, 2008; Jackson & Leung, 2018).

The leadership within an organisation must be able to manage and optimise the internal ambidexterity and resultant organisational design to ensure the organisation remains sustainable (Uhl-Bien & Arena, 2018). The organisational design should consider design elements such as culture, technology, management processes, organisational structure and strategy. Each of these elements is impacted by the change in the external (market or industry) as well as the internal (organisational) environment (Galbraith, 2008). The organisational structure is then changed as the industry and internal organisational environment requires. This study focusses on how a leader should manage the changes required within organisational structures to support ambidexterity (Lewis, Andriopoulos, & Smith, 2014; Tushman & Euchner, 2015).

The focus of the study builds on the work done by Uhl-Bien & Arena (2018), which outlines a theoretical perspective on organisational adaptability from a leadership perspective. The framework focusses on how leaders can position the organisation as well as its employees to adapt as the specific industry and market requirements. The framework integrates many aspects within disparate literature such as dynamic capabilities, complexity, innovation, leadership styles, paradox and tension. This study draws from the researched general framework, as well as literature on organisational design for ambidexterity. The research also draws on literature outlining how to integrate the explore and exploit elements that have been disconnected through temporal or spatial separation (Chen & Kannan-Narasimhan, 2015; Leavy, 2014; Tushman & O'Reilly, 1999). The theoretical contribution of the study lies in the focussed exploration of how leaders manage these required structural changes within the organisation, required for ambidexterity.

1.2 Purpose statement

This research aims to explore, from a leadership perspective, the ambidexterity paradox as it pertains to the organisational structure required to sustain it. A positive correlation between ambidextrous leaders and profitable organisations as well as between ambidextrous individuals and increased market share was established within literature (Leavy, 2014). Leadership styles, including transformational and situational leadership, and capabilities required to enable ambidexterity at individual level is also outlined in literature (Appelbaum, Calla, Desautels, & Hasan, 2017a; Jackson & Leung, 2018; Kim & Shin, 2019; Kollenscher et al., 2017; Srivastava & Jain, 2017). Exploration of the organisational structures, processes, business models and cultures required to enable ambidexterity at the organisational level of analysis was also found within literature (Galbraith, 2008; Leavy, 2014; Uhl-Bien & Arena, 2018). However, it is not clear how ambidexterity can solve for the tensions created within the exploration/exploitation paradox, moving beyond the spatial and temporal separation as the current perceived solution (Doz & Kosonen, 2010; Horney et al., 2010; Leavy, 2014; Lewis et al., 2014; Luu, Rowley, & Dinh, 2018; Salas Vallina, Moreno-Luzon, & Ferrer-Franco, 2019; Uhl-Bien & Arena, 2016).

It is challenging for the ambidexterity paradox to be held within one person or department. As such, organisations in general separate exploit and explore activities through temporal and spatial structures and processes. The exploration process for this study includes the investigation of how leaders deal with this shift in the organisational structure required for sustainable competitive advantage and identification of possible hindrances in creating the required ambidextrous processes and culture within an organisation. The final objective is to create a model outlining the change process and capabilities required by leaders and how to enable these within the organisation.

The problem statement and research purpose were outlined. The next section contains an outline of the literature review conducted. The literature review was conducted within four major themes namely, organisational design and change theory, paradox theory and organisational ambidexterity. Organisational design theory provided a perspective on how the organisation can be viewed. This lens informs the business model, structure and change processes of the organisation

(Galbraith, 2008). Organisational ambidexterity provides a perspective on how knowledge development, activities for belonging and identity building, processes and exploring/exploiting goals are prioritised within an organisation (Uhl-Bien & Arena, 2018). Priorities, and indeed changes in priorities over time, are required to maintain a competitive advantage in volatile markets with ever-changing consumer requirements. These changes can lead to the development of dynamic change capabilities within the organisation, to sustain the competitive advantage (Schweiger, Kump, & Hoormann, 2016).

The latter sections within this document outline the proposed research methodology that was followed to answer the research questions as well as research findings and conclusions.

2. CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Long term industry dominance was possible during a time when the economy was driven by manufacturing as long cycle advantages existed. It was within this context that strategic advantage through market positioning, defending and periodic realignment, as described by Michael Porter (1979), was possible. However, inter-industry competition is becoming more prevalent in the current market and the rate of increase in substitutes are growing at the same rapid pace of technological developments. It is then inevitable that the sustainable organisation will adapt to these changing conditions (Leavy, 2014; Tushman & O'Reilly, 2011). One vehicle for organisations to understand their current position and adaptability requirement is the theory of ambidexterity.

This literature review focusses on organisational design and ambidexterity to support the research study and final aim of exploring answers to the research questions. The concept of ambidexterity is reviewed on organisational, team and individual level. The concept will be broadened to enable understanding of the change capabilities required within an organisation to support ambidexterity and also the leadership requirements within such an environment.

Historically, the organisation was viewed as structures, regulated by processes, and designed to accomplish two fundamentally opposing tasks. These tasks included the division as well as the integration of resources and business units to support the overall organisational objectives (Patora-Wysocka, 2017; Roh et al., 2017). This view has been expanded in recent years. The current view of the organisation highlights it as a complex, organic system which responds and is able to make meaning of internal logic and routines as well as external changes. However, it can also be reduced to heterogeneous groups operating within a specific context, with formal and informal power structures (Roh et al., 2017; Waeger & Weber, 2017). The formal and informal power structures determine how the integration of explore and exploit activities takes place and the organic view of the organisation highlights the change management and change capabilities theory requirement; where the focus is how to manage people within the organisation towards a specific objective.

To create maximum value, the organisation must be designed and aligned to fit the internal and external environment. This change process to fit the changing external environment is prioritised in line with the organisational theory of business and perceived optimal point on the ambidexterity continuum. The change process can be enacted as top-down, with active management intervention, or bottom-up intervention which does not require the same level of management-led activities. The development of change capabilities is an outcome of this change process and ensures sustained competitive advantage (Cummings & Worley, 2015; Roh et al., 2017).

The business model and organisational design must then enable the organisation to meet current business demand however, it must also be able to adapt to the changing external environment (Havermans et al., 2015). Traditionally, leaders manage this ambidexterity requirement through the spatial and temporal separation of focus. Spatial separation ensures specific departments are orientated towards explore and others are focussed on exploit activities. These focus areas must then be integrated. From a classical perspective, the separation and integration were managed by senior leaders however, recent studies have highlighted the role that middle management must also fulfil to create the knowledge and information flow link (Chen & Kannan-Narasimhan, 2015; Uhl-Bien & Arena, 2018).

The aim of the literature was to shed light on the constructs of change logic within an organisation and how the requirement for ambidexterity influences the organisational design. The review of literature was required to be able to compare and contrast the prioritisation of the dual operating systems within an organisation and how these two focus areas of explore and exploit are integrated. The review goes further to determine what studies have been completed to understand how management deals with these constant changes within the organisational structure, as required for ambidexterity. It is not an exhaustive description of all the work available on the topic as the specific focus of this study is to understand how leaders manage the structural changes required by ambidexterity.

The next section outlines the theory on organisational design, followed by the theory of ambidexterity on the organisational, team and individual levels. These were the two main fields that were considered for the research study. To create context, the

review also includes theory on organisational change capabilities; this feeds into the understanding of how organisations can develop the abilities required to support emergent strategies. The final sections consider ambidextrous structures and leadership capabilities required to enable the environment. This was required to understand what studies have been completed in the specific area pertinent to the research questions of this research study.

2.2 Organisational Design

Organisation theory is a positive science to explain and understand ‘what is’, how structure, behaviour and effectiveness of the organisation link together (Burton & Obel, 2018). The field of organisational development and organisational design is normative and aims to deliver usable knowledge to the leaders of organisations (Burton & Obel, 2018; Galbraith, 2008). Historically organisational design determined the end state and organisational development introduced the process describing how to reach this end result. Due to the constant flux and change of the current market conditions, it is incumbent upon a leader to continuously switch between the two focus areas and as such, the two fields have overlapped (Galbraith, 2008).

The constant flux in market conditions can be due to demand-side factors such as global economic swings and increased customised offering requirements and changes in societal perceptions, as well as supply-side factors such as, change in government regulation and policies (Roh et al., 2017). The organisational structure has two fundamental and opposing tasks; the division of organisational units for efficiency and control, as well as the integration of these units to support the overall strategy (Roh et al., 2017). Integration is imperative as it fosters production efficiency, competitiveness through improved customer service and as such, enhanced organisational performance (Ferreira, Pimenta, & Wlazlak, 2019).

One dimension or consideration during the process of organisational design is the unit of analysis. Organisational design can be considered on the individual level (micro-contingency theory) or within a community or inter-organisational level (meta-organisation) (Burton & Obel, 2018; Roh et al., 2017). One of the main considerations in organisational design is one of centralisation or decentralisation.

Centralisation should result in consistency, coordination of interdependencies and dissemination of company best practices. Decentralisation, on the other hand, should result in fast and immediate action and decision making, focus on local talent, increased possibility of differentiation based on local differences. Looking at these different aspects it is then clear that structures, planning processes, information systems and interpersonal relationships must be considered to make a change (Galbraith, 2008). For this report, the focus is on how organisations are structured to manage the required ambidexterity and how leaders manage these changes, which could include interpersonal relationships, communication, information and planning processes.

Organisations are required to systematically arrange around the customer as well as business divisions, geographies and functions (Galbraith, 2008). Contingency thinking dictates that the type of organisational design also depends on the nature of the task. With a high rate of change in market requirement and technology development, these factors are in continuous flux. However, the cost of continuous organisational change can be prohibitive, and as such, the organisational design should also be forward-looking. This raises the challenge of how to design organisations for situations that have not been encountered before (Burton & Obel, 2018).

Mechanistic organisations are formed when the task or environment is more predictable. These organisations often follow command and control principles, have clearly defined roles and responsibilities and is hierarchical. In more uncertain environments organic organisations are formed. These organisations are flexible with a flat organisational structure with a culture of good communication and cross-departmental work teams. Once the structure has been determined, the organisation must determine a coordination and integration mechanism to ensure a good fit (Burton & Obel, 2018). Integration mechanisms depend on the rate of change and level of uncertainty within the industry. Where there is less uncertainty, hierarchical structures and voluntary coordination could be enough. However, for more uncertain or highly interdependent environments this is not always sufficient and more formal

lateral coordination might be required together with the relevant management structures to ensure integration between departments (Galbraith, 2008).

Informal lateral coordination or integration mechanisms are the cheapest and most natural but have the lowest power of authority. These integration mechanisms include voluntary interaction and coordination through electronic media and favourable environmental characteristics (Ferreira et al., 2019; Galbraith, 2008). More formal integration mechanisms include utilising a specific department or role to fulfil the function (Galbraith, 2008). Technology can also be utilised in a supporting role to enable vertical integration, by allowing management to track business processes in real-time (Ferreira et al., 2019; Neubauer, Krenn, Majoe, & Stary, 2017). The context where the organisation is formally structured to enable continuous lateral integration, such as a matrix structure, is the most expensive and takes maximum management time. However, it also allows for maximum power and authority vested in a specific product or project champion. It could lead to minimum time to market, with the risk that it also has the most potential to generate conflict. Each step to formalise integration also increases that cost of the structure (Galbraith, 2008).

Historically, organisations would add layers of lateral coordination in a cumulative manner, formal groups or project teams are added to the electronic coordination, formal integration by a department is added to the different formal groups, as a final layer the organisation is structured into a matrix with the required management functions and coordinators (Galbraith, 2008). In a matrix organisation, the team reports to the product department (or operations department) as well as into their function. The reporting lines are now quite complex as different functions such as marketing and logistics must have a mutual understanding of each other's priorities, and all actions must still be directed towards the overall organisational objective (Ferreira et al., 2019). As the reporting lines become more complex, so does the need for clear roles and responsibilities, conflict management and strong leadership (Galbraith, 2008; Roh et al., 2017). The final step to lateral coordination and networks is to create a separate product organisation which often becomes a profit centre. This organisational structure signals a strategy to develop a diverse line of products.

With the increase in customer buying power there is also a move from organisations to put more power and authority in the customer-facing units (Galbraith, 2008).

Organisational attributes such as strategy dictates the required governance model. A single business strategy demands high levels of centralisation and leads to minimal communication cost (Ambec & Poitevin, 2016; Galbraith, 2008). Diversification into related products requires moderate centralisation and depends on the specific context of each product, production process, technology and customer requirements, as well as aspects such as common information technology systems. Conglomerates with diversification through acquisition into unrelated product lines requires high levels of decentralisation (Galbraith, 2008). Decentralisation economises on communication cost and ensures the person with access to the most relevant information makes the decision, however, it also increases the risk of optimal alignment with the overall organisational requirements which again increases alignment effort and cost (Ambec & Poitevin, 2016).

The organisation adapts its strategy as per market changes and requirements and as a result also change the organisational structure to support the strategy (Cummings & Worley, 2015). Stepwise changes in the structure ensures sufficient time for management to develop the required capabilities, processes and systems to adjust to the new structure (Galbraith, 2008). The voluntaristic perspective within organisational change theory dictates the fundamental importance of management purposefully directing the design change initiatives (Roh et al., 2017). This supports the requirement for strong leadership within more complex structures and where there is a constant requirement for structural change. Yet, such a top-down approach is not sufficient, especially in environments with short cycle change frequencies. A bottom-up approach, where organisational capabilities are central to how resources are utilised, would ensure a more streamlined structure. Dynamic change capabilities are further discussed in section 2.3.1.

It is useful to consider elements such as technology, structure, culture, management processes and human resource systems when evaluating organisational design. These elements should be aligned with the final factor, strategy, which should be

aligned with the external environment (Cummings & Worley, 2015). The external environment can be evaluated in the context of the five forces, as defined by Michael Porter (1979). These forces are referred to as the task environment. The external environment also consists of the enacted environment. The enacted environment describes how the employees of the organisation perceive the external environment and make sense of it. The external environment must be also be understood in terms of rate of change (Galbraith, 2008). As the external environment changes, so must the organisational design, or at least elements of it. The organisational view determines how the organisation is designed, change drivers within the external environment is sensed and how business partners are managed. Organisational change theories can be viewed through a strategic choice or natural selection view lens. The level of analysis of the strategic choice view lens, with single vision orientation, is the individual organisation, and managerial action is viewed as active (Galbraith, 2008; Roh et al., 2017). However, the organisation can be evaluated on many different levels and active management intervention is not always what is required to lead in today's modern organisation.

Managers purposefully drive and direct change initiatives, also referred to as a top-down approach. This is also in line with the voluntarist orientation. The natural selection view identifies an organisation with internal processes in place such that there can be organic evolution of new and required processes. Managerial action is viewed as passive (Roh et al., 2017). From a managerial cognition perspective, the challenge is not only what organisational design changes to make to support emerging strategy, but also how to administer and enable these changes for effective change to take place. A construct that provides a vehicle for exploring this dilemma is the construct of ambidexterity.

2.3 Organisational and Individual Ambidexterity

A business model is a cognitive structure that provides the theory of the business of how the organisation governs internal structures, relate to the environment and create value. These models are naturally stable and difficult to change. It is for the sake of this internal stability and focus on organisational strengths that many organisations continue to operate with systems that hinder change, rather than

enacting the changes required for exploration and increased market growth (Doz & Kosonen, 2010; Lyons et al., 2011; Probst, Raisch, & Tushman, 2011).

In the current market of value chain specialisation and market disruption organisations are required to be explorative (searching for new markets and capabilities; flexibility, contrary views, experimenting, new knowledge and technology) as well as exploiting their existing market position and competencies (efficiency, control, certainty, refinement, existing technology and knowledge). This dichotomy is defined as ambidexterity. The ambidextrous nature of the organisation informs how it prioritises daily routines and innovation, it also influences the change logic and determine the dominant operating system. Ambidexterity can be perceived on organisational and team level and ultimately manifests at an individual level. It requires specific change capabilities to be developed within each individual (Jackson & Leung, 2018; Leavy, 2014; Luu et al., 2018; Salas Vallina et al., 2019; Schweiger et al., 2016). These capabilities enable the individual to sense and seize the opportunity. Development of the capability enables management to transform the environment to support the change in market requirement and ultimately to be able to prioritise and balance the current business requirements with future exploration (Schweiger et al., 2016).

The organisation can achieve a stable, efficient internal environment for short-run success. However, this singular focus can be self-destructive in the long run as the organisation does not continue to match customer demands. Exploration can deliver long-term success yet might lack short-term efficiency to generate funds required for R&D. Positioning the organisation on the correct point on the ambidexterity continuum and appropriate interaction between exploration and exploitation represents the required emergent capability to ensure a competitive advantage. Organisational performance and ambidexterity have a significant, positive correlation which is moderated by the context. As such, the optimal point on the ambidexterity continuum is not equal exploration and exploitation but rather, depends on the external market and industry conditions (Havermans et al., 2015; Salas Vallina et al., 2019).

Jackson & Leung (2018) theorises that the requirement of ambidexterity within an organisation should be managed through evidence-based management. The organisation should first identify where it is on the continuum, determine where it should be based on market conditions and then determine a strategy. The external context of an organisation is driven by diverse forces such as customer requirement and technology development. This framework considered the overall compliance requirement of the organisation. The four contexts that were investigated were high and low ambidextrous organisations in a high and low compliance setting. The four possible strategies that were identified are outline below, in Table 1.

Table 1: Strategies in four organisational contexts

Degree of Ambidexterity	Low Compliance Context	High Compliance Context
Low Ambidexterity	<p>Transformative strategies</p> <ul style="list-style-type: none"> • Focussed on exploration • Value field evidence and abductive logic • Prone to overconfidence bias 	<p>Projective strategies</p> <ul style="list-style-type: none"> • Use evidence to project expertise into the existing organisation • Depend on historical data • Overvalue exploitation
High Ambidexterity	<p>Symbiotic strategies</p> <ul style="list-style-type: none"> • Willing to take creative risks • Will not put the brand at risk • Flat creative division with a bureaucratic division to exploit past innovations 	<p>Preservative strategies</p> <ul style="list-style-type: none"> • Exploit current products while making incremental improvements/low-risk expansions into other markets • Bureaucratic structure with R&D division for new products

Source: (Jackson & Leung, 2018)

The study utilised this framework to label the strategies followed by each organisation. The aim was to determine where the organisation perceives itself on the ambidextrous continuum, to create the context to understand the reasoning behind the related organisational structure and what is required from leaders to manage the continuous change in structure and resource allocation to support a sustainable organisation.

As outlined in the figure below, the point on the ambidexterity continuum dictates the organisational change logic and operating business model. The figure highlights the different focus horizons, strategies and change management styles required based on the point on the ambidexterity continuum.

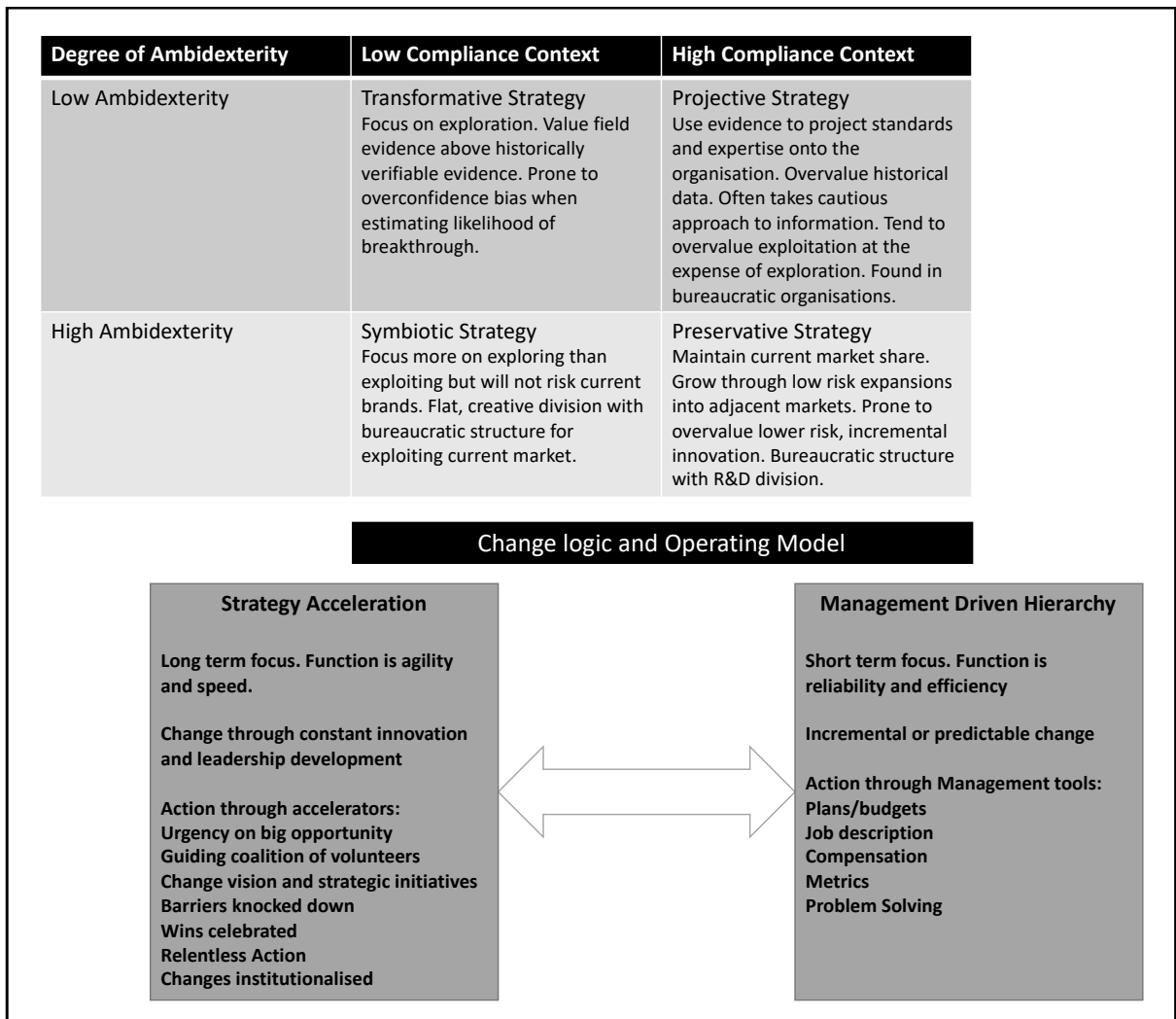


Figure 1: Ambidexterity Continuum

Source: (Jackson & Leung, 2018; Leavy, 2014)

From the figure above it is clear that high levels of ambidexterity require a both/and solution that leverages differences and synergies of these opposing aspects. The decision goal of this type of paradox is then to find a revised objective which maximises the advantages and minimises the disadvantages of these elements. However, exploration and exploitation require conflicting and opposing processes and structures. (Jackson & Leung, 2018; Leavy, 2014; Lewis et al., 2014).

To solve for the paradoxical tensions, an organisation can choose to specialise to one side of the continuum. This is feasible in vertically disintegrated industries, such as biopharmaceuticals. In opting for this strategy an organisation is only leveraging current capabilities and is exposed to market and technology changes. Positioning the organisation on the highly ambidextrous point of the continuum, in turn, can create a failure trap due to high levels of change and low levels of efficiency. Alternatively, if the leadership within the organisation can hold the paradoxical tensions, it can create creative friction and constructive conflict which leads to questioning the status quo and initial assumptions and ultimately enables growth in market share (Jackson & Leung, 2018; Leavy, 2014; Lewis et al., 2014).

The executive leaders within an organisation should understand the current decision logic of the organisation as well as external market requirements and readjust their current and required strategic point on the ambidexterity continuum accordingly. (Leavy, 2014).

Up to this point ambidexterity has been conceptualised on the organisational unit level of analysis. Yet it has been established that the shortest change path to delivering a new product to market, is to develop organisational change capabilities directly, within the individual (Altmann & Lee, 2015; Salas Vallina et al., 2019).

The ambidextrous individual can be conceptualised as an employee that integrates both exploration and exploitation activities. Exploitation activities include behaviour that minimises variability, using past experience and existing routines to put things into action. These actions result in incremental improvement of routines. Exploration activities lead to increased variability through experimentation and learning from resulting errors. Exploration behaviour and activities do not rely on current knowledge and existing routines and results from finding novel ways to fulfil a task. It requires a focus on a pro-active, non-routine, broad search for reaching goals. These individuals succeed under ambidextrous leaders that support and encourage adaptive behaviour and set a clear vision of the future strategy (Luu et al., 2018; Salas Vallina et al., 2019). Ambidextrous leadership is discussed in section 2.4. The section below focusses on change capabilities which the organisation develops as part of the change process to remain competitive.

2.3.1 Organisational Change Capabilities

The organisational structure is dictated based on the organisational business model. On the individual level, the organisational design determines how individual outputs are aligned to allow for a collective output to emerge. These capabilities that emerge during this process can be defined as internal or organisational capabilities. To ensure sustainable competitive advantage, the organisation must focus on and develop these capabilities that can support the strategy (Altmann & Lee, 2015; Cummings & Worley, 2015; Lyons et al., 2011; Roh et al., 2017; Salas Vallina et al., 2019).

Organisational view with active management participation reflected in top-down change management, and change with passive management participation, reflected in bottom-up change management, can then be combined into two cyclical processes. The first has managerial cognition at its centre and the other process places organisational capabilities as central to how organisational resources are utilised. The first process has a voluntaristic orientation and outlines that management plays an active role in identifying, interpreting and determining how resources are used. These utilisation processes build specific organisational capabilities over time which, in turn, shapes managerial cognition. The second process has a deterministic orientation which places organisational capabilities central to how organisational resources are utilised. The utilisation processes shape managerial cognition. Managerial cognition, where management guides actions and commitments, builds organisational capabilities (Altmann & Lee, 2015; Lyons et al., 2011; Roh et al., 2017; Salas Vallina et al., 2019).

If products are delivered to market by transforming organisational resources through organisational capabilities, it stands to reason that the shortest change path is by developing organisational capabilities directly, in the form of change capabilities. However, this is primarily the priority in a volatile environment. It is clear that different environments require different organisational structures, processes, cultures and resources. Efficiency and incremental change require more formalised structures and centralised procedures. Turbulent external environments require smaller, decentralised structures and experimental cultures. These diverse functions should be separated either by organisational structures or focus in time. Leaders of the extant organisation must be able to manage and deal with this constant change to

ensure differentiation of functions as well as integration for maximum value (Doz & Kosonen, 2010; Luu, Rowley, & Dinh, 2018; Tushman & O'Reilly, 1999).

The theory of dynamic capabilities is grounded in the resource-based view of the firm where it is the internal resources and how these resources are utilised and reconfigured that achieves the sustainable competitive advantage of the organisation. Dynamic capabilities are categorised as either operational or dynamic (Schweiger et al., 2016). Operational capabilities refer to those capabilities required to complete routine activities and ensures the effective use of resources. Change capabilities include sensing, seizing, transforming and prioritising. Sensing the need for change and possible business opportunities and seizing the opportunities by designing new business models or business opportunities that are closely related to the strategy. Transforming refers to the ability to reconfigure resources to ensure re-energisation as opposed to inertia. Prioritisation refers to balance required to manage the current business as well as create and innovate new products, processes and routines. (Schweiger et al., 2016; Uhl-Bien & Arena, 2018).

Dynamic capabilities ensure that the resource base can be adjusted and reconfigured, as per market requirements, in a timely and decentralised manner. However, it does not ensure an increase in value add for the shareholders as it is not a measure of how well the organisation is able to implement a strategy. To ensure the successful implementation of strategy the organisation requires change capabilities. These capabilities include developing ideas for change through searching (external) and reflection (internal), seizing ideas for change, implementing ideas for change through planning and implementation and strategy making. These change capabilities are embedded in the theory of the business or the dominant logic of the organisation. How the organisation deals with change is referred to as the organisational change logic (Salas Vallina et al., 2019; Schweiger et al., 2016).

There must first be a reasonable understanding of the current change logic for the organisation to be able to develop the required change capabilities. The organisational change logic refers to the underlying norms and principals regarding change. Change logic is how internal learning takes place and the resultant, emergent decision rules regarding change. Once the current change logic is understood there should be a clear, common view of the definition of the preferred

future with regards to the ambidexterity, agility and leadership agility required within a specific environment (Schweiger et al., 2016). It is the role of executive management to determine this requirement, structure the organisation and put the required processes in place to operationalise the strategy.

Executive managers can also use this understanding of the need for dynamic capabilities to empower middle management to make decisions regarding their unique business environment. The level of middle management, down to the employee on the floor, are closer to the customer or client. It is also on this level where past learnings, current experimentation and dynamic capabilities can support agility and adaptation. The organisation needs to adapt to market changes, to improve on dysfunctional routines in a timely fashion and to enable employees to challenge and improve the strategy where required, to remain sustainable (Uhl-Bien & Arena, 2018).

2.4 Ambidextrous Leadership

Dynamic capabilities do not lead directly to increased value for the shareholder. The organisation must also have the capabilities required to implement a strategy. Yet the strategy in and of itself will also not lead directly to increased value for the shareholder as the strategy must also fit the market requirements. It is the responsibility of the CEO and senior management to understand the driving forces that shape the economy and society around them. This requires intellectual honesty to see the world as it is. The CEO must be able to clarify the unique value proposition of the organisation, identify the current change logic and the required position on the ambidexterity continuum. The board has a responsibility to ensure organisational performance and thus organisational ambidexterity. Organisational ambidexterity is clearly a leadership activity and challenge (Leavy, 2014; Probst et al., 2011).

The strategic vision and directives, as communicated by the CEO, must filter through the organisation, enabled by leadership on each level. Top-down strategy execution is enabled by outlining a clear strategic requirement and monitoring progress against set goals. This is the responsibility of the board. Middle management executes both responsibilities of communicating operational insights upwards as well as implementation requirements downwards. Strategy implementation is then not only

a top-down focus but also a bottom-up activity where front line employees also play a pivotal role (Luu et al., 2018).

During strategy execution, tensions are created where variability is minimised for efficiency in some instances and maximised on other circumstances. The strategy impacts different organisational divisions in different ways. If the organisation aims to grow, the R&D division might grow in numbers and funding, where the operational or production divisions were used to having the most power during times of focus on efficiency and production. Ambidextrous leaders must be able to manage different divisions within the organisational whole and also specifically manage how the requirement from each division changes. Ambidextrous leadership is then a dynamic competence. It can be defined as the ability to recognise and engage tensions and identify and leverage opportunities to exploit internal and external competencies to maximise synergies between the tensions (Lewis et al., 2014; Luu et al., 2018; Probst et al., 2011).

The focus of the ambidextrous leader is not to lead change but rather, to lead adaptability. Adaptability leads to ambidexterity within the individual, team and organisation. The ambidextrous leader creates a safe space for innovation to be in tension with the efficiency of the core business such that the innovation can be integrated into the core business for the sustainability of the organisation. The leader must enable network connections and related interactions and foster cooperation as well as individual performance. There is a definite requirement that the ambidextrous leader must be able to position the organisation and the specific team such that they can adapt for their specific context (Uhl-Bien & Arena, 2018).

The ambidextrous leader must be able to sense and respond to change in the business environment. Due to changing market conditions, the leader must be able to make emerging and invariably imperfect decisions, voiced as commitments. As such, relationship building with stakeholders is of great importance and must remain deep and enduring (Leavy, 2014). The leader must also be adept at moving talent where required as organisations that require high ambidexterity must be able to change resource allocation with great fluidity. Talent can be sourced from the pool of permanent employees as well as strategic partnerships. There should be a continuous conscious effort to continuously upskill and develop resources with

required capabilities. The leader creates an overarching vision and shared identity and balances delegation with strategic direction to ensure engagement as well as cohesion (Horney et al., 2010; Leavy, 2014). Minimising uncertainty and creating internal stability to ensure efficiency is crucial. This can be achieved by focussing on a few, clear strategic objectives and crafting a specific social architecture (Leavy, 2014).

The three components to ambidextrous leadership are defined as closed and open leadership behaviours as well as the situational awareness to be able to adjust between the extremes. Opening behaviours support the employee's endeavours to maximise variability in goal searching and achievement, in challenging the status quo. Closing leadership behaviours include monitoring goal attainment against a set timeline and requirements, centralised decision making and taking corrective action. Leaders signal which behaviour is appropriate for a specific situation. Employees then emulate this ambidextrous behaviour. Opposing but complementary behaviours are required to enhance employee innovation. Ideas are stimulated through opening behaviour and the transformation process is enhanced through closing behaviours (Lewis et al., 2014; Luu et al., 2018; Zacher & Wilden, 2014).

The ambidexterity and ambidextrous leadership must ensure that the organisation can adapt to its specific context. Strategic ambidexterity is maintained through strategic agility. The concept of agility is intertwined with that of ambidexterity. As such, the next section outlines the concept of agility for the reader to be able to conceptualise agility when referred to in the research study process.

2.4.1 Strategic Agility

Ambidexterity, as it is conceptualised on the organisational and individual unit of analysis, was discussed in the previous sections. Ambidextrous leadership mechanisms and practices were also outlined. These concepts are essential as, if applied correctly, it can lead to increased value for the shareholder and increased performance (Galbraith, 2008; Schweiger et al., 2016). However, having the correct capabilities to execute the strategy can only lead to increased value and competitive advantage if the strategy fits the organisational environment and resources are properly allocated. Strategic commitments and the current change logic of the

organisation determine the allocation of resources to build core and adaptive competencies. Agility reflects the ability to respond innovatively to a dynamic market. In an ever-changing market, it is imperative to maintain strategic ambidexterity through agility (Doz & Kosonen, 2010; Leavy, 2014; Lewis et al., 2014). It is thus vital to fit strategy to the external environment, align the organisational elements to fit the strategy and properly allocate resources. In addition to this the organisation remains sustainable only if it is able to change as the external environment requires. This change is referred to as strategic agility. Strategic agility is possible through strategic sensitivity, leadership unity and resource fluidity (Doz & Kosonen, 2010).

Strategic sensitivity refers to the ability of leaders to remain aware of the current, and changes to, the external and internal organisational environment (Doz & Kosonen, 2010). Strategic sensitivity raises tensions as leaders must be able to learn from the core business processes as well as let go of the experience and current know-how to allow for experimentation and change. They are able to challenge the status-quo and envisage a new system, conceptualising and restating the new business model (Doz & Kosonen, 2010; Lewis et al., 2014).

Leadership unity is required to create a common purpose (Doz & Kosonen, 2010). It raises tensions between the individual and team as it values and depends on the collective actions of the team as well as diverse perspectives and multiple points of view. Leadership unity requires transparency, aligning towards a common goal and compassion to reach collective goals and engagement (Kotter, 1995). These aspects are required for leadership to be able to make fast strategic decisions, give strong commitment and allow experimentation and resulting radical change (Doz & Kosonen, 2010; Havermans et al., 2015; Kotter, 1995; Lewis et al., 2014; Probst et al., 2011).

Resource fluidity is required to implement the required strategic changes. However, resources are most efficient within a stable internal environment (Doz & Kosonen, 2010). Tensions are created as resource fluidity also requires change and novelty. Executing a specific strategy might require the use of internal resources as well as resources through service providers and other strategic partnerships. Resource fluidity translates into the requirement for a modular business system. The organisation must be able to switch between business models and move resources,

where required, in a timely manner (Doz & Kosonen, 2010; Leavy, 2014; Lewis et al., 2014).

As previously noted, a paradox denotes interrelated, contradictory elements that simultaneously persist over time. Leaders seek to ascertain a both/and solution within a paradox to foster long term sustainability through maximising synergies (Lewis et al., 2014; Uhl-Bien & Arena, 2018). Lewis et al., (2014) identified leadership practices that enable strategic agility. The leader must be able to value paradox to enable performance. The leader must create a safe working environment where employees can raise tensions and not become defensive. It is also imperative that the leader separate efforts to be able to focus on both elements of explore and exploit. However, in addition to the separation, the leader must continuously communicate the shared vision and how the separate elements feed into this vision (Lewis et al., 2014).

Leaders can minimise anxiety and defensiveness by providing a safe environment where employees can work through a paradox and build confidence in taking risks. Leaders should provide processes for employees to express angst and tools and resources for them to succeed. Set clear boundaries and empower employees to evolve within these constraints. Clarity of strategic priority is paramount when communicating a clear both/and vision. Strategic goals should be set such that the competing demands within the environment are recognised. Leaders should challenge their perception of how human, financial and time resources should be allocated. These resources should be allocated to support synergies and maximise value (Appelbaum, Calla, Desautels, & Hasan, 2017b; Lewis et al., 2014).

Even though it is stated that leadership within the organisation should be able to hold the tensions and enable a both/and solution, it is difficult to hold these tensions within one person. As such, the organisation can be structured to separate the tensions and ensure focus on different elements. Separation can be achieved through temporal or spatial separation. Spatial separation can be achieved through physical and structural spaces, created where resources are primarily dedicated to traditional or new venture work. Resource fluidity allows for movement across the different teams and spaces. This leverages the traditional business' strengths, builds new knowledge within the new venture space and ensures knowledge transfer throughout

the organisation. Temporal separation utilises the same team where the team divides time to explore and exploit. Spatial separation calls for different structures, achieving focus on each of the competing goals. In this case, senior management leverages the synergies between the paradoxical elements (Havermans et al., 2015; Lewis et al., 2014). Separation of tensions is discussed in the next section.

2.5 Ambidextrous Structures and Leadership Capabilities

Ambidexterity on the organisational and individual level has been researched together with leadership requirements to enable this capability. The paradox has been explored on the organisational level as temporal and spatially separated processes as well as on the individual level as a behavioural orientation towards exploration and exploitation. However, it is not clear within literature how the leader can solve for the required temporal or spatial separation required within the organisation. It is not clear how the leader can support ambidexterity and manage the tensions created within the different organisational separations required.

The organisation can be structured as a dual operating system to enable ambidexterity. The one system is a management-driven hierarchy with efficiency as focus and where incremental innovation is possible. This system is the core business. The other structure is a strategy acceleration network with agility and speed and the future as the main focus. This is the new venture business (Leavy, 2014; Uhl-Bien & Arena, 2018). It is then the main focus of senior manager to link activities, capabilities and learnings between these two systems. There is some inherent risk to this aim as capabilities are 'mutated' when integrated into routine activities, which could eliminate their novelty (Kollenscher et al., 2017; Leavy, 2014; Srivastava & Jain, 2017; Tushman & Euchner, 2015; Uhl-Bien & Arena, 2018).

Here the two elements are essentially separated by space, or into different divisions or functions. Spatial separation does not have to be permanent. The organisation can adapt its structure through temporary decentralisation. Centralisation maximises coordination, whereas decentralisation allows for more agility. The organisation can move from centralisation to decentralisation, for intense exploration, by operationalising the concept of decentralisation through temporary teams and networks (Uhl-Bien & Arena, 2018).

Focus on the opposing elements of the paradox can also be separated by time, namely through temporal separation. The same team can focus on efficiency and putting the required processes and structures in place until efficiency and routine is achieved. From here the focus is shifted to exploration of the market to develop future scenarios and possibilities. The requirements for the shift are sensed from the market and internal changes. However, it must be taken into consideration that the person hired to explore is not always the same type of employee required for exploiting. Teams should be heterogeneous, and the leader should be able to manage the resulting tensions (Kollenscher et al., 2017; Leavy, 2014; Srivastava & Jain, 2017; Tushman & Euchner, 2015).

Management should structure the organisation to align with the external environment and organisational strategy to be executed, which is based on organisational resources and strategic advantage. Management cognition is informed by organisational capabilities as well as utilisation processes (Altmann & Lee, 2015). The organisational structure is then related to the internal change logic and business model of the organisation. It is related to how resources are allocated and coordinated and how power is distributed. Organisational structures regulate human behaviour. As such, also influences what leadership style and behaviour is deemed acceptable within an organisation.

Ultimately, the consideration is also, what leadership style is required to create an ambidextrous enabled environment. The competing values framework gives an outline of the value drivers and leadership styles acceptable within specific dominant cultures. This is relevant as the ambidextrous leader must understand the prevailing internal logic and individual and team identity to influence the correct strategic change. The values framework is outlined in the figure below (Cameron & Quinn, 2011; Kim & Shin, 2019).

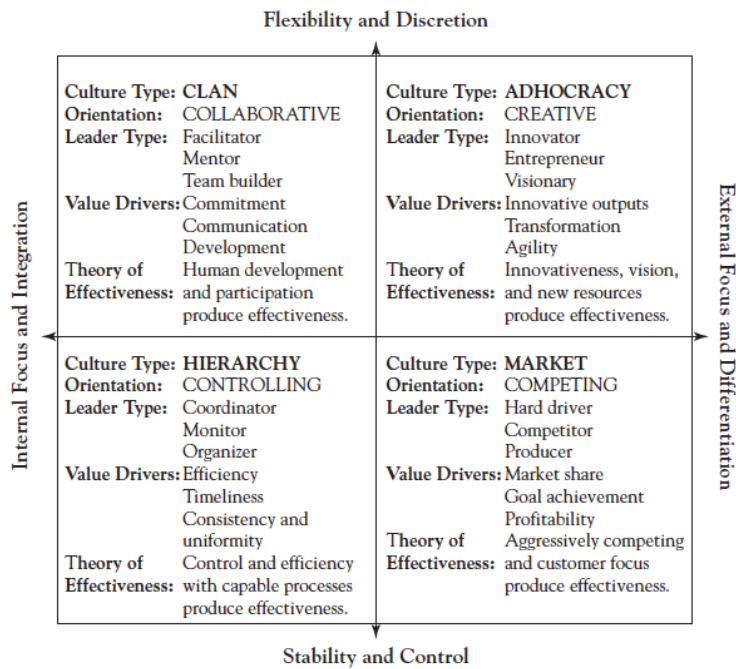


Figure 2: Competing Values Framework

Source: (Cameron & Quinn, 2011)

Enabling contextual ambidexterity within different structures and heterogeneous teams can be achieved by different ways of managing as well as understanding that the people and teams will need different identities. Where contextual ambidexterity can be seen as the specific point on the ambidexterity continuum as required for a specific organisation within a specific industry and market. It is not only the identity of the organisation that is adjusted with strategy but also the individual and team. The leader must enable the team to change the coding of their professional identity (Havermans et al., 2015; Kollenscher et al., 2017; Tushman & Euchner, 2015).

Ultimately, the ambidexterity paradox is carried by the CEO. However, leaders within every level of the organisation have a role to play (Uhl-Bien & Arena, 2018). Leadership styles within ambidextrous organisations can be conceptualised as the process of the team needs satisfaction, rather than specific styles manifest within a specific person. A combination of leadership styles is required to support ambidextrous individuals and the required style is impacted by internal factors such as size, geographical dispersion of teams and organisational structure. These different styles include; Vertical leadership that stems from formal authority by

appointment and shared leadership that is developed as a process within the team. Transformational leadership behaviour direct people to the shared vision, inspire and provide an integrated understanding of the overall goals to be achieved. Transactional leadership behaviour protects the team from external interference and simultaneously represents the team to external parties (Appelbaum et al., 2017b; Jackson & Leung, 2018; Leavy, 2014; Srivastava & Jain, 2017).

Transformation leadership is regularly selected within literature to represent the approach by leaders to elevate thinking and motivate specific change. There are specific sub-categories within transformational leadership. The first is charismatic behaviour, which is group-based and facilitates the social identification process and inspirational motivation. The second is more individualised and focusses on a strong connection between the leader and the team. This category manifests in person-related behaviour; however, it is not effective in the cultural context of centralised, bureaucratic organisations. In these organisations, employees are less motivated by leaders that value the individual (Kim & Shin, 2019; Kollenscher et al., 2017).

Utilising different leadership styles can be effective. However, managers operate within time as well as geographical and psychological boundaries or constraints and are also constrained by the prevailing organisational structure and culture. These limitations are more severe in hierarchical and large organisations. This approach focusses on top-down methodology and creates a single point of failure within a successful leader that is able to manage the ambidexterity paradox successfully (Kim & Shin, 2019; Kollenscher et al., 2017).

The change in organisational structures required for ambidexterity has been discussed. Merging the explore and exploit team views with each respective views, cultures and focus areas, creates conflict. Ambidextrous leadership manages these conflicting forces to create an environment for emerging innovation and as such improve the organisational strategic advantage. An executive management team with ambidextrous leadership capabilities are able to manage the paradox. These managers interact and collaborate to create new organisational knowledge. To create such an environment for positive conflicting and collaboration, the team requires trust and reciprocity (Uhl-Bien & Arena, 2018).

It is then clear that ambidextrous leadership is not merely a top-down activity, it is a behaviour and activity that requires leaders on each level of the organisation to work together to create the emerging strategy of the organisation. A vital role for the ambidextrous leader is to integrate and manage and create tension in such a way that innovation emerges. Integration is possible by creating linkages to an overarching vision that support the transition from one system to another. The end goal is to create a new internal logic and enable reintegration of innovation and novelty into the current core business (Uhl-Bien & Arena, 2018).

Traditionally, ambidextrous leadership studies have then focussed on the required behaviour of the individual leader. However, as outlined above, each leader operates within organisational constraints and, as such, this approach has weaknesses (Uhl-Bien & Arena, 2018). Architectural leadership (“AL”) describes the construct of ambidextrous leadership as not just behavioural but also making use of organisational processes and procedures. AL outlines how to structure the organisation, focussing on creating the means to enable organisational goals, build capabilities and enhance value. Leaders focus on value drivers and critical core business processes that embody the organisation’s main competitive capabilities. The organisation is structured to support the processes required to coordinate strategic activities. These processes cut across hierarchical structures and coordination and division of labour is paramount (Kollenscher et al., 2017).

The organisational goal is thus attained through the development of infrastructure that includes knowledge and managerial infrastructure and fulfils the organisation’s purpose (Kollenscher et al., 2017). AL is distinguished from transformational leadership as it does not rely solely on behavioural transformation. Instead, AL relies on infrastructure that emphasises tools, material artefacts and routines. The organisation’s purpose is assimilated through concrete activities rather than behaviour, as it manifests within specific people. However, if these processes are too rigid, organisational contextual ambidexterity might be lost. To mitigate this risk, the CEO creates a managerial frame within which the organisation should work and the respective teams develop the technical (Kollenscher et al., 2017). The focus here is also on middle management and the role they play in linking the explore and exploit department. These linking activities can include boundary spanning, cross-functional training through resource fluidity, planning and decision making through joint

committees and planning resource deployment in such a way as to enhance interconnectivity (Uhl-Bien & Arena, 2018).

2.5.1 Integration Mechanisms

Ambidexterity is facilitated by separating the focus on exploring and exploiting through temporal and spatial separation. However, to fully make use of synergies and create a both/and solution, the ambidextrous units should be combined to achieve integration. Integration causes tensions, yet, ambidextrous leadership is the dynamic and relational capability to manage exploitative and explorative tensions towards the optimum position on the ambidexterity continuum, balancing goal achievement and relationship building.

Leaders utilise specific formal and informal mechanisms and practices to manage and optimise towards the optimal position. Formal control mechanisms include controlling the behaviour that leads to the desired outcomes as well as controlling the outcome itself. These mechanisms are enacted through a bureaucratic management style and relate to enforcing a specified pre-planned goal against a set schedule (Gregory & Keil, 2014). Formal mechanisms also include financial performance and technical reports, formalisation and standardisation and planning. The critical integration dimensions to consider is who initiates the new venture, and when collaboration is solicited (Chen & Kannan-Narasimhan, 2015). Informal control mechanisms constitute motivating employees to control themselves through the creation of an overarching goal, shared values, attitudes and ideals (Gregory & Keil, 2014). These mechanisms also include reliance on social integration, liaison channelling, network building, temporary teams and collaborative decision making (Chen & Kannan-Narasimhan, 2015). These mechanisms are based on trust and strengthen the influence of formal behavioural control. However, informal mechanisms also weaken the influence of formal outcome control mechanisms (Gregory & Keil, 2014).

These different mechanisms and practices can be drawn upon by the leader depending on the situation. In the project's environment, team leaders are often temporarily in that leadership position and must draw on different approaches due to lack of formal authority. Leadership practices that enable exploration include

stimulating conversation, encouraging the development of others, accepting mistakes, embracing diversity and engaging in transparent interactions. Exploration can also be encouraged by providing a safe environment where employees can build confidence to take risks and grapple with the paradox.

Practices that enable exploitation include taking only calculated risks, sticking to agreements, enforcing rules and making decisions. Paramount to enabling a both/and solution is the ability of the leader to clarify strategic priorities. The competing demands within the environment should be recognised when setting strategic goals. As a final point, leaders should re-evaluate their perception of how resources should be allocated to ensure optimum support of synergies within the environment and creation of maximum organisational value (Appelbaum et al., 2017b; Gregory & Keil, 2014; Havermans et al., 2015; Probst et al., 2011).

The proposed theoretical framework of how leaders can manage the shift in focus through spatial and temporal separation is outlined in Appendix B.

2.6 Conclusion

Literature defines organisational ambidexterity on organisational, team and individual level. There is also evidence that organisational ambidexterity supports profitability and increased market share. Traditionally ambidexterity was conceptualised to be required on senior and executive level management, however, this notion was extended in the realisation that all levels of management must take part to enable an ambidextrous organisation and front-line employees were also included. Literature stipulates many requirements from an ambidextrous leader and individual. This includes the ability to operate in and integrate the two disparate worlds of efficiency and innovation. There is also evidence that the type of person comfortable in an efficiency environment is not necessarily comfortable in an innovation environment and vice versa.

Reintegration thus brings tensions that the extant leader must be able to manage, to create an environment that uses these tensions towards creativity. Literature outlines mechanisms such as temporal and spatial separation and the integration mechanisms such as creating an overarching vision. This is if the organisation is

viewed as processes and mechanisms. However, an organisation is more like an organism, built up by living entities, each with their own agenda, culture and history. Even with an overarching vision and clear roles and responsibilities, what is not evident within literature is how the leader is able to deal with the constant change required in the organisational structure to support ambidexterity.

3. CHAPTER THREE: RESEARCH QUESTIONS

Separation and reintegration of the explore and exploit activities within an organisation create tensions that must be managed by the extant leader (Tushman & Euchner, 2015; Uhl-Bien & Arena, 2018). Literature outlines requirements that the leader can follow, such as specific resource allocation, how to enhance collective learning through strategy execution when using a model such as spatial separation (Khanagha et al., 2014). There is also evidence within literature on how organisations address the reintegration of the explore and exploit functions and how to make use of or enhance the resulting change capabilities (Chen & Kannan-Narasimhan, 2015; Uhl-Bien & Arena, 2018). However, what is not clear from literature is how leaders manage the changes and flux created within the organisational structures to support the required ambidexterity (Salas Vallina et al., 2019).

Based on the identified gaps in existing literature as well as the specific preceding literature review, this research aims to explore ambidexterity from a leadership perspective. Specifically focussing on how leaders manage the paradox and the shifts in organisational structures (spatial and temporal) created to sustain it. The objective of this qualitative research is then to explore how leaders manage this continuously changing environment as well as identify possible hindrances in creating the required cultures and business processes essential for ambidexterity within an organisation. In addition, the study aims to outline a practical framework of change processes and capabilities required by leaders and how to enable these within the ambidextrous organisation. The research study answered the following specific research questions to enable these objectives:

3.1 Research Question 1: How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?

Research question 1 seeks to gain an increased understanding of the organisational change logic, how leaders see the current organisational environment and the point on the ambidexterity continuum that the organisation occupies. The question also aims to determine how the organisation is currently structured in order to manage the organisational shifts and changes required to both explore and exploit. This

research question is asked to improve the understanding of how organisations are structured to deal with ambidexterity.

3.2 Research Question 2: What is the change process used by leaders to manage the structural shifts that enable ambidexterity?

This research question aims to clarify what the current formal and informal mechanisms and processes in place are to integrate 'new venture' departments or functions or teams (explore functions) into the current core business (exploit functions), as well as any identified hindrances. These hindrances can include obstacles to put processes in place as well as to create the required culture within the ambidextrous organisation.

The first interview question in this section ascertained as to the formal mechanisms, and the second question requested the respondent to reflect on any informal integration mechanisms. Formal integration mechanisms can include the organisational structure, such as departments or formal teams responsible for integration. These mechanisms are put in place by very senior management, either the respondent self or someone more senior. Informal mechanisms could give better reference to mechanisms put in place by the respondent and can also reflect the culture of the organisation or department.

3.3 Research Question 3: What capabilities do leaders require to manage the structural shifts that enable ambidexterity?

The final research question aims to understand the capabilities (which can be linked to a specific leadership style) utilised by the successful leader, able to integrate the explore and exploit elements within the ambidextrous organisation. To understand how the leader manages the specific structural changes required to support a sustainable business in the current market.

4 CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Methodology

Business situations are complex where the specific social actors within a specific context dictate the outcome and how the situation should be perceived. These social actors and organisations derive meaning from the world and by existing and competing also gives meaning to the world. The social actors and organisations that are researched cannot be observed separately from their environment. Concern with this greater organisational complexity and requirement to understand the social phenomena within the natural environment lends itself to the interpretivist philosophy (Saunders & Lewis, 2012; Welman, Kruger, & Mitchell, 2005).

Inductive theorising is the cornerstone of qualitative research and refers to generalising from a sample to a larger population. The researcher gains observations and evidence through the research process, where a sample is researched. The researcher can then develop abstracted knowledge, based on synthesised qualitative data, which can be generalised to be applicable for the broader population. Although the qualitative data can be synthesised, doing so requires interpretation of the data. In this instance, the researchers' philosophy is especially important (Bansal, Smith, & Vaara, 2018; Mouton, 2013; Saunders & Lewis, 2012; Welman et al., 2005). This research sought to shed new light and explore new ideas on organisational transformation through ambidexterity from a leadership perspective and as such fits within the inductive research approach.

Qualitative studies are especially apt for new and understudied phenomena. It enables a broad view and lateral shifts in knowledge not always possible using deductive, quantitative research methods. Examples of qualitative research methods utilised within management studies include variance-based case studies, process studies, engaged scholarship, historical studies, discourse studies (Bansal et al., 2018; Creamer, 2018; Koll, von Wallpach, & Kreuzer, 2010). This study aimed to help leaders develop the mindset required to enable them to unlock the required dynamic capabilities within themselves as well as the rest of the organisation. Specifically, the capability to manage the structural changes required within the organisation to enable the ambidextrous environment required. This requires an explorative, qualitative approach where the context of human behaviour within a

complex system can be understood in more detail. The research was conducted within the process study genre as process studies explore emergence and transformation within different context based situations (Bansal et al., 2018; Creamer, 2018; Koll, von Wallpach, & Kreuzer, 2010).

Exploratory studies aim to seek new insights into phenomena that is not yet fully understood. Exploratory studies are well suited to qualitative research methods such as semi-structured interviews and unstructured observation (Saunders & Lewis, 2012; Welman et al., 2005). The purpose of the research design was exploratory as it was found, within the literature review, that the phenomenon was not well understood. The phenomenon refers to how leaders manage the constant flux due to the required separation and integration of organisational structure to support ambidexterity. It was also found that the phenomena required new insights and knowledge.

The chosen strategy must support the research design in answering the research question and meeting the required objectives. The relevant research questions required inductive thinking and the operationalised concepts are not measurable. The aim was also to conduct the research within organisations, which have clear boundaries. Exploratory research enables a rich understanding of the context and dynamics of the concepts and system being researched as well as the context of the activities taking place within the organisations. Data validation is of great importance within a qualitative exploratory study and data collection methods can include archive, interviews, questionnaires and observations (Eisenhardt, 1989; Saunders & Lewis, 2012). For the current research design, a qualitative, exploratory strategy was utilised to build theory and a questionnaire was utilised for data collection.

The research was conducted within a cross-sectional time horizon as the research was concerned with what is occurring at a specific point in time (Saunders & Lewis, 2012). The aim was to explore behaviour and reasoning around organisational ambidexterity and processes and capabilities required within leaders to manage the structural shifts to enable ambidexterity within the organisations. Qualitative, exploratory studies lend itself to utilising semi-structured interviews as a data gathering technique, with open-ended questions. This supports the gathering of rich data on the context of the matter and not only facts, which fits into the interpretivist

philosophy applied in the current research design (Eisenhardt, 1989; Saunders & Lewis, 2012).

4.2 Research Design

4.2.1 Population

The population can be defined as the set of participants or entities from which the sample is drawn. The selected population is specifically important as it determines the pool from which the organisations were selected. The population delineates the limits of the research findings. It also limits variation due to factors outside of the scope of the research.

The literature review revealed that the level of regulation and ambidexterity impact the leadership styles and approaches within an organisation (Leavy, 2014; Patora-Wysocka, 2017). Other factors include the size and culture of the organisation (Doz & Kosonen, 2010). To maximise the potential for overall representation, the population group then included different size organisations, organisations within a regulated and non-regulated environment, different organisational structures and cultures as well as business processes. The sample group comprised of executive-, senior-, and middle management level resources. The different levels of leadership were selected due to the fact that ambidexterity and the requirement to manage the changes in organisational structure plays out on all levels of the organisation (Kollenscher et al., 2017; Uhl-Bien & Arena, 2018).

4.2.2 Unit of analysis

The unit of analysis is the primary entity under analysis and the entity about which the researcher wants to make a specific conclusion (Saunders & Lewis, 2012; Welman et al., 2005). The unit of analysis for the specific study was the perceptions of executives and different levels of management within the identified firms. The unit is selected based on the fact that these resources constructed, executed or experienced the required change within the firms, and as such are in a position to manage the organisational or structural changes required to support ambidexterity. As such, the resources have the required knowledge, insight and exposure to the change process and requirement to enrich the data collection process.

4.2.3 Sampling method and size

Purposive sampling is a non-probabilistic sampling method and is frequently used to select a small sample for qualitative research (Saunders & Lewis, 2012). The sample group for this qualitative study was purposively selected to ensure the interviewees are able to answer the interview questions. The respondents were also from different levels of the organisation and from organisations with different cultures and business processes (as outlined above). The sample group was selected from industries currently in a transition phase where innovation and new technology has and will continue to bring about change in the industry's value creation and supply chain. This is beneficial for this study as the respondents from these industries are thus currently considering and contemplating their current business model and products and how and if these should change with the new technology.

The selected organisations include owner companies (own manufacturing), an engineering, procurement and construction management organisation as well as consulting organisation. The larger organisations were contrasted against smaller firms where the possible rate of change is faster. From the sample group; the two larger organisations have recently undergone organisational changes in anticipation of changes in market conditions. These organisations have also adopted specific leadership methodologies to support the new structures and updated business processes. The sample enabled rich data collection taking into consideration different firm sizes, structures and cultures and highlight the perception of leadership capabilities required to manage the structural changes and shifts perceived to be required to remain competitive. Following the purposive sampling technique, 11 respondents were identified and interviewed.

4.2.4 Measurement instrument

The measurement instrument was a semi-structured interview. The aim of the instrument was to enable the interviewees to convey ideas, meaning and perceptions in order to better understand the researched phenomena (Mojtahed, Nunes, Martins, & Peng, 2014). The quality of an interview can be judged on the basis of the practice followed (descriptions) as well as theoretical traditions (prescriptions of how it should be done). The practice can be validated by examining the transcripts. These elements should validate the credibility of the gathered evidence (Roulston, 2010).

The quality of the interview also depends on the interview guide. Questions should be and were asked in a manner that the respondent can best understand and were not overly complex. There should not be any leading questions; the questions should be open-ended and to support a trust environment the researcher should aim to build some rapport with the respondent (Roulston, 2010). Based on the research philosophy and methodology, it is essential to outline the background of the researcher and possible influences on the data. This ensures that there is an understanding of how the researcher's mindset can influence and enhance the research.

The validity and reliability of the measurement instrument were thus ensured by following the requirements outlined above (Welman et al., 2005). The semi-structured interview is outlined in Appendix A.

4.2.5 Data gathering process

The data gathering process is instrumental in enabling the researcher to gather information about the object of study. Following the correct process allows the researcher to gather data systematically and should fit the research philosophy and method (Mouton, 2013). However, the instrument can measure both the intended construct as well as irrelevant constructs and can also include measurement error. It is for this reason that the data gathering process followed for this research included face to face interviews and findings from literature (Welman et al., 2005).

The interview guide was constructed and refined based on analyses of the research problem and a clear understanding of what information is required from the interviewee (Welman et al., 2005). Purposive sampling was used, and respondents were eligible for the study if the respondent was on a management level of middle management or higher. The respondents also had to be part of devising the change processes, enacting or be directly influenced by these changes. The respondents were selected from organisations that differ in size, culture (such as hierarchical and creative/collaborative), value drivers and structure.

The final sample included two large organisations and two smaller organisations. Two organisations are owner based (own manufacturing), one engineering, procurement and construction organisation and one consulting organisation. Eleven respondents were identified. Three respondents are on managing director or senior vice president (SVP) level. Out of these three respondents, one was employed within a large, one in a smaller and one in a consulting organisation. Two executive managers (technical and general management) were identified from the smaller organisation and three executive managers (technical and general management) were identified from the larger organisation. Three middle management, head of departments, were also identified. The final sample consisted of four female and seven male participants. Table 2, in section 5.2, outlines the identified respondents and how they match the selection criteria.

The researcher completed an initial, pilot interview utilising the draft questionnaire guide in order to gain additional information to improve the draft where required and determine the amount of time needed for the questions. This aided in preparation for the interview (Welman et al., 2005). The only question that was modified was question one. If it was clear that the respondent was not aware of the term ambidexterity, the interviewer explained the theoretical definition and asked where the respondent could identify ambidexterity within his/her environment. This was to ensure that the respondent is comfortable with the term. If the respondent was indeed aware of the concept of ambidexterity, then question one was asked as it appears in the questionnaire measurement instrument.

The aim was to conduct 45 minute interviews at a location and time which was convenient for the respondent (Saunders & Lewis, 2012). The actual interview, indeed, took between 30 and 60 minutes, and the interviewer was able to conduct the interviews at the place of business of each of the respondents. Where a face to face interview was not possible, a video call was arranged where the interviewer and respondent could see each other. On one occasion, the connection was unstable, and the interview was conducted per voice call. Prior to the interviews, the purpose of the research was communicated to each of the respondents. This included an interview guide and a consent form. Upon confirmation of willingness to participate, a meeting request was sent.

It is crucial to ensure that the researcher does not cause the respondent to give biased or even false information. The researcher dressed in more or less the same fashion as the respondent and avoided making references that made any respondent feel excluded. Before the start of the interview, the researcher requested permission to record the interview, explained the purpose of study, informed the respondents of their voluntary participation and addressed confidentiality matters pointing out that the name and personal information about the respondent and organisation will not be published. During the interview, the researcher did not ask leading questions (Saunders & Lewis, 2012; Welman et al., 2005).

4.2.6 Analysis approach

An inductive analysis method was employed within this qualitative research, as a hypothesis is not required for the research to commence (Creswell, Hanson, Clark Plano, & Morales, 2007). In support of this analysis approach, a thematic analysis of semi-structured interviews was performed in order to identify patterns and subsequently analyse and record these patterns for each research question. This thematic approach is well suited within this study as it allows for processing and analysing of patterns as additional data is collected (Saunders & Lewis, 2012).

The inductive analysis approach thus allows for the evolving design required where there is no hypothesis available as a starting point, and the focus is on gaining maximum insight with each new interaction of the interviewees. The approach enabled the researcher to make initial observations with regards to the organisation's internal change logic, organisational structure and pattern of processes or mechanisms in place to integrate the explore and exploit functions within the organisation. Furthermore, it allowed the researcher to identify specific themes as to how leaders manage these continuous spatial and temporal changes which the organisation employs to enable ambidexterity and a sustainable, profitable organisation (Creswell et al., 2007; Saunders & Lewis, 2012).

The first step in the data analysis process was to convert the interview recordings into transcripts. The structure of the transcript was established beforehand to ensure this step can be completed efficiently. The service of an external transcriber was solicited. Once the transcripts were received, these documents were reviewed to

ensure the correct and consistent use of recording conventions as well as to ensure that the transcript reflects the interview (Saunders & Lewis, 2012). The second step was to create codes to enable further analysis and interpretation of the data.

Codes are labels that attach meaning to the raw data collected during the fieldwork. These codes are abstract enough also to include other pieces of data and organise these into categories according to particular themes. The codes enable the researcher to form a tentative proposition which can be explored further (Saunders & Lewis, 2012; Welman et al., 2005). Categories and codes were created through the ATLAS.ti qualitative research analysis software, the codes were created once all interviews were conducted and reviewed. This assisted in ensuring meaningful categories as well as appropriate codes for analysis and finally, ensuring clear data descriptors for future use. The codes could not be selected directly from literature, as this is an exploratory study, however, the codes were created based on the study up to that point, and the proposed theoretical framework in Appendix B.

The transcripts, together with the manually created codes and categories, were uploaded onto the ATLAS.ti software. In some cases, the data was grouped per the size of the organisation and seniority of respondents, in some cases grouping as per organisational ambidexterity and centralised/decentralised decision making was useful to consider the data (Saunders & Lewis, 2012). These groupings enabled analysis and comparison between change agents and impact (if any) of organisation size, ambidexterity and organisational structure. This is particularly important as depth and richness were required with regards to internal change logic and how that contributes to the organisational design to enable ambidexterity. An understanding was also required on how the leader manages the continuously changing environment.

As per the inductive approach, codes were created and categorised based on initial findings and adjusted as required based on emerging themes from insights gained from the interviews conducted. The list of codes was reviewed, and those with similar meanings were grouped into categories within the ATLAS.ti software. These categories acted as a filter to ensure only the codes from that category are visible. It also acted as a short-cut when the researcher wanted to operate only on a specific category or family (Woolf, 2012). A list of the codes is outlined in Appendix C.

The final step of data analysis was to analyse the data within the context of the literature review, and research questions and objectives to ensure the arguments offered and future findings presented are supported and logical. This ensured that the categories created provide a solid foundation for the identification of themes and themes provide a logical argument for answering the research questions (Saunders & Lewis, 2012).

4.2.7 Limitations

A qualitative, exploratory research design was followed and was not be followed up by a quantitative study, which limits the ability to draw definitive conclusions from the study (Saunders & Lewis, 2012). In addition, it should be noted that the researcher is not a trained interviewee. The sample was from organisations within the town of Secunda. Although there are different industries contained within the sample, this could skew the result towards a particular prevailing culture within the town. Input from organisations outside of Secunda can broaden the population sample result. The individuals' geographical area could present bias within the responses. However, this could be mitigated by the fact that some of the organisations do operate outside of the area and country.

The sample consists of opinions and perceptions based on the experience of senior and middle management. It is possible that the congruency of findings with reality may be impaired as the respondents answered what they deemed appropriate as opposed to providing answers that reflect reality (Lincoln, 1995). The population sample results could have been broadened by a limited number of lower-level employees to corroborate the reality within the organisation or department.

The researcher also acknowledges the possibility that findings could include the perspective of the researcher as this is the nature of qualitative research. However, every attempt was made to remain objective, with a focus of data validity and reliability (Saunders & Lewis, 2012; Welman et al., 2005).

4.3 Conclusion

The purpose of this chapter was to outline and defend the proposed research methodology and design. It commenced with an argument of why qualitative, exploratory research was conducted and continued to outline the sample population, unit of analysis, sampling method, measurement instrument, data gathering and analysis approach. The chapter concluded with the limitations of the research.

5 CHAPTER FIVE: RESULTS

5.1 Introduction

This chapter outlines the results from the study, based on the research questions as per Chapter 3. This includes an outline of the sample as well as presentation of the results. The interviews were conducted through semi-structured, in-depth interviews that took place as face-to-face as well as video- and teleconferencing. One interview was conducted through teleconferencing (due to an unstable connection for video conferencing), four through video conference and six face-to-face interviews were conducted.

5.2 Description of Sample

The table below (Table 2) outlines the experience level of each respondent as well as why each was chosen. Purposive sampling was utilised to select the respondents from different management levels as well as from organisations and business units with different cultures, structures and value drivers. Respondents were also either responsible for change activities or directly affected by it. This is to ensure the respondents are able to answer the interview questions as well as meet the objectives of the study. The study focusses on the agility required from the leader to manage the changes caused by the business requirement to be ambidextrous, specifically related to how the organisational structure changes and flows to fit a change in market conditions and thus strategy. As such, expert knowledge and experience of the technical construct was required in some cases and formed part of the selection criteria. Experience and expertise were established through the respondent's current seniority level as well as past experience. It was especially beneficial if the respondent was currently employed in an explore focussed environment but had previous experience in an exploit focussed environment; or is currently employed in an environment where integration between the two focus areas takes place.

The sample consisted of four female and seven male respondents. Three respondents were managing directors or senior vice presidents, five were technical, or general managers (two on executive director level) and three were on vice

president level. The table below outlines the reasoning for the chosen sample group. The sample also consists of four different organisations. To ensure anonymity, the organisations are referred to as organisation A, B, C and D.

Table 2: Respondent's match to Selection Criteria of Sample Group

Functional Role	Sample Unit	How respondents match the selection criteria
Managing Director/SVP	3	Management responsible for an organisation with a need to produce but currently implementing a strategy to ensure sustainability (based on changing market needs). One respondent from a large, hierarchical organisation, two from a smaller organisation. These managers are responsible for the strategy changes required for sustainability and has direct influence on organisational structures and changes and how this is managed from a leadership perspective. These managers are often sponsors for large, strategic projects and chairs the formal committees that make decisions on projects (where projects can be utilised to execute strategy). The paradox between explore and exploit and the resources that will be allocated to each usually resides within this level of the organisation.
Technical/General Manager: Executive Management (Smaller organisation)	2	Managers responsible for an environment where explore and exploit must be integrated. These managers are part of strategy development and directly involved in strategy implementation on higher levels of management. These managers are involved in and guide decisions around structural and procedural changes as well as resource allocation within their environment and how it should be changed or refocussed to support strategy. This sample unit was within smaller organisations.
Technical/General Manager: Head of department	3	Operational difficulties in strategy execution are resolved within senior management level in organisations. This level of management is the translator and liaison between strategy formulation on executive level and tactical implementation on lower levels within the organisation. Strategic decisions are translated into measurable key performance indicators and disseminated throughout the department. Executive level managers often manage, and guide processes, systems and structures and these managers are often owners of specific functions with the responsibility of daily management of these functions.

<p>Vice President/Technical/General Manager: Executive Management (Large organisation)</p>	<p>3</p>	<p>Managers responsible for an environment where explore and exploit must be integrated. These managers are part of strategy development and directly involved in strategy implementation on higher levels of management. These managers are involved in and guide decisions around structural and procedural changes as well as resource allocation within their environment and how it should be changed or refocussed to support strategy. This sample unit was within the bigger organisations.</p>
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5.3 Presentation and Analysis of the Results

The results were obtained and analysed as per the research questions presented in Chapter 3. The interview questions were mapped to the research questions for the same purpose. The research questions and interview questions are outlined below.

Table 3: Interview Questionnaire

Research Question	Interview Questions
Research Question 1: How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?	<ol style="list-style-type: none"> 1. What is your understanding of the definition of ambidexterity? 2. If it is indeed the case, how is ambidexterity part of your strategy? 3. If it is indeed the case, how is ambidexterity practised in your organisation? 4. Give an outline of your organisational structure with specific reference to how exploit and explore functions are separated. How does the structure change to support ambidexterity?
Research Question 2: What is the change process used by leaders to manage the structural shifts that enable ambidexterity?	<ol style="list-style-type: none"> 5. What formal mechanisms are used to integrate the separated explore and exploit elements of the ambidextrous organisation? 6. What informal processes and mechanisms are used to integrate the separated explore and exploit elements of the ambidextrous organisation? 7. What do you believe enables or inhibits these processes?
Research Question 3: What capabilities do leaders require to manage the structural shifts that enable ambidexterity?	<ol style="list-style-type: none"> 8. Describe the leadership style and capabilities utilised by leaders who successfully integrate the exploit and explore elements that support ambidexterity.

5.4 Research Question 1 Results

Research Question 1: How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?

The first research question sought to gain an increased understanding of how the respondent perceives the organisational change logic and where the organisation can be plotted on the explore/exploit continuum of ambidexterity. The first three

interview questions expanded on the research question to understand what factors are currently driving this within a specific environment, to understand the leaders' perception of the organisational ambidexterity. The fourth interview question aims to understand how the organisation is structured within an environment to support the changes required to enable ambidexterity.

5.4.4. Organisational Ambidexterity

The term ambidexterity is well defined within literature (Havermans et al., 2015; Tushman & O'Reilly, 2011; Uhl-Bien & Arena, 2018). However, it is not a term that is widely understood within the business environment. This was also evident in the response from the pilot interview, where the respondent noted the concern that the term was technical and not widely understood. The interview was changed as a result where the definition of the term ambidexterity was first reviewed with each respondent at the start of the interview. Once the respondent was comfortable with the term, the question was asked where each respondent sees ambidexterity within their organisation. This question was asked instead of the question of "What is your understanding of the term ambidexterity". This created context for the respondent and comfort to be able to continue with ease.

As was expected, some time was spent in each interview to first give reassurance to the respondent that they are aligned and correctly understand the meaning of the term ambidexterity. This was evident in the response of participant 6 stating "*I don't know, maybe I should check with you, that's at least my understanding*". Respondent 4 indicated there were several terms that the respondent wanted to look up in preparation for the interview. In contrast, it was found that some respondents that are currently employed in an environment that focusses more on explore were very comfortable with the term. This was also found in cases where the respondents had recently completed business school studies and thus became familiar with the term.

The main aim of the question was, however not to test the respondent's understanding of the term ambidexterity but rather to ensure all parties were aligned as to what it means and then to utilise the term as a vehicle to enable a discussion around where the organisation is on the ambidexterity continuum. This should relate

to the organisational change logic as a firm's change capabilities are embedded in their assumptions, beliefs and emergent decision rules or routines (Schweiger et al., 2016). The way the organisation views the 'world', or the market, informs the extent to which it plans to preserve or improve the current competitive advantage. One framework that can be used to plot an organisation, taking into consideration its compliance setting was outlined by Jackson & Leung (2018). How this change logic and resulting position on the continuum relates to the organisational operating model, from a theoretical perspective, is outlined in Figure 1. This framework, together with the theoretical framework as outlined in Figure 5, was then used to support the identification of themes for research question 1.

To evaluate the context of the organisation from the viewpoint of each of the respondents, the answers relating to research question 1 were grouped into three themes, namely; ambidexterity continuum, strategy and organisational structure. The aim is to be able to evaluate where the organisation is on the continuum and how this contributes to its strategy and structure. The point on the ambidexterity continuum was evaluated using the determinants of the extent of bottom-up feedback on market requirements, explore focus, a vision created, radical change and need for innovation (Leavy, 2014; Tushman & O'Reilly, 2011; Uhl-Bien & Arena, 2018). The strategy was evaluated based on the need for ambidexterity within different compliance settings (Jackson & Leung, 2018). The organisational structure was evaluated based on whether the organisation has a mainly centralised, decentralised or flexible structure and how it changes based on market requirements (Cameron & Quinn, 2011; Leavy, 2014; Tushman & O'Reilly, 2011).

The detailed results containing all relevant quotations are outlined in Appendix D. However, the salient quotations are outlined below. The first question was relevant to create the context of each respondent's environment within the respective organisations. The organisation should align internally, in terms of strategy and organisational structure, with the external or market requirements. This should inform where the organisation can be plotted on the ambidexterity continuum. The internal logic of the organisation is of importance to the ambidextrous leader as the leader

must understand the prevailing internal logic and identity of each department or individual to influence the correct strategic change.

5.4.4. Organisational Strategy

The framework used to identify the strategy of each organisation takes into consideration the degree of ambidexterity as well as compliance context (Jackson & Leung, 2018). The findings from the respondents were aligned with this framework. Where there was evidence of both explore and exploit requirements, the organisations tended to follow a symbiotic or preservation strategy, depending on the compliance requirement of the industry. In addition to its compliance setting, several respondents also highlighted the requirement to consider the organisational source of its strategic advantage. It is essential to understand if the advantage is resource based or due to economies of scale, and thus having an asset such a factory. If significant capital was already spent on building a physical asset, it is more likely for the organisation to exploit the physical asset or try and explore how to utilise it to produce new products. If the advantage is knowledge based, it is much easier to produce radical change or operate mostly on the explore end of the continuum.

Respondent one indicated:

“...a major source of competitive advantage in capital intensive industries, is the application of your capital resource, to a much lower degree the application of your knowledge resource”.

Respondent three also noted the tendency of the organisation to focus on exploit, based on the current asset based that is generating revenue:

“It is really difficult to justify testing and trying something new...struggling to move from our [operational] mindset...you look at how we are spending the money, the focus is on sustaining”.

Respondent four noted that, although the organisation had innovation strategies that were in the process of being implemented *“we still move back to the thing of saying*

but it doesn't make sense if I compare it to my historical asset, or it can't compete with our historical asset".

5.4.4. Organisational Structure

From an organisational structure perspective, it is clear that creating a spatial divide between resources focussed on explore and those focussed on exploit is required, which echoes what was found in literature. Temporal divide creates the concern that the day to day operation continuously takes the highest priority, limiting the time available to be spent on exploration. However, a secondary result is the person closest to the current business has input into future exploration and this resource is optimally positioned to identify opportunities and understands the business capabilities.

Respondent one indicated that:

"Often we will take those resources totally out of the business context, because in this office it is almost impossible to focus on doing anything new, when you are focussed on doing something in an existing manner for an existing client".

Respondent seven reiterated the finding where the respondent envisaged the role of the department as explore, however the respondent's line manager highlighted the requirement to also ensure current efficiency:

"...we're going to be at this end of the spectrum, where we will be changing things. And his first comment was, yes but, you need to protect the current".

Respondent 11 also indicated that they will *"move out"* the new venture business from the current core organisational structure. Respondent two has a *"80/20 principle. 80% of the budget and resources that I have I mainly focus on today's activities...and then 20% of the resources are used to look at exploring"*.

Respondent four indicated:

"And we'll start to look at dividing a little bit of the time but that, to me is not really sustainable. Because the minute there's a crisis, I'm going to divert back to the business of today".

Formal integration mechanisms were investigated in research question 2. However, some reference was made to it within the organisational structure discussion, and as such, these specific references are discussed within this section. Based on the response from the interviewees, there will most likely be a department responsible for integration which is more exposed to both worlds. This is dependent on the complexity of the organisation (Galbraith, 2008). Organisations with matrix structures required an integration department. Within engineering and consulting organisations this was not required as integration seemed to occur more informally and naturally.

Some of the organisations are structured such that the group responsible for integration separate their time between explore and exploit. The other functions within the organisation are split structurally between explore and exploit. There is evidence that the paradox between explore and exploit is then felt to a greater extent by these integration groups, as respondent seven indicated; *"it was actually something you were confronted with continuously"*. The respondent was referring to the balance between operation and producing now, in a stable manner, as opposed to future focus, innovation and growth. Respondent seven also indicated:

"...you get very frustrated, very demoralised when you continuously feel like you have to fight the system, fight new people and your ideas, quite often you need to protect them and say but look we are on a journey, we are improving".

The respondent is referring to having to protect the long-term initiatives as well, especially if there is an overvaluing of exploitation. Literature indicates that it is especially in these circumstances where strong leadership, clear roles and

responsibilities and prioritisation is required (Galbraith, 2008). Based on the identified gap in literature this dilemma has not yet been solved.

It was apparent that the size and complexity of the organisation certainly played a role in the ability to be agile. Each business unit must retain decision making power, the ability to prioritise and some execution ability. However, there are certain strategic imperatives that the CEO or corporate functions drive. The result is a possible lack of alignment and prioritisation as well as a slow decision-making process. Respondent seven indicated:

“And it’s a tremendous challenge, to have clear roles and accountabilities, if you have two centres from where both want to take ownership of that theme and drive the improvements, because it can only be so many budget owners, there can only be so many decision makers to ultimately make a call and say we’re pursuing A and not B, or we are implementing C and not D. So, it actually becomes very challenging”.

Respondent four also indicated that in the end, one has *“too many bosses”* which increases inefficiencies in decision making and delivery.

Respondent five noted the complexity of the situation, with a centralised structure *“your resources are all sitting in the same space and you could prioritise. It also allowed you to do both [explore and exploit]”*. The respondent was highlighting the fact that, where employees were situated within close proximity of one another, knowledge and experience can easily be shared in an informal manner. There is good information flow between explore and exploit activities. Leaders are also able to determine the business need and prioritise the resources accordingly.

If the employees responsible for exploit and explore are not within different departments, the leader can easily prioritise as the activity does not require input or alignment with another, separate department. Respondent five also noted that *“when they pulled the business development guys into corporate finance they were divorced*

from that pressure of prioritisation”; referring to the requirement for the new venture structure to clearly understand the core business requirement as well. When the new venture and core business are split it requires a more intense focus on information flow and prioritisation.

Respondent nine highlighted the benefits of a centralised approach, indicating it leads to *“alignment, overall direction and less conflict. It enables co-creation of the strategy and execution by the business unit”*. Although respondent seven indicated some frustration with a centralised approach and lack of alignment the respondent also highlighted benefits:

“If from group, from head office perspective, there are functions or structures formed to integrate and coordinate what's happening throughout the group, to avoid duplication, that makes a lot of sense. To leverage lessons learned and share what's happening and give feedback to the GEC etc. That makes a lot of sense”.

Literature indicates that a matrix structure could be required to ensure integration within a complex organisation, however it does create the requirement for duplicate structures. This was supported within practice where respondent ten indicated:

“And they are then also skilled enough to also on their own implement a little bit of the exploiting and new kind of development so we've built it as an COE [centre of excellence] at the top to support and help businesses scale but within the businesses below it there's also a structure that can do both of these things should the opportunity arise”.

Respondent five noted, *“so I feel there are pros and cons to either of those structures”*. Within literature there is mention that there should be an option of an operating model ‘somewhere in between’ (Khanagha et al., 2014) as opposed to supporting either end of the exploit/explore continuum. This supports the notion that it is imperative to identify the required position of the business on the ambidexterity

continuum and to design the structure, processes, skillsets of resources, culture and all business elements accordingly. Respondent seven indicated:

“I mean if you dream too ambitiously, if you are too far into the future into a world that's so far removed from your existing business model from your existing business construct the thing that's making the bread and butter today, you can get lost and devoid in terms of the realities of now”.

5.4.4. Summary of Research Question 1 Results

In a capital-intensive industry with high fixed cost, a centralised approach could be preferable. For global organisations this would translate into global integration in an effort to decrease fixed cost, however if there is differences and variations in products per region or local markets or if there is strong involvement of the host government in the economic process, these forces would require local intervention (Burton & Obel, 2018; Galbraith, 2008). In organisations with a projective or preservative strategy, it was evident that the organisation must thus be cognisant of current capabilities, to be able to build on these capabilities for incremental innovation. In capital intensive industries, corporate should balance the requirement to minimise fixed cost and centralise decision making with the requirement that each region or business unit should be empowered to make their own decisions, based on the industry, market, product and customer requirements.

Respondent six indicated:

“I still would like to think that structure follows strategy...so if our strategy at the moment is to contain costs, I mean that is where most of the energy will go...your structure then won't necessarily cater for a growth spurt ...[currently we can't] structure for new business...this is probably more with marketing. If you have the whole income statement to look at, then your mindset is a bit more on growth and on new things, on trying to increase the margins. Whereas, if it is more operationally focussed...you structure to ensure consistency and good discipline”.

Where there is a centralised approach, there must be a very strong vision of where the organisation is going to and how each unit fits into this plan. Formal integration mechanisms and strong leadership are key. Efficiency is gained, however the agility of each department to make decisions based on its own context is lost.

In knowledge industries, a decentralised approach is followed. This was indicated by the respondents and also echoes findings in literature. This approach is driven by low fixed cost and a requirement to be able to meet a particular market and client requirement in different regions of the country or world. A flexible structure is vital. Respondent eight indicated:

“No, what we do is we set up for a specific project a set of procedures and standards and then we work accordingly. You modify the processes and procedures to fit the client need and you have to have people that are quick in making those changes”.

Indicating how flexible work processes are in that environment. The respondent also noted:

“By deciding who is leading it and who is the names of the required persons on the job. That’s the only decision we make [as directors]. The rest is managed by the project team themselves”. “...we have to strategize the organisation to support whatever work that is available”.

They also hire in any expertise that is required for a specific project, that they do not have internally. The organisation then changes focus and structure as the client requires.

Figure 3 below is an illustration of the summary of the results of research question 1. The perception of each respondent of their business unit or organisation’s

(depending on the level of the respondent within the organisation) position on the ambidexterity continuum was plotted against their decision-making positioning, be it centralised or decentralised. The size of the circles indicates the flexibility of the organisational structure. It is expected that an ambidextrous organisation has a centralised approach within the exploit department and a decentralised approach within the explore department. The alignment between these should be done on executive level. A centralised approach within a highly ambidextrous environment requires the most substantial leadership focus, clear roles and responsibilities and prioritisation and alignment activities. This is also crucial where an organisation wants to move from low to high ambidexterity.

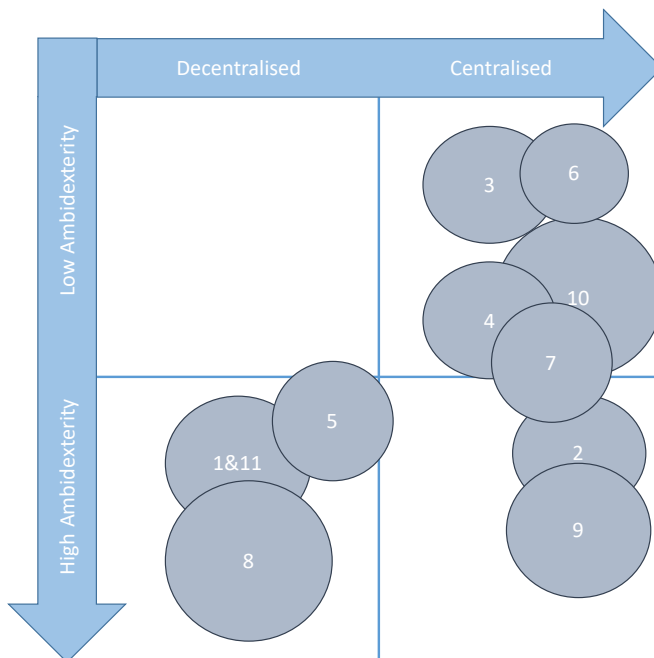


Figure 3: Summary of Research Question 1 Results

5.5 Research Question 2 Results

Research Question 2: What is the change process used by leaders to manage the structural shifts that enable ambidexterity?

The research question aimed to improve understanding of how explore or new venture departments are integrated into core business or exploit functions. Two interview questions were asked to understand what formal and informal processes the organisations and departments utilise to integrate explore and exploit focus areas. Formal processes can also relate to the previous questions pertaining to how

ambidexterity makes part of the strategy and organisational structure. These processes were either already in place, put in place by more senior managers as compared to the respondent or the respondent put these processes in place. Informal processes highlight the leader's input within the current organisational context and can also speak to the prevailing organisational or departmental culture.

The seventh's interview question asks the opposite, what inhibits the integration of the explore and exploit focusses, to invite the respondent to think about perceived failures. The detail around the perceived failures included considerations of which factors and processes worked well and which did not.

The findings were evaluated by utilising two themes, namely; formal and informal integration mechanisms by organisations along the ambidexterity continuum. The detail results are outlined in Appendix E. The respondents identified 13 formal integration mechanisms and 12 informal integration mechanisms, as outlined in Table 4. These mechanisms align with literature, as outlined in the theoretical framework in Figure 5. It is expected that complex organisations with centralised decision-making structures require more formal integration mechanisms as compared to organisations with decentralised decision-making structures. It is also expected that, at least the explore departments within an ambidextrous organisation, has decentralised decision-making structures which might require less alignment within the department, but then additional alignment with the core business. The integration mechanisms identified are outlined in the table below. The frequency indicates the number of respondents that identified the construct as a formal or informal integration mechanism. This gives an indication of utilisation by the different organisations.

Table 4: Integration Mechanisms Identified during Interview

Formal	Frequency	Informal	Frequency
Working groups	10	Culture	9
Organisational structure/Matrix/Centralised/Flat/Flexible	11	Network building	3
Roles and responsibilities	4	Collaboration	7
Intentional conflicting	2	Relationships	4
Team composition	3	Overarching vision	4
Integration function/person	5	Communication	2
Communication	1	Alignment	3
Reporting metrics/KPIs	3	Different viewpoints	4
Work processes to align/enable/institutionalise/eliciting and push ideas	11	Socialisation	2
Temporary teams	3	Team composition	2
Governance	3	Conflicting	3
Collaborative prioritisation	6	Time	5
Centralisation of decision making	4		

The mechanisms identified by most respondents are working groups, organisational structure, work processes and culture. Working groups refer to committees or forums with a specific mandate for alignment and decision making; for example, to determine which projects will get funding and what the scope of that project shall be. Organisational structures can be used for integration as it determines which resources are grouped together and what additional resources are employed for integration. Work processes refer to the managerial infrastructure and business processes in place in the organisation. This includes the processes to push and pull ideas and implementation requirements between the core business and new venture as well as to institutionalise innovations into the core business.

The integration mechanisms with the most significant potential for ambiguity and that created the most anxiety or frustration, as perceived by the respondents, appeared to be organisational structure, team composition and centralised or decentralised decision making. As such, the section below outlines results from these three constructs as well as from work processes and organisational culture. The detailed findings and quotes for both formal and informal integration mechanisms are outlined in Appendix E.

Note that communication and conflicting reports on both the formal and informal side of the table. Intentional conflicting is formal as there is a business process followed to challenge the status quo. There are also specific resources identified to play specific conflicting roles. Respondent one states; *“...some people are used to playing devil’s advocates...we are formulaic about it...So we are looking for a certain outcome, what would have to be true for us to reach that outcome?”* Whereas respondent eight perceives it as a more natural, informal process *“We always have conflict, but positive conflict. We always have different views and violent discussions...but in the end, we make decisions”*.

Communication was noted as a formal integration mechanism when there was a formal process followed or a specific routine to the communication. Respondent two indicated:

“...a communication platform and channel that needs to be reinforced to ensure there is momentum...facilitate communication...new innovative ideas and solutions emanates from those discussions”.

Communication was noted as an informal mechanism where there was no formal process followed, for example it was noted as an informal mechanism for this respondent where the respondent stated *“...and encourage people to talk [or else] you erode that communication into horizon discussions”*; referring to the fact that the different teams, focussing on either explore or exploit, revert back to only communicating within their silos.

5.5.1 Formal Integration Mechanisms

According to literature, informal coordination, has the least power to get things done and can be seen as voluntary. The more formal the process or structure, the more power and authority and the ease of getting things done also increases. The forces that will determine how formal the organisation wants to co-ordinate depends on the complexity of the business as well as the strategic importance of product development or new project execution. However, these formal process increases cost, management time required and also increases the opportunity for conflict between departments (Galbraith, 2008).

It is clear from literature as well as the findings of this study, that ambidexterity is facilitated by separating the focus on exploring and exploiting. However, in order to create the environment to facilitate the both/and solution required for ambidexterity, it is crucial that these elements are again integrated (Chen & Kannan-Narasimhan, 2015). Each leader, at every level of the organisation has a role to play in ensuring that these conflicts are managed to support the organisational strategic advantage, that tension is created such that innovation emerges. However, ultimately, the ambidexterity paradox is carried by the CEO (Kollenscher et al., 2017; Uhl-Bien & Arena, 2018). Integration cannot be based on behaviour alone, however, management tools and processes should also not be so rigid that it inhibits decision making speed and agility. It is then the role of the leader to balance the paradoxical tensions to support the strategic advantage of the organisation.

According to literature, formal integration mechanisms include performance and technical reports as well as formalised and standard planning activities (Chen & Kannan-Narasimhan, 2015). Based on organisational theory the business model dictates the organisational structure which dictates human behaviour as well as how capabilities are formed (Altmann & Lee, 2015; Cameron & Quinn, 2011; Tushman & O'Reilly, 2011), as such the organisational structure and how capabilities are formed is also considered a formal integration mechanism. The four main formal mechanisms evaluated here are team composition, work processes, organisational structure and centralised/decentralised decision making. These mechanisms were identified as frequently used but still causes some concerns when mentioned by managers.

Team Composition

The theory of dynamic capabilities is seated within the resource based view of the firm which denotes that the organisation's sustainable competitive advantage is situated in its internal resources and how these resources are utilised (Schweiger et al., 2016). This bottom-up approach requires passive management intervention and a strong focus on how resources are utilised and trained across functions (Altmann & Lee, 2015; Uhl-Bien & Arena, 2018). A key consideration for such an organisation is upskilling of resources and ensuring they understand the strategic vision and work towards it. Team composition is then considered a key integration mechanism.

The project or product teams within an organisation are customer facing and knowledge of the customer's requirements, including possible future requirements, as well as identification of opportunities to serve the client better is established and increases with each project. As the project teams are re-established for each specific project, integration takes place automatically as people are moved between different projects. Leavy (2014) found that resources are most efficient within a stable internal environment. To create this environment within the constant change required to support ambidexterity, managers must ensure a common identity and culture, must communicate a few, clear objectives and there should be deep and enduring relationships with stakeholders.

Respondent one also noted the requirement for enduring relationships and clear objectives:

“Our sales structure and our execution structure runs very deep so there will be very personal relationships between my team leads and individuals in the plant and they need to be flexible in the ways they interact. There is high level budget setting that we do [as management] which is rolled down within the organisation, but they [the project team] are then ultimately responsible for how they go and meet that”. “...it’s very customized to the clients so you are able to work on lots of different types of problems the whole time, sure the content of that work can be very repetitive...”. “Don’t underestimate, there is a lot of informal exploration that is happening as well on these projects”.

Respondent one and seven both agree that they test and employ for conceptual ability as resources are able to “*create context for themselves out of the explore discussions*”. This requirement for specific skills is also outlined in literature (Altmann & Lee, 2015; Uhl-Bien & Arena, 2018).

Respondents two, five and eight specifically note the requirement to map the resource personality and composition to the required objective. Team composition can thus play a role to develop capabilities, but the team must also be composed to ensure the current capabilities support the organisational strategic objectives. The respondents indicate that people that enjoy and excel at explore are not always the same as those that thrive in a more stable and defined exploit environment. Respondent four outlined the requirement to have a team composition with resources from different departments to ensure different viewpoints. Respondent one indicated that “*There is a minimum set of exposure to our working model that I put down on that office on day one. So, there will be somebody that knows how to price the job...*”. This also supports the notion that a new team will create new capabilities, however the team must consist of enough resources with current capabilities to support the current strategic objectives.

The required resource fluidity also translates into having the required network within the organisational ecosystem and being able to bring in the required resources from outside of the organisation (Doz & Kosonen, 2010; Leavy, 2014; Lewis et al., 2014). Respondent eight indicated:

“Depending on what type of job it is, we have 11 people inside the organisation and at least about 20 outside the organisation on short notice and then you put together a team that has the combined capability to support the objective”.

There is little formal intervention into how the organisational requirements should be met. Respondent one indicated:

“[T]he drivers are reinforcing so I don’t have to go and do anything for [person’s name] to go and run with that because it’s his own little business

area. He is fully autonomous in terms of how he goes about doing it. Meets the budget and the requirements yes”.

This supports the bottom-up approach, passive management intervention, required for ambidexterity. Where resources within a team develop dynamic capabilities to enable the strategy (Altmann & Lee, 2015; Uhl-Bien & Arena, 2018). This also relates to the formal integration mechanism of work process, where the organisation puts formal processes in place to enable resources to meet organisational objectives; this is discussed in the next section.

Work Processes

Literature outlines the requirement for leadership on each level of the organisation to manage the ambidexterity paradox as it pertains to them. Execution of this expectation should not be reliant on individual behaviour alone. The organisation should also have processes in place to ensure this occurs (Schweiger et al., 2016).

The respondents identified the use of work processes specifically to ensure that resources are enabled and aligned, that ideas are elicited and pushed between the core business and the new ventures and that learnings and innovations from the new ventures are institutionalised into the core business.

Respondent eight indicated that they “...also have, inside the organisation, a variety of processes and procedures that we can modify and adapt according to the client requirement”. They have a “good handover culture” and when there is a concern with a specific procedure, or an adjustment is required by the client they are able to adjust it the “moment” they have the issue and thereafter they “do the debrief”. Respondent two also highlighted the requirement for a “smooth handover” between the different projects as well as between front end loading and execution of a project. Respondent three explained that their organisation utilises a specific function, the technical team, as the integration function (the integration function is evaluated in more detail below) however, they still implemented specific procedures to ensure integration occurs:

“[T]hey are ultimately that link. There is still cooperation and a lead that looks after or determines the business processes for explore, the formal committee meetings or engaging that is required to do this, how do we justify projects in

that environment, how do we track and measure deliverables and the meeting thereof so we had to have a formal structure”.

Respondent 11, nine and one highlighted the requirement for work processes to ensure enabled resources. This drives activity and delivery and a broader thinking style. It also enables the institutionalisation of new innovations if the business unit owns the ideas that they developed themselves. The department which respondent ten reports into have processes in place to solicit and push ideas. They utilise a centre of excellence (“COE”) as a coordinating function. The COE also creates and rolls out the required business processes:

“[W]e’ve built it as a COE at the top to support and help business scale. But within the business below it there’s also a structure that can do both of these things [explore and exploit] should the opportunity arise”.

Respondent 11 explained that *“When you empower guys like that you give them the opportunity to chase their own budgets, so it’s a small business that he himself is running”.*

Respondent one, five and 11 all note the importance, as part of the enabling process, that decisions are made at the correct level. This enabled decision making is facilitated by a legal decision-making matrix which indicates the levels of authority. Respondent one indicated that the level at which the decision is made will depend on the size and risk of the explore activity. Respond five outlined several stage gate forums and decision committees that are utilised to align priorities and decide what projects and activities will continue. There exist specific rules, based on opportunity, risk, strategic fit and legal requirement that dictate at which level within the organisation, or at which forum, the decisions will be made. Respondent three specifically noted that in that organisation the decision-making authority was taken one level up due to cash constraints within the organisation:

“[B]y adding a level of governance or red tape will most definitely slow down this process...So it is almost as if we are trying to formalise and really govern a leg of the business that is supposed to be something that try’s a lot of different things and then comes up with one brilliant idea...”.

One dilemma that was raised was that the ambidexterity paradox sits at the highest levels of the organisation. If the decision making is not cascaded down into the organisation but remains on this level, it is possible that decisions can be more political as compared to ones taken at lower levels of the organisation. Respondent 5 explained:

“It feels to me that the higher up in the organisation you go, the more it is about alliances and the less it is about doing the right business thing”.

Another concern that was raised was the fact that, for collaborative prioritisation, the work process requires both explore and exploit projects to be taken to the same decision committee. Business units focussed on exploit will only bring their projects once they have ensured it is viable, business units focussed on explore will, inherently, be not be able to present as much detail. This makes decision making difficult and one could investigate splitting the two decision-making forums and budgets.

Organisational Structure

Within the current ever-changing environment, it is imperative that any organisation must mould its strategy to fit the changing external environment. The strategy dictates the business model and as such, the organisational structure. A business model is naturally stable and requires a specific focus to change (Doz & Kosonen, 2010; Tushman & O'Reilly, 2011). There should then be a particular focus on explore and a particular focus on exploit, to enable ambidexterity. This focus can be split by space, through spatial separation, such as into different departmental structures. It can also be split by time, through temporal separation. To support the environment required for a both/and solution, it is then also imperative to integrate the two elements again (Leavy, 2014; Uhl-Bien & Arena, 2018). For organic, flat organisational structures integration can be less formal, such as through communication. For more complex organisations where matrix structures are required, the integration should be more formal. This also increases the requirement for clear roles and responsibilities, alignment and prioritisation.

One of the organisations restructured for a new business model that cut down on overheads and rearranged the business units into a production division and a specific customer-facing division. Although this business model improved integration of management activities on the executive level, it created silos on lower levels of the organisation. Perhaps, with people having just undergone the traumatic experience of restructuring, which includes letting people go, there was a perception from the respondent that the organisation developed a culture of protecting your own patch and that employees lost some of the ownership that they had felt previously. The new organisational structure moved people from functions into operational business units (comparable to product teams), so the natural collaboration due to geographical proximity was no longer possible. They also lost some of their influencing power as the power moved to the business units. This process also increased the requirement for communication of the strategy and how each team fits into the strategy and within the new business model.

Respondent four explained:

“[W]e've been to quite a rough repositioning. You know, somebody put a statement down that said, culture eats strategy for breakfast, which is right. But if I have a culture of people willing to work together, and once I've got a strategy that, you know, I can have a discussion with you, and I can say...this is our plans for [the company] as a whole. This is where we want to go to, this is how you and your team fits in. This is how your business unit fits in. This is what the whole [organisation] looks. I think that to me is the first part to bring in collaboration, because so often, what I think has happened with the [new business model] is everybody is so very excited about their little...the space that you know, I'm going to [produce], if I'm making the wrong thing, I don't care, my job is to make, my job is not to, explore new opportunities”.

Although the business model had positive financial implications as well as created alignment on the executive level, it increased the requirement to reinforce roles and responsibilities, communication of strategy and an overarching vision.

Respondents four and six agreed that; if one structure looks at producing and the other at marketing and selling, if the higher-level management that integrates the two are too far removed from the activities, integration is difficult. As stated previously, the organisational structure and work processes will determine how decisions are made and where the decision-making power lies. It is difficult to create an explore environment if the production manager is only incentivised to be efficient, cut cost and operate in a stable manner. The explore environment cannot be created if only the product manager or sales manager and technical teams are incentivised to explore. If there is not a clear directive from the executive level management, inertia can keep change from occurring. In this case, activities must be strategy driven and all resources must have a clear idea of what the strategy is and how they fit in.

Respondent four stated:

“So, because they are not seeing why, or what the opportunity is. And there's no real incentive, I suppose, for them to chase this. Whereas, historically, you might have had [a business division]. [The business division], would have had, a managing director, and reporting to that managing director, you would have the production head and the marketing head and product development head and that type of stuff. So ultimately, that one boss could say to the production guy, but hey this is why we're looking at this, this is why we need to look at this, this is why I want you to do it. But now we have different bosses. So, it's not possible to get that alignment. That's why I say to me the strategy, as a technology manager, I should know exactly what [the organisational] strategy is...”

The respondent's concerns about, as well as support for the formal integration mechanism of forming a matrix reporting structure, follows what is outlined in literature (Burton & Obel, 2018; Galbraith, 2008). Especially within a compliance environment such a formal mechanism is required. Yet, if there is little alignment, the matrix structure also creates significant tension. Respondent seven notes:

“If there isn't buy in, in terms of a specific focus area, there is not that much support. There is only support if it is something we believe that adds value that [we] will make people available for...Everybody plays nicely together. But

if that isn't there, if there is a difference of opinion in terms of; No, but we don't think you must be working on this. Oh, no, I don't agree with your priorities, then this model doesn't work”.

Respondent five also explains that there are pros and cons to the matrix structure with decentralised decision making:

“It's going to be [high] on our project list...it may be the last thing on his project list because he's got six better opportunities. So, the areas of accountability, I think, stifles our explore”.

The respondent is referring to the fact that the business development resources were divided into the operational business units. With the power relocated to the business units, due to organisational design, the individuals have little say in priorities. They are close to the business unit and well aligned with the business unit priorities. However, these priorities are based on the operational business unit perspective which can overvalue efficiency. When the resources were sitting together, they were able to learn from each other and present a united front to oppose specific ideas.

It is then clear from the respondents that the organisational structure is dictated by the strategy. Respondents one, eight and 11 indicated that their organisations' structure is relatively flat. Integration of the explore and exploit elements as well as alignment is relatively easy and informal. Respondents four, five and seven specifically noted that complexities involved in a matrix organisation. This structure is required to ensure a particular, separated focus on explore and exploit, as well as an integration function. There was a clear requirement for 'something in between'. Where middle management can be more empowered to make decisions on how to alter the structure as per the current organisational capabilities and requirements. This result is further discussed in section 6.

The organisational structure and work processes dictate how decisions are made within the organisation; be it centralised or decentralised decision making. Efficiency and incremental innovation require a formalised structure and centralised decision making. Radical change requires decentralised decision making, smaller structures

and an experimental culture (Jackson & Leung, 2018; Leavy, 2014). Centralised and decentralised decision making as formal integration mechanisms is discussed next.

Centralised and Decentralised Decision Making

Centralisation of decision making ensures improved alignment and no duplication of structures. It can also decrease time to market for products. However, in complex organisation it can essentially increase time to market as all the viewpoints of the different departments in all the different geographical locations must first be considered and, most likely, no one solution will suit all (Galbraith, 2008). On the other hand, decentralisation, local learning, experimentation and development of dynamic capabilities prevent strategic blindspots (Uhl-Bien & Arena, 2018). However, this decentralised approach requires additional management time to ensure strategic alignment with corporate and other relevant divisions.

One of the concerns raised by respondents five, six and seven, is if the funding for a specific initiative is centralised within an organisation where each business unit is unique, it makes the request process difficult. Each business unit has processes aligned to their culture and unique requirement. The central function responsible for funding requires another type of process, together with a waiting period to ensure all business units have rolled out their specific process. These types of processes take up additional time and human resources. Respondent seven indicated:

“And there is a group that says, no, you must come and ask me for these funds. And so when we started saying fine can we have these funds, all of a sudden, that group was confronted with the absence of a process, because now they say okay hang on, you are just one hub and there are five...we need to wait for the rest to also have an equivalent, well defined set of options they want funding for”.

Respondent seven also outlines the positive impacts of centralised decision making:

“If, from group, from head office perspective, there is, there is functions formed, or their own management structures...to, again, integrate and coordinate what’s happening throughout the group, to avoid duplication, that

makes a lot of sense, to leverage lessons learned and share what's happening and give feedback to the GEC ("group executive committee").

Respondent ten also highlighted the benefit of centralised decision making as not duplicating initiatives and effort throughout the organisation. The respondent adds that:

"When you first centralise you get the processes, methodology and tools standardised, then as soon as maturity in the business starts to increase and the guys are understanding the process then you pick up the capability, the skills. You can start to decentralise to a certain extent".

Respondent nine indicated that: *"So, for me, it is important that it is centralised, and co-created by the business and executed by the businesses".*

Respondent five highlighted the requirement for centralised decision making on how resources are allocated. This is specifically for resources within the function that is responsible to integrate the explore and exploit initiatives. If the business unit manager understands the strategy and resulting requirement from the specific business unit, the manager is able to prioritise and allocate resources within the specific business unit:

"...the fact that they could interact, and they are sitting in the same [building], and you could prioritise. It also allowed you, you could do both [explore and exploit]. So, if you were in a cash constrained environment you could think up new ideas..."

If the organisational strategy is, for example, inorganic growth or more focus on renewable energy then corporate, as the centralised decision-making function, should structure for it and set a clear mandate:

"...they brought in all of the business development resources of the company that on a very high level will look at new business for the company, new business acquisitions, new fields, sustainable energy sources, where you

want to go, a little bit more playing around and explore to try and guide what our strategy should be”.

It is clear that there are many considerations and that the requirement for a centralised or decentralised structure is highly context specific. It is not only specific to an organisation, but also to a specific external market condition and moment in time within the lifespan of the organisation. Respondent five indicated; *“there must be something in between”*. This requirement supports literature indicating that middle management should be empowered. This level of management is responsible to translate the strategy and roll it out to lower levels of the organisation. Middle management is also responsible to communicate any change requirements to executive level of the organisation (Kollenscher et al., 2017).

5.5.2 Informal Integration Mechanisms

Chen & Kannan-Narasimhan (2015) outlined informal integration mechanisms including social integration, creating an overarching vision, liaison channelling, networks, temporary teams and collaborative decisions. Appelbaum et al. (2017b) reiterated the requirement for a shared vision. Galbraith (2008) highlighted e-communication as an informal integration mechanism. In addition to these integration mechanisms, the respondents also identified time, culture, conflicting and influencing skills. Neither of these is an exhaustive list.

There was a clear indication, from the respondents, that people require time to be able to explore and be creative. Respondent one indicated:

“And that you can do within the gaps that are available inside the project. So the discussions that are happening in a project meeting or on a site walk or around the coffee table I mean those are all happening as well but that is a lot less structured for and it needs to take place within the freedoms that are in the existing system”.

Even in organisations that have a strong exploit focus, there is a clear understanding of the importance of an explore or experimental culture. Respondent six indicated:

“I’m actually hoping that the current change in culture in the organisation, where hopefully more and more people are allowed to challenge and ask questions, you know, and say but can I please understand why we’re doing it this way...get people to think twice...”

Respondent five explains that *“...you need to have both an internal drive to find new...explore new areas and the external influence of things like [strategic imperatives] to drive you”*.

Respondent seven highlights the importance of ownership:

“I think we’re in a much better position to influence strategy than anybody else. So, I need to, to acknowledge also and take ownership of my ability to steer and influence strategy...”

In an organisation with a flat structure, there is a much stronger culture of accountability. Respondent eight indicates; *“We are, to a large extent, a voluntary organisation”*. Where resources ‘volunteer’ for specific assignments, teams demonstrate accountability. There already exists an explore culture in the innovative, explore function or division of an organisation. Here the focus of the department is to change or at least somewhat modify the culture of the exploit division. Respondent nine indicates:

“So, we’re just here to enable them to get to the outcome, but they own what was developed by themselves. So, out of the entire approach is to give ownership and teach people...but I think in my space, we are demanding that people have over and above the standard way of working...”

When referring to the integration of innovation into the core business, respondent ten explained *“Culture is one of the biggest stumbling blocks...[if you have a] control kind of culture then you struggle...”*

5.5.3 Summary of Research Question 2 Results

The integration mechanisms noted by most participants include committees for alignment and decision making, organisational structure, work processes and culture. The mechanisms utilised within their relevant organisations that should work yet causes anxiety, include organisational structure, team composition and centralised/decentralised decision making.

In small, knowledge-based ambidextrous organisations, with flat organisational structures, it is relatively easy to ensure that the organisational structure remains flexible. The organisation is mainly externally, or market focussed and will adjust as per the market requirements. Upskilling of resources, allocating resources to the correct projects and having the networks to insource skills as required is the focus. There is a culture of empowerment and ownership. To ensure internal stability the organisations create one identity, utilising artefacts such as office furniture as well as intangibles such as values. Within all organisations, geographical proximity had benefits to knowledge creation and sharing (which should lead to innovation).

Integration takes up more managerial time and energy for larger organisations. The culture and type of resource that is employed within the explore divisions are very different from the people employed in the exploit divisions. The work processes also differ significantly. Ultimately, it remains the responsibility of the CEO to balance the paradox. Nevertheless, the role that senior and middle management plays in balancing the paradox on their respective levels becomes more prominent. This cannot be left to the behaviour of individuals and, as such, organisations implement processes to govern the integration of explore and exploit. However, this creates duplication of structures and friction between departments. Other concerns raised by the respondents was it slowed down the decision-making process and it adds levels of governance, especially in a cash constrained environment. If the decision making is taking place at high level it becomes a political game of alliances instead of purely business decisions to balance the paradox.

Complex businesses tend to formally structure for strategic imperatives, centralise decision making, and then decentralise once a specific competency is developed within the organisation. It is imperative that the leadership understand that additional communication, strategic alignment, clarification of roles and responsibilities is

required during this time. In general, the integration mechanisms and concerns reflected those found in literature.

5.6 Research Question 3 Results

Research Question 3: What capabilities do leaders require to manage the structural shifts that enable ambidexterity?

The final research question sought to understand the capabilities utilised by leaders to integrate the explore and exploit elements of the ambidextrous organisation. The question aimed to understand what competencies are required to deal with the continuous structural changes that are required within an organisation to be ambidextrous and remain sustainable.

Literature indicates that the leader should create a safe environment, put processes in place where resources can express angst, ensure people have the required tools and resources to succeed, set clear boundaries, create a common vision and clarify strategic priorities (Appelbaum et al., 2017b; Lewis et al., 2014). Strategic goals should also identify competing demands (Uhl-Bien & Arena, 2018). Leaders should develop and implement processes for when and how collaboration is pushed or pulled between the core business and new venture. The organisation should also have the knowledge and managerial infrastructure to support a both/and solution (Chen & Kannan-Narasimhan, 2015).

The results from research question 3 were grouped into four themes, namely; the business environment, stakeholder management, empowered teams (which includes goal setting) and personal skillset.

5.6.1 Business Environment

One respondent referred to “*deliberate business interventions*” when referring to infrastructure to enable both/and solution. This can be formal or informal. Respondent one explained that:

“It is a deliberate business intervention to say that you need an opportunity for some of the explore discussions to be taking place so that this information

can disseminate. How much you can formalize, how much knowledge you can codify in your procedures in your routines inside the organization versus how much you have to leave informal, that is like a continuous type of war”.

Smaller organisations are able to manage the explore discussions in a more informal manner. Respondent one continues:

“So that is what we are looking for in our leaders, people that are able to create context for themselves out of the explore discussions that we have, because the feedback that is coming from that is informal”.

More complex organisations tend to structure for exploration, respondent eight indicated that their organisation is *“prone to structure for initiatives and challenges and hopefully also opportunities”*. There is some frustration around this as it can formalise the process to the extent of inhibiting exploration and integration. Respondent five indicated that:

“I think our company’s structure inhibits it [referring to integration]. Why do people have to fit into a structure. Create a position for him because now you’ve got that individual [with a specific capability that the organisation requires]”.

Referring to the fact that formal structures and procedures could lead to an organisation losing explore type talent. It is then perhaps the responsibility of the leaders on the respective levels to understand which structures should be formal and where one can employ informal structures and task teams. It is also the responsibility of the executives to ensure the business processes are such that the manager on that level has a platform and the requirements from management on that level can be executed if relevant.

Respondent one, four, six, ten and 11 highlighted the requirement for the leader to have business acumen and to understand the organisational risks, the competitive environment as well as the client requirements. Respondent four explained that requirement for *“good business mindset”* and not only technical skills. Respondent ten indicated:

“So you have quite a wide understanding on things like supply chain, operations, finance and things like that in that individual but the part that sits on top of the line is the ability of the individual to lift him or herself up out of the business and have what we call the helicopter view. Somebody who can understand and look from the top and see the bigger picture...at least needs one person like that who has a holistic view over the business, wide enough experience but also linking up to other thorough understanding of the whole project and the impact that it may have on business”.

The respondent also added that *“if you work in an agile way, that risk is a lot smaller, in terms of failing and the cost thereof is a lot lower”*, as the respondent was very cognisant of the cash constraints of the organisation. Respondent 11 highlighted the requirement to understand if there *“are many competitors or is it open”*, referring to the amount of competition.

Respondent seven highlighted the fact that it is the responsibility of each leader to be *“...brave enough to stand up to the system that will want to protect itself”*. The respondent added:

“The manager must protect certain people, resources, money, also by saying; No, this is what I’m doing this year to improve this situation, doesn’t matter what else happens [what other business departments require]. I need to have that balance”.

Here the respondent is specifically referring to protecting long term activities and not just focussing on short term, exploit activities. To enable this the leader must be cognisant of the current external and internal business context to be able to plan and react appropriately; *“the whole time to be cognizant, okay so where is the company now, where are my people now, [what] does the heartbeat survey look like”*. The leader must use the information to be able to motivate people and explain the macro- and microeconomic and business climate to the team.

Respondents six, nine and ten focussed on the team capabilities required within a specific business environment. Respondent nine indicated that ambidextrous organisations require different or broader skillsets. The organisation must understand where it lacks specific skillsets and how it can contract this in:

“broader thinking type individuals [not just knowledgeable in their own function]... you’re not just going to think about technical solutions; you’re going to think about the people impact, the budget impact; you’re going to think about...external environment”; “...admitting what they currently have [and don’t have and pull in the required skills]”.

5.6.2 Stakeholder Management

Due to the requirement to create an environment for a both/and solution it follows that alignment and stakeholder management, which was always of importance, might receive additional focus within an ambidextrous environment.

Informal mechanism, such as relationships and networks, are flexible and quick methods of ensuring information reaches the relevant leader. Respondent two outlined how the use of relationships supported the respondent in decision making:

“I don’t spend a lot of time at the operations but what the connections that or the networks offer ensures is that I have relevant information that comes to me from the production site to where I am. This is without having a formal process. So, having informal relationships with people to ensure that you understand what is happening in the business and that you are then able to react accordingly to make the right decisions”.

Respondent two, four, seven, eight and ten notes how collaboration, teamwork and connecting ensures different viewpoints are considered, it improves performance and creates buy-in. Respondent ten adds the specific requirement for the leader to have emotional intelligence and empathy:

“So, you need somebody with a high EQ, able to understand what impact certain decisions would have, empathy for people working in a delivery team”.

An important aspect of stakeholder management, noted by respondent three and seven, is expectation management. This is especially essential if there is a strong exploit focus within an organisation. Exploiting or standard, stable operations show immediate, predictable results. Results for explore activities vary, require constant refinement, and the end benefit is not always immediately evident. The time and effort required to constantly motivate the explore journey can create fatigue and frustration within the leader:

“[Y]ou get very frustrated, very demoralized, when you continuously feel like you need to fight the system, fight new people and your ideas quite often you need to protect them you need to say but look, we are on a journey, we are improving over time. Maybe not at the rate or the pace somebody will want us to or maybe not in the direction that’s now 100% aligned with every single individual’s view”.

It is then imperative that the business also creates processes to protect specific explore activities and ensure the organisation does not rely solely on the individual’s energy levels.

Respondent three and four also highlight the criticality of the ability to influence and persuade stakeholders. Respondent three noted:

“...ability to influence, you should be able to sell the idea, the individual should understand how to talk to the priorities of the leader that eventually needs to ...support this initiative. The ability to ...sell it as a priority”.

It is clear that the leader must understand the priorities of the business as a whole as well as how the priorities of different business units’ feeds into the overall business strategy. This enables the leader to better persuade and influence. Respondent three noted:

“She’s got to be able to say, okay, the idea you’ve come up with is not necessarily aligned with what we are doing today. But I can understand why you are doing it...”.

5.6.3 Empowered Teams

Empowering teams to make decisions is crucial within ambidextrous organisations. This is valid within the explore and exploit environment. The scope for decision making in the exploit environment is more limited to calculated risks and ensuring continuous incremental innovation while maintaining a stable environment. The scope for decision making in the explore environment is much broader and to mitigate these risks, teams take an agile approach which also increasing the risk in a stepwise manner.

Respondents three, four, nine, ten and eleven highlighted the requirement for empowered teams. Respondents two, four and eleven focussed on how goals can be set to empower teams. It is important that the leader does not micromanage and dismiss ideas, the leader must keep an open mind and let the teams go through the process and deliver results. Respondent nine indicated:

*“...willing to let an idea flow and have a conversation until you decide maybe it's not the right thing to do... I've learned to allow myself to let those conversations happen”.
[A]llow accountability to teams that are delivering”.*

Respondent ten also noted:

“[Y]ou need somebody who would understand the role that the leader is playing in enabling a team to deliver on a certain project. To not to be a manager who controls a set of people to achieve his objectives. There's a slight nuance but it's also a very important one that sometimes is a very difficult thing to do for certain individuals”.

One part of enabling these empowered teams is to have the flexible organisation structures to ensure resources can learn different skillsets and specific resources with specific skillsets can be moved to where they are most needed. Respondent five and nine highlighted this requirement. Respondent nine indicated:

“So, you need to be able to build businesses that are able to be sustainable in an ever-moving workforce environment”.

Respondent four outlined the success of the use of task teams for specific initiatives as it creates the opportunity for people to come together in a team, close the door on the other daily activities and routines and work towards a common goal.

This requirement for a common goal or vision was also highlighted by respondents two and 11. Respondent 11 indicated that the leader should create a desirable end state; this should be translated such that teams can understand how their current activities and tasks contribute to the end state. However, as stated previously, the team should be empowered to achieve the incremental milestones as they see fit, within the organisational framework. Respondent 11 indicated:

“[Y]ou need a vision of, we actually need to be doing this, because it is not a self-evident truth for everyone depending on what it looks like, your competitive environment and your clients. You need communication of, this is where we are aiming towards...you need some desired end state...wouldn't it be great if we could get here? Now you need some type of stretch target...then people must be able to see how the work they are doing now is contributing to reaching that goal somewhere in the future...so then it is with incremental changes to get to the end goal. The leader needs to create the environment where people have the freedom of 'when I'm chasing this target what do I need to do [people can determine for themselves how they get to the target]...so a little bit entrepreneurial I would say...and the environment is such that he can bring entrepreneurial [thoughts] to the table, we are flexible to accommodate this within our rough framework”.

5.6.4 Personal Skillset

The respondents indicated that, to manage the structural changes brought about within an ambidextrous organisation, leaders must be able to trust the process, even though it might not be something they are used to. The leader must be willing to operate within an uncertain environment, to attach their reputation to a project that might fail. Thus, the leader should not be risk-averse, should be curious, passionate

about improvements, see opportunities in gaps instead of failure, have energy and be able to dream about changing the world (rapid innovation).

Respondents four, six and nine focussed on how the leader must be able to utilise the team. The leader must be able to bring people together, from different environments, to work towards a common goal. Not only should the leader be able to identify the required skillsets to build the team, but the leader should also be able to harness the skillset of the current team. This is possible by getting to know the team, their specific skillsets, and how to utilise these best. It was noted that it is thus no longer about the individual's performance but rather the team performance.

Respondent four indicated the requirement that the leaders should be critical thinkers, respondent one noted the requirement for conceptual thinking and respondent seven highlighted the requirement of ownership. If the leader understands the business environment and team skill set the leaders should also take ownership to influence the business strategy:

"I think we are specifically in a much better position to influence strategy than anybody else. So, I need to acknowledge and take ownership of my ability to steer an influence strategy, and not just sit and complain about the strategy".

Respondent eight explained the importance that the leader understands the difference in personality between people that generally enjoy explore and those that enjoy exploit. Both of these types of resources should be respected, both must be given 'airtime'; their inputs must be sought out and valued:

"It's critically important to understand that they are different. The explore and exploit people are different. You must respect both, and you have to make them both feel important because they are important, and you have to give them airtime, but you also have to manage them".

5.6.5 Summary of Research Question 3 Results

Research question 3 sought to understand how leaders deal with the constant changes required in the organisational structure, to support ambidexterity. The results from research question 3 were grouped into four themes. The themes were the business environment, stakeholder management, empowered teams and personal skillset of the manager. The findings from this research question align with literature.

Respondents noted processes required to push and pull collaboration between the core business and new ventures. In some organisations these are informal, and in more complex organisations these processes are mostly very formal. Formal processes are required due to the interconnectivity of the business. However, it also creates a lack of alignment between divisions and subsequent frustration. The frustration is due to uncertainty around priorities, double work due to duplicate reporting structures and, to an extent, loss of decision-making power. There is also evidence where, even in the larger organisations, structures have been changed to fit the current environment, or adjusted if it was not deemed to work well enough. However, in larger organisations the decision to make the change as well as the execution of the changes tend to take long.

The results from this research question indicate that the leader must understand the business environment to deal with the changes required for ambidexterity. The respondents noted that leaders must have business acumen to understand the internal and external context of the business, the specific risks, competitive environment and client requirement. This will ensure the leaders can support the strategic imperatives within their decision-making processes. It will also ensure that the leader has an understanding of the changes made by executive management. Respondents also noted the requirement that leaders must take ownership of strategy. If changes made or the strategy followed does not align with the current capabilities of the division or the market sentiment, the manager must communicate this. This is crucial as middle management is in the best position to determine this.

Stakeholder management was identified as crucial to ambidextrous organisations. The leader must be able to manage expectations, especially in an exploit focussed organisation. This is due to the uncertainty inherent to explore activities as opposed

to exploit activities. The leader must understand the priorities of their own environment as well as others in order to priorities work to support the overall business strategy. This will also enable the leader to influence and persuade other stakeholders, based on their priorities. Proper stakeholder management, teamwork and collaboration can lead to increased innovation, improved performance and a more stable internal environment amidst the changes.

Empowering teams was highlighted as a way that leaders deal with the ever-changing environment. Even if it is not the natural inclination of the leader, they should trust the work process and the team to deliver the results. To empower the team, the leader might have to shift around resources either to build their skillsets or to utilise their specific skillset within a specific environment. The leader will set the end goal; however, the team will determine the incremental milestones and how the achieve these. The leader cannot be controlling or micromanage.

The respondents identified aspects that they perceive enables a leader to manage the structural changes required to support ambidextrous organisations. These aspects include: understand explore and exploit resources are different and be able to respect and manage them, trust the team and the process, be a critical and conceptual thinker, risk taker, can work in uncertainty, passionate about improvement, see opportunity in gaps, ownership of the business strategy, dreamer, ability to build the required team with the required skillset, be able to harness the skillset of the team and be open minded.

5.7 Conclusion

Chapter five outlined the results from the study, based on the research questions. The research questions were outlined in Chapter three. The Chapter also outlined the sample and how the selected respondents match the selection criteria. Research question 1 sought to understand how the elements of the internal change logic of the organisation contribute to the organisational structure.

The results were grouped into themes, namely; the position of the organisation on the ambidexterity continuum, the organisational strategy and the organisational structure. These themes were used to evaluate the context of the organisation. It was

found that ambidextrous organisations require a centralised decision-making structure for their exploit divisions, however the explore divisions must be structured for decentralised decision making. The alignment between explore and exploit still takes place on CEO level. If the organisation has a centralised decision-making structure with some explore functions it is crucial that the organisation have strong leadership, clear roles and responsibilities and prioritisation.

Research question 2 identified formal and informal integration mechanisms, to integrate the explore and exploit divisions within an organisation. The mechanisms that were identified by most respondents includes committees for alignment and decision making, organisational structure, work processes and culture. The mechanisms that were utilised by most organisations and yet caused anxiety were identified as the organisational structure, team composition and centralised or decentralised decision making. Flat, organic organisations mostly utilise informal integration mechanisms. These mechanisms rely heavily on managerial time and behaviour.

More sophisticated organisations, especially in matrix organisations, structure for integration. The organisational structure includes a division with the responsibility to integrate the new venture with the core business. These organisations also have formal processes in place to ensure integration does not rely on the behaviour of people. These structures and processes, however, also increase time required for integration and can hinder agility and empowerment.

Research question 3 sought to understand how leaders deal with the constant structural change required to support ambidexterity. The research question was evaluated based on the business environment understanding of the leader, stakeholder management, empowerment of teams and the leader's personal skillset. It was found that the leader must understand the strategy of the organisation, the risks, market opportunities and competitive environment. The leader must also comprehend the priorities of their own and the other departments, as well as how these priorities relate to one another. This enables the leader to influence other managers as well as understand why executive management is making specific

changes. This understanding supports decision making and communication to the team.

Excellent stakeholder management, relationship and network building helps the manager in gathering information in the decision-making process. Collaboration, connecting and teamwork creates buy-in and ensures viewpoints from different perspectives which improved performance. In addition to stakeholder management it was also found that the leader must be able to manage expectations. Explore activities are inherently uncertain and results will vary. The results from exploit activities are often predictable and easily quantifiable. The leader must be able to manage the expectations around results from explore activities to minimise the pressure from executive management and other disciplines and divisions.

6 CHAPTER SIX: DISCUSSION OF RESULTS

6.1 Introduction

The research results are analysed and discussed in detail in this chapter. The context for the findings is the literature review outlined in Chapter two. To answer the research questions outlined in Chapter three, the analysis of the results includes the findings as outlined in Chapter five and the literature review. The literature review introduced an understanding of the concepts and constructs and the findings in Chapter five created an enhanced understanding of the current organisational design for ambidexterity and the obstacles faced by leaders due to the ubiquitous requirement for change from the extant firm. Through this augmentation, the research study seeks to enhance the understanding of how leaders of today can manage the constant change in the organisational structure required to support an ambidextrous organisation.

6.2 Research Question 1 Discussion of Results

Research question 1: How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?

Ambidexterity can be defined, within ambidexterity literature, as the dual capacity for efficiency and exploiting current markets as well as developing new products through innovation (Uhl-Bien & Arena, 2018). The construct can also be defined in terms of a paradox, where the organisation is able to host ‘multiple, internally inconsistent architectures, competencies and cultures’ (Tushman & O’Reilly, 2011). Organisational theory puts forth the definition of ambidexterity as the organisation having a dual operating system, being able to manage the current business processes as well as having the ability to adapt to a changing environment (Havermans et al., 2015).

The ambidextrous nature of the organisation ultimately influences how it deals with change, which is referred to as its change logic. Change logic is defined as the emergent decision rules, the internal, unwritten assumptions and beliefs held by the organisation regarding change. It also refers to how learning takes place (for

example, through experimentation) (Schweiger et al., 2016). It is exceedingly difficult for a person to balance the ambidexterity paradox, as such, management put systems and structures in place to manage a specific ambidextrous expectation. Ambidexterity can be achieved by running dual operating systems with an integration mechanism (Leavy, 2014). Management also often separates the focus on each element of the paradox through temporal or spatial separation where different business divisions focus on explore and exploit or the same team has a sequential focus on explore and then exploit (Tushman & Euchner, 2015; Uhl-Bien & Arena, 2018).

Subsequently, the first research question sought to gain an increased understanding of how the respondents perceive the organisational change logic and where the organisation can be plotted on the explore/exploit continuum of ambidexterity. The first three interview questions expanded on the research question to; ensure that the respondent understands the construct of ambidexterity, that it is evident in the organisation and relevant department and that the respondent understands how ambidexterity can be perceived in the organisational strategy. The fourth interview question aimed to understand how the organisation is structured within an environment to support the changes required to enable ambidexterity. From this information, it was possible to understand how organisations are structured to support ambidexterity and if it relates to their perceived point on the ambidextrous continuum.

The findings in chapter five were evaluated based on three themes, namely; ambidexterity continuum, strategy and organisational structure. The point on the ambidexterity continuum was evaluated using the determinants of the extent of bottom-up feedback of market requirements, explore focus, a vision created, radical change and need for innovation (Leavy, 2014; Tushman & O'Reilly, 2011; Uhl-Bien & Arena, 2018). The strategy was evaluated based on the need for ambidexterity within different compliance settings (Jackson & Leung, 2018). The organisational structure was evaluated based on if the organisation has a mainly centralised, decentralised or flexible structure and how it changes based on market requirements (Cameron & Quinn, 2011; Leavy, 2014; Tushman & O'Reilly, 2011).

Organisations focussed on exploit will most likely follow a centralised decision-making process and structure accordingly. In industries where the external market is turbulent, organisations require smaller, decentralised structures (Doz & Kosonen, 2010; Tushman & O'Reilly, 1999). Respondent six aptly put it "*I'd still like to believe that structure follows strategy*". Indeed, an organisation is designed to ensure that, based on the external environment, all internal elements are aligned to ensure a strategic advantage (Cummings & Worley, 2015). There are thus many elements to align to determine the organisational structure. As such, the results from research question one was summarised within a framework depicting the decision-making structure (centralised or decentralised) against where the organisation is perceived on the continuum. The size of the bubble representing the organisation illustrates the capacity or flexibility to change the organisational structure, as per Figure 3.

It was found that four respondents perceived themselves to be working in an organisation or department with decentralised decision-making structures. These were mostly the smaller, services organisations as well as the business development department within a larger organisation, which has a strategy to grow through mergers and acquisitions. These were also the organisations and departments that rated as ambidextrous. These findings are aligned with literature. One respondent perceived the relevant department to have low ambidexterity as it is currently focussing on explore only. The respondent did indicate that this will be amended as the maturity and skillset of the organisation increases. Centralised decision making can be used until the required decision-making skills have increased throughout the organisation; however, the department should be set-up in such a way that it can immediately identify when this is the case and the decentralise. The department should also be cognisant of the fact that this structure could create frustration and misalignment with the core business (Galbraith, 2008).

The centralised approach is also prevalent in capital intensive industries, to drive down fixed cost, however if there are substantial variations in products sold to regional markets or if there is strong involvement of the host government in the economic process, it will require a decentralised approach (Burton & Obel, 2018;

Galbraith, 2008). This is the reason for the decentralised approach of the relevant department or organisation of respondents two and nine, which is also in line with literature.

The framework developed by Jackson & Leung (2018) was used to identify the specific strategies of the organisations. It outlined different strategies for organisations within a high and low compliance setting, as well as within a high and low ambidexterity setting. The organisations follow a transformative (low compliance, high ambidexterity), projective (high compliance, low ambidexterity), symbiotic (low compliance, high ambidexterity) or preservative (high compliance, high ambidexterity) strategy. The findings indicated that organisations that followed a projective or preservative strategy should focus on their current capabilities to be able to build on these capabilities for incremental innovation. In capital intensive industries, corporate should balance the requirement to minimise fixed cost and centralise decision making with the requirement that each region or business unit should be empowered to make their own decisions, based on the industry, market, product and customer requirements. Decentralising specific decisions increases the speed and efficiency of decision making, in line with ambidexterity literature (Uhl-Bien & Arena, 2018).

For organisations with a centralised decision-making approach, it was clear that these organisations should have a stronger future vision which should be disseminated through the organisation. It was also clear that each department must understand how it plays a role in this vision. Formal integration mechanisms and strong leadership are key aspects. Knowledge industries are more flexible, which suits the decentralised decision-making approach where processes and procedures are easily updated as per the client or project requirement.

6.3 Research Question 2 Discussion of Results

Research question 2: What is the change process used by leaders to manage the structural shifts that enable ambidexterity?

Management on each level of the organisation must be able to manage the paradoxical stresses, the continuous tensions between explore and exploit, to enable ambidexterity. To enable this, organisations separate focus through temporal and spatial separation of teams. However, to enable the both/and solution required for ambidexterity, it is imperative that organisations must have processes in place to reintegrate the separated elements. Research question two aimed to identify how organisations integrate the core business and new venture elements. The respondents were asked to identify the formal and informal integration mechanisms utilised in their departments and organisations to integrate explore and exploit focus areas. Formal integration processes highlight what is in place in the organisation, it makes up the current organisational context. Informal processes should highlight the leader's input within the current organisational context and can also speak to the prevailing organisational or departmental culture.

The final question for this section asked the opposite; what inhibits the integration of the explore and exploit focusses. This question was asked to invite the respondent to think about perceived failures. The detail around the perceived failures included considerations of which factors and processes worked well and which did not. The results were then evaluated within these two themes of formal and informal integration mechanisms. The respondents identified 13 formal and 12 informal integration mechanisms.

6.3.1 Formal Integration Mechanisms

According to Galbraith (2008) formal coordination mechanisms have more power and authority to get things done when compared to informal mechanisms. The factors that influence the decision are complexity of the business as well as strategic importance of product development or new execution of projects. These formal processes, however, also increase cost as it calls for duplication of structures or

additional structures for integration. It also increases the possibility of conflict between departments.

Formal mechanisms increase the requirement for leadership intervention, alignment and communication of the overarching vision. It is the incumbent upon each leader, on each relevant level of the organisation to communicate the vision and translate this into the objectives for the specific department or team, to create the tension required for innovation to emerge (Kollenscher et al., 2017; Uhl-Bien & Arena, 2018). It is also incumbent upon each leader to create the environment the organisation requires for its strategy. The environment must support the required point on the ambidexterity continuum. Due to the fact that this requirement is cascaded down into the organisation, the organisation cannot depend on the behaviour of individuals. Management infrastructure, tools and processes should be put in place to ensure integration occurs on each level. These processes should also not be so rigid that it inhibits decision making speed and agility. It is then the role of the leader to balance the paradoxical tensions to support the strategic advantage of the organisation (Kollenscher et al., 2017).

Formal integration is possible through reporting, such as technical and performance reports, as well as formalised and standard planning activities (Chen & Kannan-Narasimhan, 2015). A specific organisational structure and how capabilities are formed also facilitates integration. This is based on organisational theory which dictates that the business model informs the organisational structure which dictates human behaviour as well as how capabilities are formed (Altmann & Lee, 2015; Cameron & Quinn, 2011; Tushman & O'Reilly, 2011). The formal integration mechanisms were outlined in Table 4. The four main mechanisms discussed are team composition, work processes, organisational structure and centralised/decentralised decision making.

It was found that in small, knowledge-based organisations, with flat organisational structures, it is relatively easy to ensure integration. The organisational structures are flexible. There is a specific core set of rules also referred to as the organisational framework that must be adhered to and the teams are empowered to make decisions and determine the rest. The organisations are externally, or market focussed, and

processes and procedures are updated as per the client or project requirement. Managers are focussed on the teams, their capabilities, matching these to the projects and also upskilling through exposure to different projects. Where the organisations require a different skillset, the respondent reported that leaders should have the networks required to contract these in.

As such, teams are empowered to learn the capabilities, to implement the innovations required, to meet the strategic objectives or stretch targets set forth by senior management. There is a culture of empowerment and ownership. With this amount of constant change, internal stability is required for resources to work efficiently. This is ensured by creating one identity, utilising artefacts such as office furniture as well as intangibles such as values. Within all organisations, geographical proximity had benefits to knowledge creation and sharing (which should lead to innovation).

Integration takes up more managerial time and energy for larger organisations as these organisations are generally more complex, and there are more stakeholders to consider. It was clear from the findings that the role that senior and middle management plays in balancing the paradox on their respective levels becomes more prominent in larger organisations. It falls to these managers to translate and communicate the overarching vision into their departments, it is also within their mandate to create the required environment. This is required even though it might not come naturally to each manager or the manager might still be in the process of acquiring the required skillset. Respondents noted that it is a learned skillset, and they had to learn to trust the process.

As such, it makes sense that organisations implement processes to govern the integration of the explore and exploit elements. Respondents noted additional red tape and governance as well as funds that were moved a level up to a department created to implement a specific strategic imperative. This created duplication of structures and friction between departments. Other concerns raised by the respondents was it slowed down the decision-making process, and it adds levels of governance, which decreases efficiency and adds to frustration, especially in a cash constrained environment. The respondents also noted the concern that if the

decision making takes place at a too high level, it becomes a political game of alliances instead of purely business decisions to balance the paradox.

It was clear that complex businesses tend to formally structure for strategic imperatives, centralise decision making, and then decentralise once a specific competency is developed within the organisation. It is imperative that the leadership must understand that additional communication, strategic alignment, clarification of roles and responsibilities is required during this time. In general, the integration mechanisms and concerns reflected those found in literature.

One of the most significant executive management dilemmas to solve in an organisation that functions more to the exploit end of the continuum is to find the correct pace, intensity and rate of exploration (Tushman & Euchner, 2015). It is incumbent upon leaders within the organisation to *“take ownership of [their] ability to steer and influence strategy”*. This supports executive management to understand the capabilities within the organisation, as well as the external environment that each level of manager is exposed to. Executive management can then better relate this to their vision of the organisational strategy (Altmann & Lee, 2015).

6.3.2 Informal Integration Mechanisms

Different organisations achieve different levels of internal complexity. The complexity and turbulence of the external environment also differs together with the specific point of the organisation on the ambidexterity continuum. Based on these complexities, managers can utilise a specific set of informal integration mechanisms. More complex situation could require stimulating group discussions with diverse disciplines, boundary spanning, creating a culture where mistakes are accepted, valuing diversity and connectedness and giving freedom to innovate (Havermans et al., 2015)

The senior team should thus be able to accommodate two very distinct and different cultures. One of exploration and freedom to make mistakes, and one of exploit, discipline and continuity (Tushman & Euchner, 2015). It is evident that the integration causes tensions. To minimise tensions, it was found that management should proactively identify and raise tensions, avoid traps of anxiety and defensiveness and

consistently communicate a both/and vision (Lewis et al., 2014). The study completed by Srivastava & Jain (2017) on self-organised teams echo the requirement for communication and also indicate the requirement for management to be as committed to the people as they are to the task.

The findings outlined in chapter five indicated that the respondents identified 12 informal integration mechanisms. The mechanisms that were identified by most respondents include culture, collaboration, time, overarching vision, seeking different viewpoints and relationships. In the more ambidextrous organisations, there was a clear culture of experimentation and allowing mistakes. However, in capital intensive organisations which were less ambidextrous, there was not. Especially in the case where the organisation was operating in a cash constrained environment. Although respondents noted the important requirement that explore activities be 'protected' they noted very little room for error. In these cases, it seems senior management is not always able to balance the paradox or communicate the priorities to all departments. As previously noted, in these cases, leaders must take ownership to communicate concerns and opportunities to executive management to rectify any misalignment.

Leaders certainly made use of informal mechanisms as it pertains to the complexity of their environment, increased complexity in the business environment, increases the number of stakeholders that must be involved and boundaries that must be spanned. Respondents noted the amount of time spent on building relationships. Indicating how face-to-face interaction was still a necessity even if it requires monthly business trips. Respondents also noted their focus on putting together the optimal team for the task and thereafter being constantly cognisant of where the organisation is, where the team is, having one-on-one discussions to ensure upskilling and continuous growth.

6.4 Research Question 3 Discussion of Results

Research Question 3: What capabilities do leaders require to manage the structural shifts that enable ambidexterity?

According to the gap identified in literature, it is not clear how leaders manage the changes in organisational structures required to support ambidexterity (Salas Vallina et al., 2019). Research question three aimed to enhance the understanding of the capabilities utilised by leaders to manage these required changes to integrate the explore and exploit elements. The question was asked to illuminate the competencies required to deal with the constant structural changes within the ambidextrous organisation.

One can relate some of the informal integration mechanisms to this section as these mechanisms are the prerogative of the leader, influenced by the specific organisational environment. To support their teams in dealing with the constant change leaders should create a shared vision, ensure people have the resources, skills and tools required to execute the works, there should also be processes available to resources to express angst (Appelbaum et al., 2017b; Lewis et al., 2014). Leaders should also clarify strategic priorities and ensure they identify and manage the competing demands inherent within their specified goals (Uhl-Bien & Arena, 2018). The organisation should not rely solely on the discretion of the leader, there should be knowledge and managerial infrastructure in place to push solutions to the core business and pull the required information into the new venture (Chen & Kannan-Narasimhan, 2015)

The results from research question 3 were configured into four themes namely, the business environment, stakeholder management, empowered teams (which includes goal setting) and the personal skillsets that leaders require.

Firstly, leaders must have business acumen. This is required to understand the internal and external organisational environment, specific risks, competitive environment, client requirements or possibly government policy changes. Although this sounds like an obvious requirement, this might not always be the case in a technical environment such as R&T. Business acumen allows leaders to translate

the strategic vision and support them in making decisions in a decentralised decision-making structure. In a centralised decision-making structure, it enables the leader to question the current strategy where relevant.

Respondents did note the existence of procedures to push and pull information between the core business and new ventures. In more complex businesses, these processes are more formal and does create frustration and lack of alignment. However, it is required due to the interconnectivity and interdependency of the organisation. Interestingly, there was ample evidence of changes in structure to fit the external organisation, even in larger organisations. Unfortunately, these changes tended to take long, initially in the decision making and later in the execution. However, respondents were able to relate the change requirement back to strategy and thus communicate the requirements to their teams to facilitate the change process.

Stakeholder management was identified as the second theme and crucial to ambidextrous organisations. Specifically, it was identified that expectation management and the ability to influence is crucial for the leader to be able to manage constant change. Expectation management is vital due to the uncertainty inherent to explore activities. The cost, timeframe and gains from exploit activities are relatively easy to quantify. Explore activities are less defined, takes longer and the opportunity cannot be guaranteed. Expectation management will minimise the pressure from executive management, and other departments, on the team.

The leader must be able to understand the priorities of their environment as well as other departments to influence management to support explore activities. This is also required to be able to defend the current explore activities, to ensure it is not stopped and resources removed. Defending explore activities was found to be of greatest importance in organisations which over valued exploit activities. Stakeholder management, teamwork and collaboration lead to increased innovation and effectiveness. It also enhances understanding of how each department fits into the strategic imperatives which makes the flow and changes of resources easy to support. In essence, it creates a stable internal environment with external agility.

The third theme is empowering teams. The focus of the leader should be on assembling a team with the right skillset for the task, also to be able to source in skills where required. The leader should also be focussed on developing and enhancing the skillsets of resources by giving them exposure to different projects and tasks as this enhances the organisational capabilities. The leader should then trust the process (business process for innovation or execution or handover) even if it is not the natural inclination of the leader. The leader must enable and then trust the team to deliver results within the governance framework of the organisation.

The personal skillset of the leader that is able to manage the structural changes required to support ambidextrous organisations was identified to include; understand explore and exploit resources are different and be able to respect and manage them, trust the team and the process, critical and conceptual thinker, risk taker, can work in uncertainty, passionate about improvement, see opportunity in gaps, ownership of the business strategy, dreamer, ability to build the required team with the required skillset, be able to harness the skillset of the team and be open-minded.

6.5 Conclusion

Chapter six outlined the results from the qualitative exploratory study conducted to answer the three research questions namely; ‘How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?’, ‘What is the change process used by leaders to manage the structural shifts that enable ambidexterity?’ and ‘What capabilities do leaders require to manage the structural shifts that enable ambidexterity?’.

It was found that highly ambidextrous organisations should utilise a centralised decision-making approach within their exploit departments and decentralised approach within their explore departments. The integration of these departments is of great importance and ultimately resides within the CEO. An ambidextrous organisation with a centralised decision-making approach requires strong leadership, clear roles and responsibilities and prioritisation. This communication comes from the CEO and must be rolled out to all levels within the organisation.

Respondents specifically noted that if decisions are made on a level higher than required, the decision making can become political. As such, it is imperative to ensure the decision making occurs on the correct level. It has been noted that centralised decision making is required if there exists a lack of specific skills or to ensure alignment and dissemination of lessons learned however, the results show that if decisions are not made at the right level or within the correct department, it does cause frustration and additional time required for alignment. In that case, the approach should be evaluated and adjusted to be more decentralised.

Centralised decision making in an organisation that overvalues exploit activities puts the continuity of explore activities at risk. Based on the interviews, there is a clear requirement for a 'something in between' organisational structure which calls for a flexible structure determined by middle-management. This echoes literature and architectural leadership requirements within the ambidextrous organisation. The results from the study highlight the requirement for ownership by middle management, to challenge the strategy based on their knowledge of the department's capabilities as well as market opportunities. In general, it was found that people have to become more adaptable, this includes employees that are currently employed within the exploit environment.

It was found that organisations realise they must adapt but for high compliance, capital intensive industries the question remains at what rate, intensity and pace. This is question that middle management is well positioned to answer. Middle management must be able to voice concerns but also adapt to new strategies. Senior and executive management must have infrastructure in place to take on board and adjust the organisational strategy according to bottom-up feedback.

Throughout all this change one of the most critical integration mechanisms was found to be collaborative prioritisation. This ensures that all departments understand the organisational objectives and how each department must support these objectives. This focus on a common goal moves the focus away from individual areas or departments. Importantly, prioritisation requires teams to stop working on certain projects in order to spend sufficient time on high priority work. Clear alignment

enables this halting of work as all departments align on what will be halted and what projects will continue. It is imperative to enable teams and departments to make these types of decisions at the correct level within the organisation.

It was also found that not all interaction between departments should be formal, as this stifles innovation. Leaders must prioritise activities to make time for relationship building, network building and boundary spanning, as it is the ability to interact in this informal manner that also enables innovation. The results also highlighted specific skillsets that leaders use to manage the constant change, such as seeing opportunity in the gaps, having ownership of the strategy and being a critical and conceptual thinker. From the interviews it was evident that leaders have been managing the change in structure for some time, however in recent times the rate of change as well as the complexity of internal and external environment has increased. This increases the pressure on leaders to adapt accordingly.

The theoretical framework was updated based on the findings of the study and is outlined in Figure 4 in section 7. Chapter seven also outlines the conclusion of the study.

7 CHAPTER SEVEN: CONCLUSION

7.1 Introduction

The principal findings and outcomes, aligned with the research study objectives, are outlined in this chapter. A theoretical framework was introduced in chapter two. It was determined that although literature defines ambidexterity, different operating models, integration mechanisms and possible organisational structures, there is a gap in understanding what capabilities leaders require in dealing with the constant structural changes required to support ambidexterity. The aim was to build on the current framework that outlines how to integrate exploit and explore elements and conceptualise a model which includes the leadership capabilities required to manage the changes required for ambidexterity and integration. The updated framework is presented in this chapter. The framework was enriched and solidified through the data gathering process, findings and insights as outlined in chapters four, five and six. This chapter also outlines recommendations to management, based on the findings. The limitations of the research and considerations for possible future research are also outlined.

7.2 Principal Findings

The literature review highlighted the ubiquitous nature of change for firms in the current world of globalisation and new technologies. It was also clear that many firms continue to operate within their current, stable, business model of efficiency (Leavy, 2014; Lyons et al., 2011). This is especially true in regulated industries where long-run profitability is still possible through incremental innovation (Jackson & Leung, 2018; Leavy, 2014). It is then important to consider that innovation and change are required for sustained profitability but also that ambidexterity should not be conceptualised as having to be at either end of a spectrum, but rather as a continuum where the organisation must ensure it is positioned correctly (Uhl-Bien & Arena, 2018).

To remain relevant, organisations can utilise the ambidexterity continuum as a vehicle to understand the current organisational change logic and required future strategy. However, explore and exploit require very different processes, structures, cultures and leadership styles. (Kollenscher et al., 2017; Kotter, 1995; Leavy, 2014).

The organisation must be able to balance the requirement of internal stability and external agility. When considering the organisational structure required to support ambidexterity, organisations currently utilise temporal and spatial division for focus between explore and exploit activities. Thereafter the elements are integrated to ensure a both/and solution (Chen & Kannan-Narasimhan, 2015; Uhl-Bien & Arena, 2018).

Thus, literature defined ambidexterity and the required processes on organisational, team and individual level. The operating models required for each of the explore and exploit elements is also defined within literature as well as required leadership styles to enable an adaptive environment (Kollenscher et al., 2017; Uhl-Bien & Arena, 2018). However, what is not well understood is what capabilities is required by leaders to deal with the continuous structural changes prescribed by ambidexterity theory (Salas Vallina et al., 2019). This research study is situated in the theory of ambidexterity as well as organisational design theory. Effective ambidexterity requires management to be aware of many elements within an interconnected network and to ensure these elements are continuously aligned as the internal and external environment changes.

The aim of the study was to conceptualise a model, outlining and contextualising the capabilities that leaders require to manage the structural changes required within an organisation. These changes are essential to sustained organisational success. Organisational design theory provided a lens to contextualise how the organisation can be viewed, which informs the business model, structure and change processes of the organisation. The theory of organisational ambidexterity provides a perspective on how explore and exploit processes, learnings and capability building are prioritised within an organisation.

7.2.1 How the organisational change logic contributes to the structure

The first research question sought to illuminate how the organisational change logic of the respective organisations and departments, and where the organisation is plotted on the ambidexterity continuum contributes to the organisational structure. Organisations and departments that rated as ambidextrous are structured to have both centralised and decentralised decision-making structures. The smaller, services

organisations, as well as the business development department in a large organisation (with strategy to grow through mergers and acquisitions) had decentralised decision-making structures. Larger, exploit focussed, capital intensive organisations tended to have centralised decision-making structures, even for the explore teams. These organisations formally structured for change. Respondents indicated that the decision making is central initially and later transforms to become decentralised as the new skillset is adopted by the organisation as a whole. These organisations tend to follow projective or preservative strategies, to focus on their current capabilities and build on these through incremental innovation. In these cases, executive managers should balance the requirement to minimise fixed cost, create stability and centralise decision making with the requirement to enable regional business units to serve their markets best. These organisations require a future vision which is disseminated throughout the organisation. Clear roles and responsibilities, strong leadership and formal integration mechanisms are vital.

7.2.2 Change Process to Manage the Structural Shifts for Ambidexterity

Management, on each level within the organisation, must be able to balance the paradoxical stresses and continuous tensions between explore and exploit. To enable this, organisations structure to focus on each element separately and thereafter integrate. This research question aimed to understand how organisations integrate the separate elements, specifically, what formal and informal mechanisms are utilised within the respective organisations and business units. The mechanisms that the respondents identified were grouped into themes and incorporated into the updated framework in Figure 4.

7.2.3 Leadership Capabilities to Manage Structural Shifts

The final research questions sought to explore the gap identified within literature and illuminate how leaders manage the constant structural changes required for ambidexterity. There were four specific themes that emanated from the findings, namely; business environment, stakeholder management, empowered teams (which includes goal setting) and the personal skillset that the leader requires.

To understand the business environment, the leader requires business acumen. This is also required from technical managers. Leaders must understand the internal organisational environment as well as specific risks, the competitive environment, client requirements and changes such as governmental policy changes (related to the leader's environment). This enables the leader to translate the strategy and vision into goals for the relevant departments. It also supports an understanding of how different departments fit into the bigger organisational vision. There was ample evidence of, even larger organisations, making structural changes to suit the change in strategy. In larger organisations, these changes tended to take long. Understanding the business environments ensures that the leader can relate these changes back to the strategy (and understand why the changes were made) and communicate the requirement and facilitate the change.

Stakeholder management, especially expectation management and influencing skills, was identified as crucial to manage constant change. The leaders must understand and execute the priorities of their own environment as well as understand the priorities of other environments and how these relate.

The third identified theme was empowered teams. The respondents found that the leader must focus on accruing and developing a team with the required skillset for the specific activity. Once this is achieved the leader must be able to trust the process and the decisions of the team within the governance framework of the organisation. The final theme is the personal skillset that each leader should strive towards achieving. The skills are outlined in the updated framework in Figure 4.

The theoretical framework was subsequently updated with the findings from the three research questions. The framework was updated with the integration mechanisms that enable adaptability within the ambidextrous organisation. The capabilities required by the leader, to deal with the structural changes that an organisation makes to support ambidexterity, was also included in the updated framework. The framework is outlined below.

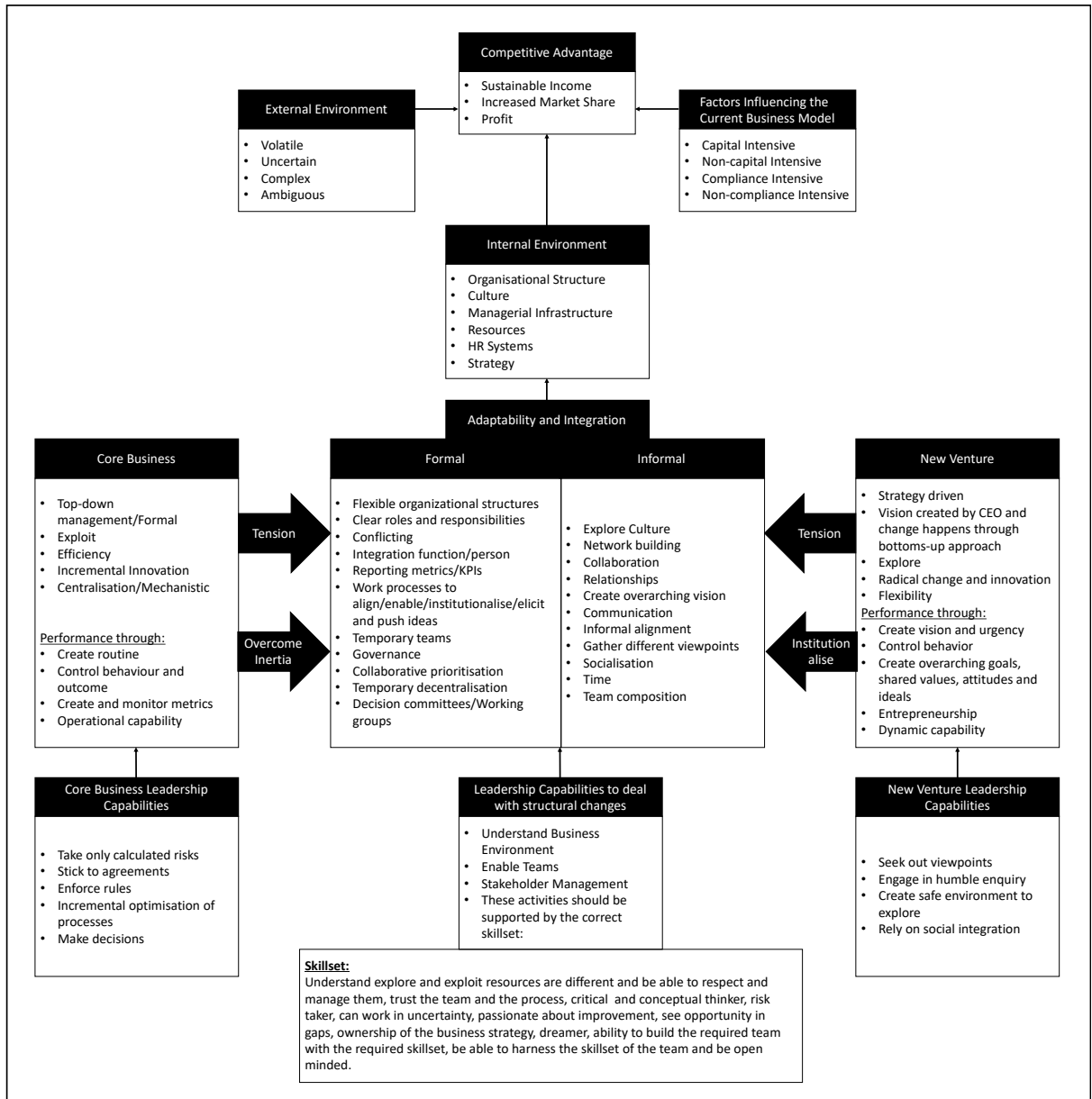


Figure 4: Updated framework to include leadership capabilities to support structural changes

7.3 Recommendations to Leaders in Capital Intensive Compliance Driven Industries and Organisations

Services or knowledge organisations were found to be more externally focussed and flexible to support changes to the external environment. In capital intensive, compliance driven organisations where incremental innovation is required there was an internal focus, increased resistance to change and only the departments specifically involved in exploring was aware of the term of ambidexterity. This

highlights a possible disconnect in the organisational capability to enact the concept of ambidexterity.

There is evidence that exploit organisations follow some of the same change logic for both explore and exploit activities. For example, the organisations formally structure for all strategic imperatives, instead of utilising temporary teams. These organisations also implement similar, formal processes for fund applications for both explore and exploit activities. Leaders and managers must understand their roles in identifying processes not suited for the specific environment and bringing about change.

Exploit activities are also easily translatable into quantifiable numbers and goals where explore activities are not. It is incumbent upon leaders, especially within interconnected, complex organisations, to ensure that they create an overarching vision where each business unit can understand how their activities fits into the whole. As the focus shifts between explore and exploit, this vision must be reinforced to ensure people remain motivated. Interconnected, complex organisations have a greater need for formal integration mechanisms, however senior management must balance this need with the fact that formal integration processes take up managerial time and effort. Leaders also need time to build relationships, networks and skills.

Furthermore, it is recommended that leaders utilise the leader capability framework, as set out in Figure 4, to study the nuances and difference between the two core operating models, the capabilities required for each operating model as well as the capabilities required for integration. It is incumbent upon each leader and manager within each level of the organisation to understand where the organisation or department is on the ambidexterity continuum and what the current change logic is, understand the impact of changes in relevant elements of the external environment, and then be able to ascertain how the internal elements within the leaders control should align according to these requirements. This context will enable the leader to support or improve any changes in structure for ambidexterity. Leaders should also take note of the capabilities required to manage these continuous changes.

7.4 Limitations of Research

The research study followed an exploratory research design with semi-structured interviews of eleven respondents. Although the researcher took every precaution to follow the research design, the researcher is not a trained interviewee. Due to the nature of qualitative research there is a possibility that the findings could include the perspective of the researcher however, with focus on data validity and reliability the researcher attempted to remain objective. The ability to draw a definite conclusion from the study is limited by the qualitative, exploratory research design which was not followed up by a quantitative study. The sample consisted of employees from four different organisations. Although these organisations are from different industries, it might not represent all industries.

7.5 Suggestions for Future Research

It is recommended that the qualitative study be followed up by a quantitative study to confirm or reject the findings of this study. It could be beneficial to focus on, or group organisations by specific requirements such as compliance or complexity to capture the context specific nuances required to successfully implement ambidexterity. Additional research is required to understand how the individual mindset shift can be achieved to make resources used to working in an exploit organisation more adaptable, or susceptible to explore activities and processes. It was clear from the findings and literature, that one of the greatest concerns for executive management is to find the correct rate, pace and intensity of exploration, given the certainty of profit today and compared to the uncertainty of future gains.

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Appendix A: Semi-Structured Interview Questionnaire

Table 5: Semi-structure Interview Questionnaire

Research Question	Interview Questions
<p>How do elements of the status quo, awareness and internal change logic of the organisation contribute to its organisational structure?</p>	<p>What is your understanding of the definition of ambidexterity?</p> <p>If it is indeed the case, how is ambidexterity part of your strategy?</p> <p>If it is indeed the case, how is ambidexterity practiced in your organisation?</p> <p>Give an outline of your organisational structure with specific reference to how exploit and explore functions are separated. How does the structure change to support ambidexterity?</p>
<p>What is the change process used by leaders to manage the structural shifts that enable ambidexterity?</p>	<p>What formal mechanisms are used to integrate the separated explore and exploit elements of the ambidextrous organisation?</p> <p>What informal processes and mechanisms are used to integrate the separated explore and exploit elements of the ambidextrous organisation?</p> <p>What do you believe enables or inhibits these processes?</p>
<p>What capabilities do leaders require to manage the structural shifts that enable ambidexterity?</p>	<p>Describe the leadership style and capabilities utilised by leaders who successfully integrate the exploit and explore elements that support ambidexterity.</p>

Appendix B: Theoretical Framework

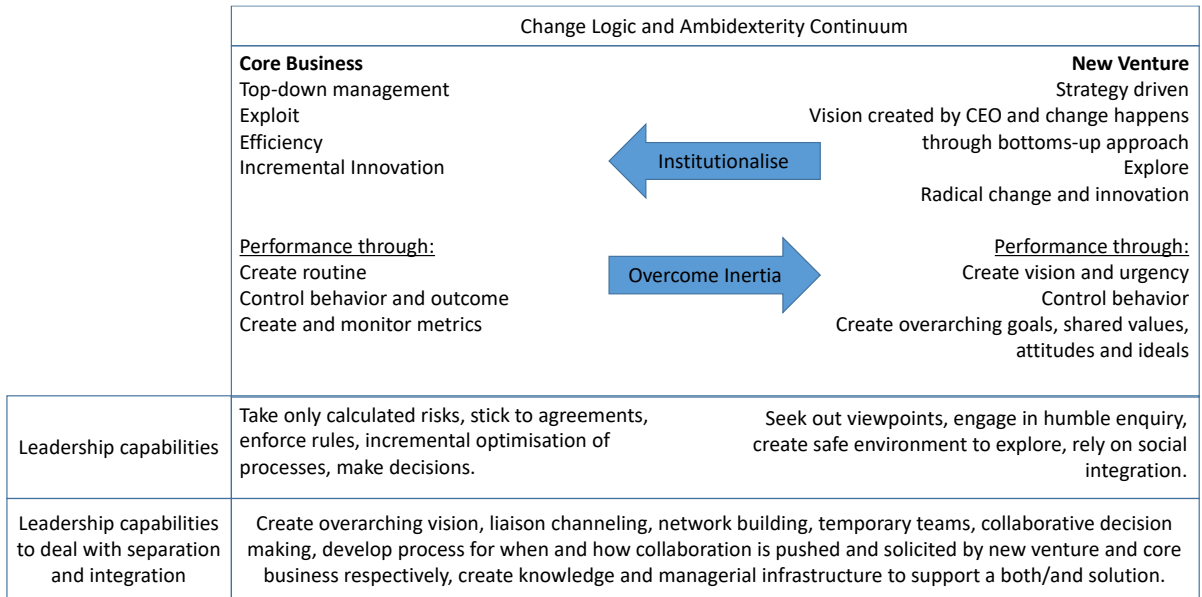


Figure 5: Theoretical Framework

Appendix C: List of Codes

- Ability to influence
- Adapting
- Alignment
- Artefacts
- Both explore and exploit
- Bottom-up
- Bureaucratic
- Calculated risk
- Centralised
- Change logic
- Collaborate
- Communication
- Complexity
- Conflicting
- Create environment
- Culture
- Decentralised
- Decision making
- Definition of ambidexterity
- Diverse skills
- Efficiency
- Expectation management
- Exploit
- Explore vs exploit
- Explore
- External focus
- Fail
- Formal integration mechanism
- Fund exploit
- Fund explore
- Incremental innovation
- Inertia

- Informal integration mechanism
- Inhibit explore
- Leadership capabilities
- Manage discussions
- Market changes
- Need to innovate
- Need to produce
- Negative
- Networking
- Organisational structure to support ambidexterity
- Overarching vision
- Ownership
- Paradox
- Prioritise
- Relationships
- Reporting
- Team capabilities
- Top-down
- Uncertainty
- Understand resources required to exploit
- Understand resources required to explore
- Understanding of strategy
- Understanding of strategy required to explore
- Understanding of strategy required to exploit
- Volunteer

Appendix D: Research Question 1 Detailed Results

1/D (Respondent/Org)	Functional Role: Director
Ambidextrous spectrum	<p><u>Bottom-up</u>: “they need to be flexible in the way they do it, there is a high-level budget set...but they are ultimately responsible for how they go and meet that...”. “...they need to be creative in how they fill that (their portfolio) because the requirement doesn’t change”. “...the drivers are reinforcing...he owns his own little business. He is fully autonomous in how he goes about doing it”. “...you delegate as far down the organisation as possible and there the guys have full autonomy”</p> <p><u>Flexible</u>: “there is a lot of informal exploration happening”. “...and that you can do within the gaps that are available on the project”. “...you just report to me as to why I [you] took the decision with a little bit of motivation...that sense of autonomy generates a lot of creativity”.</p> <p><u>Strategy driven</u>: “...the change there was to realise [what their strategic advantage was]”. “That forces a lot of ambidexterity within the business as well because your execution model is not static”. “...which forces you to change processed inside your own organization in order to meet what the client’s expectations are, changing the expectations”.</p> <p><u>Exploit</u>: “...we proceduralise in order to make the exploitation repeatable”.</p> <p><u>Vision created by CEO then bottom-up approach</u>: “Well the big changes...that comes into the senior part of our structure, how do we respond to that comes in right at the top”. “So, you know from a macro perspective that you there is something big happening here but that effects budgets on the ground in very different ways. Our sales structure and our execution structure runs very deep so there will be very personal relationships between my team leads and individuals in the plant and they need to be flexible in the ways they do it there is a high level budget setting that we do all the way down the org, but they are then ultimately responsible for how they go and meet that”.</p>
Strategy	<p><u>Preservative strategy</u>: “how do you go and explore in those geographies to replicate the business model that we have successfully been exploiting”. “...the things that you must keep the same and what do you leave for local adaptation”. “For us that minimum that you need is actually very little”.</p>

Organisational structure	<p>Decentralised: "...manage each project in you company as a company. It's got its own income statement, it's got its own balance sheet , it's got its own CEO which is the project manager and within the ring of that project you allocate levels of authority, you define what those levels are and you give full autonomy to the project manage to act in that space".</p> <p>Spatial and temporal divide (flexible): "We define the exploration as a project. Often, we will take those resources totally out of the business context, because in this office it is almost impossible to focus on doing anything new, when you are so focussed on doing something in an existing manner for an existing client". "...allocate the resources to it, which is exploration money and people and then physically go and silo them somewhere else"...small thing that we are going to look at to explore, that will report to a fairly junior level in the line, but if it is a fairly substantial thing that we are trying to get right then it will report directly to me"...structure mimics the client".</p>
2/C	Functional Role: Executive
Ambidextrous spectrum	<p>Vision: "creating a desire...give them the information that they require...it is a cycle not just a simple event" "reinforce the information that you have given people"</p> <p>Vision and Bottom-up: "if people assimilate with whatever purpose you have then they can drive it with you...articulate what their role is in formulating the process". "I see change as a cycle it is not an event. It is a continuous cycle that one day leads to ensure that awareness is there creating a desire...". "...articulate what the purpose of you know whatever target that you have...it is a joint purpose...see themselves achieving within the vision".</p> <p>Bottom-up: "essentially they are the link to the dream". "So, part of technical...They mainly look at what is the next growth and how do we then deliver the next growth project".</p> <p>Exploit: "...strategy is structured such that we drive safety back into the environment and be more efficient and produce more, this goes across the value chain".</p> <p>Explore: "...the explore part is how do we as an organisation become a sustainable business, but also how do we generate income in the future... [they are looking at different feed streams and monetising waste streams]". "How do we become a customer of choice today and for the exploring portion we also look at with low grade resources for instance how do we maximize our resources such that we are looking at various processes for us to basically create value from our waste and what type of markets would be more suitable to sell different products to".</p>

	<p><u>Centralise</u>: "...corporate office function is to look forward and explore for different technologies, for different markets, explore for different products that will sustain the organisation beyond the next ten years".</p>
Strategy	<p><u>Preservation strategy</u>: "I have a horizon one portfolio of projects that are mainly looking at implementation, and then you have the horizon two guys who are looking at exploring, and then my job is to basically look across the different horizons and make sure that in adopting today we are doing it efficiently and effectively".</p>
Organisational structure	<p><u>Explore function (external focus)</u>: "...he looks at the emerging technologies that are being implemented today...". "...he gives us a view of what is happening within the technology landscape and also looking at what they are doing to improve a current product that we have". "As a result, what we are finding is within the past two years we have been developing new technologies with OEM instead of us just implementing".</p> <p><u>Mechanistic</u>: "core operations...their function is looking at producing their target...and then there is corporate office that ensures that we support today's business targets through bringing in new technologies, excellent standards or processes...explore different markets, different technologies that will sustain the business"</p> <p><u>Spatial divide</u>: "I have an 80/20 principle. 80% of the budget and resources that I have I mainly give to today's stuff...and then 20% of the stuff is looking at exploring".</p>
3/A	<p>Functional Role: Executive</p>
Ambidextrous spectrum	<p><u>Bureaucratic</u>: "...by adding a level of governance and red tape will most certainly slow down the process". "Now we have added this explore thing but we haven't moved out to how we would let a team function within that environment so it is almost as if you are using the formal business processes that is governed and has all this red tape and you want to explore within this". "...something that is inhibiting currently that's moved the budget for these explore initiatives a level up in the structure so it's at head office...".</p> <p><u>Must overcome Inertia</u>: "struggling to move from our mindset. Now we have added this explore thing but ... it is almost as if you are using the formal business processes that is governed and has all this red tape and you want to explore within this". "It is really difficult to justify testing and trying something new..."</p> <p><u>Centralise</u>: "...leg of my portfolio...all about long term of where this business is going, where, in the framework of a certain environment".</p> <p><u>Incremental innovation</u>: "...merge and acquire, the sustainability thing is in there...". "...grow our capability through, through this digitalization initiatives...". "It is really difficult to justify testing and trying something new..."</p>

	<p><u>Formal/Top-down</u> (not seen as opportunities): "...we make use of certain resources, certain legislation, which is changing as well, there is an expectation from NGO's and community's that are changing and also where the world is moving towards in terms of energy". "...changes, in my opinion, forced on us by, you know, Take, for instance plastics, you know, some countries banning single use plastics, that type of stuff. So, I don't see us being ready for that at all". "...what comes from group is very much visible in my structure".</p> <p><u>Performance through operational capability</u>: "...you look at how we are spending money, the focus is on sustaining". "struggling to move from our [operational] mindset".</p> <p><u>Exploit</u>: "...in that a large portion of my contingent or team focuses on optimizing and enabling daily operations...". So, they will typically be involved in cost production drives to ensure that we meet production budgets to solve firefighting issues on the ground. So that is their focus. They definitely have the short-term focus... I would say two years, that's their accountability".</p>
Strategy	<p><u>Projective strategy</u>: "...why should we be spending money on things like [explore intervention] if my main need is to keep the business running". "The CEOs decide...these are the funds that are available for [exploration intervention], for the sustainability drive, and this is what is available for capital...which includes maintenance..."</p>
Organisational structure	<p><u>Exploit function</u>: "execute through the operations environment". "...link this dream to what is valuable to operations"</p> <p><u>Explore function</u>: "the technical function comes up with the ideas". "...there might be a product out there that we believe speaks to a problem in the operations environment". "...explore portion is my connection with the R&D function in the company"...I own the budget...the financing vehicle we use to drive research and development, so there is obviously explore that's how do we grow how do we move forward into the future".</p> <p><u>Integrate</u>: "they are the link to the dream" [referring to the function that comes up with the ideas aligned with strategy and then executes it through another function]. "So it is still officially like that in an organogram but most definitely my brief to each of the senior managers that leads each of the teams that serves technical business their boss is actually the operations leader of that industry so how we set it up is in my mind there is almost a dotted line to me".</p> <p><u>Flexible/Mechanistic</u>: "comes up with an idea and you send those two individuals here, you might sometimes get consultants". "...team focusses on optimising and enabling daily operations...solve firefighting issues. They definitely have the short-term focus". "Operations needs to meet budget...and that is the exploit part."</p>

	Temporal divide for team where integration lies: "...so everybody is almost seconded for that week or two we follow the sprint agile process by thrash out and give a bit of meat and package the idea so with the technical support team being present we make sure it is not too dreamy it suits business it looks at practicality and reality and then these guys will move back and these guys will continue to develop and it is ultimately transferred to be implemented in the operations environment".
4/A	Head of Department
Ambidextrous spectrum	<p><u>Must overcome Inertia:</u> "...we still move back to the thing of saying but it doesn't make sense if I compare it to my historical asset, or it can't compete with our historical asset". "...we still do things the way we do it". "[executive level management] is saying, but guys, we've got to start thinking about these things differently. And looking at different approaches and different opportunities." "...can sometimes get very difficult to get operations support". "...because they are not seeing why and what the opportunity is...and no real incentive" (which speaks to metrics control).</p> <p><u>Top-down management/Formal:</u> "...changes, in my opinion, are forced on us". "...but because that's not a crisis yet. You can go find somebody else to work with you. And it doesn't become a big focus area or focal point". (required change not driven from bottom. Crises is noticed by top management and change is driven from the top)</p> <p><u>Incremental Innovation:</u> "...because the approval costs 60,000 euros and what happens if it doesn't work". "We want to differentiative the molecules, but they mustn't be so different...". "even the way we've been comparing new options...it can't compete on a day to day basis from an economics perspective [uncertainty]".</p> <p><u>Overcome inertia:</u> "How can we do it, that type of stuff but the inertia to get that support is huge, because they are saying, Sorry, my job is to make my job is to make chemical A...". "...my job is to make, my job is not to, explore new opportunities". "The problem with a structure as well there, is that they can become very, for a lack of better words, [company]-ized, you know, we, we still do things the way [we've always done it]".</p>
Strategy	<u>Projective strategy:</u> "...if you look at the way R&T would work at the moment is we would discuss with all potential business units...would be very much based on the business of today"... "When it's something big...you have to actually take a team and create either a new structure within, it's a permanent structure, or a temporary structure".
Organisational structure	<u>Incremental innovation:</u> "pushing something new, often, is just a little bit more of a difficult sell"

	<p><u>Temporal divide</u>: “Will do 70% [time spent] business of today”. ...start to divide a little bit of the time, but that to me is not really sustainable”. “But obviously, looking at opportunities within business that the engineers reporting to you don’t have the time to look at because they’re busy on the plant, putting up you know, optimizing and putting out fires right there. So that’s almost like an advanced plant support, but then you don’t really do the, the exploratory stuff that maybe some R&T facilities are required to do”.</p> <p>The problem with this in a bureaucratic organisation: “So ultimately, that one boss could say to the production guy, but hey this is why we’re looking at this, this is why we need to look at this, this is why I want you to do it, but now even have different bosses. So, it’s not possible to get that alignment”.</p>
5/A	Functional Role: Head of Department
Ambidextrous spectrum	<p><u>Bottom-up</u>: “...so they brought in resources...that on a very high level will look at new business for the company”. “You need to have that internal focus”.</p> <p><u>Top-down</u>: “...you need to have both an internal drive to find new, explore new ideas and the external influence...”.</p> <p><u>Centralised</u>: “Now that we’ve fractured them [resources that were central within a business development department], who’s going to challenge corporate strategy”</p> <p><u>Bureaucratic</u>: “I think the moment you start putting processes in place it becomes process driven and it becomes a very long process and then you must start optimising again.... they have got really good processes”. “... [the processes and governance] have got a lot better and the governance has gotten a lot broader”.</p> <p><u>Explore</u>: “...in the first couple of year for us to explore how we can can best do this and I don’t think we’re there yet [referring to governance processes]”. “...new business for the company, new business acquisitions, new fields, sustainable energy sources, a little bit playing around...that was two years ago”. “...there used to be a team in our group, a very large group of free thinking-type focussed personalities”.</p> <p><u>Overcome inertia</u>: “...if we had the money and the people to do it and I think that is so necessary because otherwise you can optimise and exploit up to a point and then you just stagnate”. “But you can’t just wait for everything around you to change and then force you to exploit for further or explore further”.</p>
Strategy	<p><u>Projective strategy</u>: “...you need to be able to develop you own value proposition [but the] focus on exploring of technology edge has almost completely disappeared. So, for me we used to be better at exploring than we</p>

	<p>are now”. ” ...there was a lot of exploring in the beginning ...because there was no capital allocation governance in place”. “...it is process driven...”.</p> <p>“So, for me we used to be better at exploring that what we are now definitely”. (how good they are possibly depending on which department the growth is occurring in and how much explore is part of the strategy). “So, they have gone through too much restructuring because when started working they were almost 50/50: 50% explore, new technologies, technology management was a very big thing...”. “So, in my mind I think [company] as an organisation needs to take care of the technical explore function a lot better”.</p>
Organisational structure	<p><u>Mechanistic</u>: “but if you are flexible enough to say this is a once in a lifetime individual...he’s going to explore and he’s going to create a whole new direction for the organisation to go. But instead we put him in a little space that’s already in a structure...”</p> <p><u>Flexible</u>(although slow): “there used to be a group in our team...and they got moved back to sit two-two in the business units...restructured to sit in different arms of the organisation we’re silent again [referring to ability to contribute to the strategy]”.</p> <p><u>Temporal divide</u>: “You know, you know your [technical specialists] but the fact that they could interact, and they are sitting in the same space and you could prioritise. It also allowed you, you could do both [explore and exploit]. So, if you were in a cash constrained environment you could think about all of these new things...”.</p> <p><u>Spatial divide</u>: “So for me, when they pulled the business development guys into corporate finance, it felt to me like they are now divorced from that pressure of prioritisation [from realising what is required by the core business].</p>
6/A	Functional Role: Director
Ambidextrous spectrum	<p><u>Exploit</u>: “...on the one hand, yes, we are trying to push this place to its maximum potential”. “So, if your strategy at the moment is to contain costs, I mean that’s where most of the energy will go...”.</p> <p><u>Overcome inertia</u>: “There are certain people that bought into the current, let’s call it business model for now. Well that’s probably built careers around it. For them to almost convince themselves that’s not sustainable and to start thinking about new things. That’s not easy”.</p>
Strategy and structure	<u>Projective strategy</u> : “On the one side you constantly optimise the old model...this [ambidexterity] is a concept that creates a vehicle for you to go but aren’t there things that have become outdated”.

	<p><u>Top-down/Mechanistic/Centralised</u>: “I still would like to think that structure follows strategy...so if your strategy is at the moment to contain costs that it where most of the energy will go...in the end productivity go driven by discipline and good business processes”. “If you are in a growth spurt...I don’t think our current structure necessarily caters for that... [we can’t] structure new business...probably sits more with marketing”. “If you have the whole income statement to look at, then your mindset is a bit more on growth and on new things, on trying to increase the margins. Whereas, if it is more operationally focussed...you structure to ensure consistency and good discipline”.</p> <p><u>Current performance through operational capability</u>: “If coal just becomes unacceptable from an investor point of view, I mean, it doesn’t help to be a champion at something that’s seen by others as being quite stupid. In that way we need to find ways to or maybe reposition our business, you know and reposition the strategy. Maybe it isn’t all about efficiency anymore but it’s also about literally shifting the business to something else.”</p>
7/A	Functional Role: Executive
Ambidextrous spectrum	<p><u>Bottom-up</u>: There is a requirement for the following “It enables you tremendously to be able to identify the...areas where the strategy could or should be focussing on”. “It’s extremely important that the individuals or entities that inform the corporate strategy, that a lot of the voices are from the areas where the people actually understand the place”. “our company is fairly unique, because of our differences in size and scale [between the different business units] it is not something you can try or pilot and then say it is applicable [everywhere]”. “I think we are specifically in a much better position to influence strategy than anybody else. So, I need to acknowledge also and take ownership of my ability to steer and influence strategy”.</p> <p><u>Management driven/hierarchy</u>: “you definitely need strong support from the executive committee, there needs to be incentive structures around it to make sure people know that we are serious about it. I think what supports it is showing the case for change for why you can’t just continuously milk the cow”.</p> <p><u>Some flexibility</u>: “It’s a pendulum that swings, I found that it is never quite stagnant...given where the company is currently at...the organisation’s appetite for pursuing new things...reduces very, very quickly”. “So, the structure very much, I guess depends on for, for each area in [company], where that unit is finding itself in terms of health status, predictability, stability, good knowledge of their risks, and just good management systems in general”.</p> <p><u>Efficiency and routine</u>: :...you get very frustrated, very demoralised when you continuously feel like you have to fight the system, fight new people and your ideas, quite often you need to protect them and say but look we are on a journey, we are improving”.</p>

	<p><u>Explore</u>: "...people that was looking at this before just in a very different way to say but let's now do it differently".</p> <p><u>Exploit</u>: "And it was also, what's very interesting now, given where the company is currently at, in terms of capital, availability, the organization's appetite for pursuing new things, alternatives, even stock standard improvements, all of a sudden, reduces very, very quickly".</p>
Strategy	<p><u>Preservative strategy/Incremental innovation</u>: "you need to be careful before you start dreaming too quickly about complete other industry, or complete step out changes". "you are running the risk of having resources develop strategy or formulate strategy that doesn't have the experience or background that's typically associated with your company and your, the identity of your company".</p>
Organisational structure	<p><u>Temporal separation</u>: "So you can make sure that people are stretched towards the explore while they are exploiting...you are busy exploiting but it's still an improvement". "...the same team that was looking at it now, just in a very different way...and through that use the creativity of exploring". "...sitting with this dilemma...you've got the running plant that all it's asking for basically, day in and day out, is just to have as little surprises as possible...you're using a creative, innovative resource to do that. The real value is actually being applied in saying no but improve the system". "...you need to be brave enough to not completely let the pendulum swing the other way...also to say no, this is what I'm doing this year to improve this situation, doesn't matter what else happens. I need the balance". "But if you running around fighting fires every day, in terms of not knowing what your plants going to do, being surprised every, every other week, then you really struggling, then you're going to need all those resources not to focus on dreaming about next year or the year after, they are all now just trying to sort out what happened yesterday". "And I went to my boss very chuffed, very impressed, and say no, but we are playing in the future. We are, if you use your analogy of this continuum, we're going to be in this one end of the spectrum, where we will be changing things. And his first comment was, yes but, you need to protect the current".</p> <p><u>Structural separation</u>: "...sitting where I'm sitting now in this role is you, you're very much tasked with, maintaining the status quo and, and being as predictive as possible...".</p>
8/B	<p>Functional Role: Director</p>
Ambidextrous spectrum	<p><u>Strategy driven</u>: "By deciding who is leading it and who is the names of the required persons on the job. That's the only decision we make. The rest is managed by those guys themselves". "...we have to re-strategise the organisation to support whatever the work is that's available".</p> <p><u>Flexible</u>: "...because contribution is not measured by time, so we then changed the system and then what we do now is we do contribution accounting". "you fix your systems and your procedures the moment you have</p>

	<p>that issue and then you do the debrief”. “You modify the process and procedures to fit the client need and you have to have people that is quick in making those changes”.</p> <p><u>Dynamic capability</u>: “No, what we do is we set up for a specific project a set of procedures and standards and then we work accordingly”.</p> <p><u>Explore</u>: “Yeah, we've tried. We've really tried to create these tools and webinars but what we found in our specific environment is that those things, although they're good and then you do some marketing in that way, real work comes in by word of mouth”.</p> <p><u>Vision and then bottom-up</u>: “Proper understanding of the objectives and the right people”.</p>
Strategy	<p><u>Symbiotic strategy</u>: “Being able to follow what is required form the environment and maybe even lead that”. “It's like playing doubles in tennis”. [referring to the requirement for all resources to exploit and use current experience as well as explore new ways of working and being able to work together as such.]</p>
Organisational structure	<p><u>Flat structure</u>: “Just about every organisation has two types of people. You have the developers and you have the implementers as the core competence of the person and a certain group of people normally works in the development side...and a certain group of people love to have a job...and go and do it”.</p>
9/A	<p>Functional Role: Executive</p>
Ambidextrous spectrum	<p><u>Incremental innovation</u>: “it's going to give you the same outcome but at a pace”. “So, if you look at how we work and the capabilities that we have, should be slightly different, but on an organisational level we still work in the standard way of working”.</p> <p><u>Bottom-up</u>: “strategies are formulated with the entire organisation”. “...a centre would never develop a strategy independently without business intel within which it is executed”. “So, we're just here to enable them to get to the outcome, but they own what was developed by themselves. So, out of the entire approach is to give ownership and teach people”. “So, I don't think it will slow down in any -- if you do it that way – it will create some pace and some direction, because then we'd have buy-in, of the strategy by people and it will all be moving in the same direction...”.</p> <p><u>Management drive</u>: “so we are just here to enable them to get to the outcome, but they own what was developed by themselves. So out of the entire approach it is to give ownership and teach people”. “...people are used to the current norm as to where we are now versus where we need to be”. “...we obviously need to migrate to a</p>

	<p>different way of working”. “But then the centre will agree in taking in all the input...it will create some pace and some direction, because then we would have buy-in”.</p> <p><u>Dynamic capabilities</u>: “actually then helps people to make use of their competencies that they have developed over the years...so I think by doing that [relying on resources to develop capabilities as the team and market requires] you’ll end up with much more broader thinking type individuals”. “...a lot of people still need some guideline as to how to think about it, because they are not exposed to that space”.</p> <p><u>Overcoming inertia/Efficiency</u>: “...due to the fact that we are in cash conservation we’re heavily focussed around efficiency”. “So, we are used to looking at the external environment...to understand what they are doing, so we can bring back the learning...based on what our peers are doing and what consultants are saying as best practises as well. So, we try to marry that, but it’s not an easy process...everyone is at a different pace”.</p> <p><u>Top-down</u>: “So we [the centre of excellence that reports to the CEO] are responsible for putting things like strategies, frameworks, toolkits in place”.</p> <p><u>External focus</u>: “So we are used to looking at the external environment”. “Based on what our peers are doing and what consultants are saying as best practices as well”.</p> <p><u>Calculated risks</u>: “So we are used to looking at the external environment...so that we can bring back the learnings and consistency to our business and try and motivate as to why we need to do it”.</p>
Strategy	<p><u>Preservative strategy</u>: “Whether you are in efficiency or marketing or production or whatever it’s the same. It’s about a new approach to what you do, it’s not about, it’s not going to give you the outcome it’s going to give you the same outcome but at a pace”.</p>
Organisational structure	<p><u>Spatial separation</u>: “So my team is responsible for more strategic, how would you put it, more positioning of what you want to do, from a company perspective. And in normal circumstances the businesses should execute. But for now, we kind of have a combination of that...”.</p>
10/A	<p>Functional Role: Head of Department</p>
Ambidextrous spectrum	<p><u>Incremental innovation</u>: “we do not really have, at this point in time, an environment where experimentation is well excepted especially if you start influencing and impacting the established, highly interconnected and interdependent value chains”. “...so, it’s better to move in small steps and apply technology and applications that have been proven somewhere else”. “and on the other side where we do have a few of these new technologies and new ideas that would be tested in smaller parts of the business, so we will use the agile kind of approach and say that we are going to test it in this environment, when standards are known, area where</p>

	<p>we can manage the risk and then thereafter once we've proven it, we can then scale it again." "And you give incremental money to test that. you test, you prove, you validate..."</p> <p>Bottom-up: "get input and feedback from what is happening elsewhere, like a community of practice". "...so that you socialise it up not down".</p> <p>Exploit: "...80 percent or even 90 percent of our time and resources on let's say know solutions and known applications".</p> <p>Centralised: "When you first centralise you get the processes, the methodology and the tools standardised, then as soon as maturity in the business start increasing and the guys are understanding the process then you pick up the capability, the skill".</p> <p>Explore: "...we've got three legs of structure, the first one is the scouting and ideation which like the 10 percent component I've spoken about where the people are going out in the market and they're looking for new technologies and applications that can be utilised to deliver single value objectives and bring that back into the business and try and test it in smaller areas".</p> <p>Bureaucratic: "And they are then also skilled enough to also on their own implement a little bit of the exploiting and new kind of development so we've built it as an COE ("Centre of Excellence") at the top to support and help businesses scale but within the businesses below it there's also a structure that can do both of these things should the opportunity arise".</p>
Strategy	<p>Preservative strategy: "So it's a bit of a combination of using the known and proven concepts and then scale them really fast so that you maximise the value of your investment and on the other side, where we do have a few of these new technologies...test it in this environment...where we can manage the risk". "So, the whole point is to...maintain the balance..."</p>
Organisational structure	<p>Bureaucratic structure with small flexible explore arm: "we've built it as a COE (centre of excellence) at the top to support and help business scale but within the business below it there is also a structure that can do both of these things should the opportunity arise". "I want to form what I call working groups where people who are interested in this initiative or this technology of each of the [business units] will have representation on it".</p> <p>Flexible: "if you look at my structure on paper it looks like its non-existent and the reason for it is that is it's a flexible structure, so it grows and shrinks as your number of things that you're working on in the business". "...but now digital procurement comes in so I need to form a team that will look after digital procurement, robotic process automation is another one...". "...then my team will either disband or form around something else".</p>

11/D	Functional Role: Executive
Ambidextrous spectrum	<p><u>Strategy driven</u>: "...empower, give each the opportunity to chase their own budget, thus a small business that runs itself within the governance framework of the larger organisation, within the organisational strategy".</p> <p><u>Incremental innovation</u>: "...current services, the stuff we do here is related to more efficient ways of doing things, so how can technology help me to do this cheaper and quicker". "...so, my effort expenditure leans towards, let's add the next thing or let's do what I'm doing more effectively".</p>
Strategy	<p><u>Preservative strategy</u>: "It's easier to go after other current supply services...it's defined sales channels...there's even people I can bring over which is cheaper than developing new products".</p>
Organisational structure	<p><u>Flat structure</u>: "A lot less stakeholders, a lot less red tape, it's much easier to implement change so when you have that flexibility you also foster that culture where you say you can influence this thing, I'm part of this business, this is my business as well".</p> <p><u>Spatial separation</u>: "No we will move it out [the new venture structure] ...".</p>

Appendix E: Research Question 2 Detailed Results

1/D (Respondent/Org)	Functional Role: Director
<p>Formal Mechanisms</p> <p>Integration</p>	<p><u>Formal working group</u>: “The lessons learned and the dissemination of that is very informal. So, what we will have is that for each section of the company we have got monthly ops meetings and a portion of that ops meeting is dedicated literally to just talking about what it is we are learning about these different explorations that we are doing. And that will get discussed in a forum”. “That [success] will then come back and [a person] who is our head there he will then come in one of our ops meetings, he will sit down and he will then start talking about what are the things that he is seeing is being successful there... That happens in a group form. You will then have [a person] who heads up [a division] who will be going: “Hey you know what maybe I can try that here.” Then he will try and apply [it] and that is how we disseminate a lot of those information very informally. And we don’t track how [a person] does that”. “So if its say a fairly small thing that we are going to look to explore that will report to a fairly junior level in the line, but if it is a fairly substantial thing that we are trying to get right it will then report in directly to me”.</p> <p><u>Organisational structure/Work process to enable empowerment</u>: “Our sales structure and our execution structure runs very deep so there will be very personal relationships between my team leads and individuals in the plant and they need to be flexible in the ways they do it there is a high level budget setting that we do all the way down the org, but they are then ultimately responsible for how they go and meet that”. “...it’s very customized to the clients so you are able to work on lots of different types of problems the whole time, sure the content of that work can be very repetitive...”. “You just report to me as to why I took that decision a little bit of motivation so it’s a lot like a board that does governance of a CEO then it is day to day decision making that I have to play back and that sense of autonomy generates a lot of creativity”. “Now in an engineering or project house there is a recognized industry that is practiced which says that what you effectively want to create is that you are managing each project in your company as a company. So you are reinforcing the resources and the costs for that project as you would a company. Like a Pty. It’s got its own income statement, it’s got its own balance sheet, it’s got its own CEO which is the project manager and in the ring of that project you allocate an ASAM levels of authority you define what those levels of authority are and you give full autonomy to the project manager to act in that</p>

	<p>space”. “If we are looking at how we need to grow, the concept of structuring for explore is a big part of, and we do it formally it is not informal”.</p> <p><u>Roles and responsibilities:</u> “So you create those reinforcing loops all the way down the organisation, so it is through budget it is through expecting from you”.</p> <p><u>Intentional Conflicting:</u> “...because they do it so well, some people are used to be devils’ advocates. There are people in the org that are brilliant devils’ advocates. Only they are allowed to wear the red hat. Then we have got the blue hat which is explore. So literally we will set up a discussion and we will say... And then we are formulaic in it. There are two ways that you prep a discussion like that, the one is we are having an explore discussion, so we are literally looking here it is open-ended there is no conclusion we are just exploring. The other one that we ask ourselves is what would have to be true. So, we are looking for the certain outcome. What would have to be true for us to reach that outcome?”.</p> <p><u>Team composition:</u> “There is a certain minimum set of exposure to our working model that I put down on that office on day one. So, there will be somebody who knows how to price the job...”. “...which is why we employ a lot of engineers because engineers allow, they enjoy two things, they enjoy autonomy and variety...”. “...normally we are testing for high conceptual capability’s...”. “So that is what we are looking for in our leaders so people that are able to create context for themselves out of the explore discussions that we have, because the feedback that is coming from that is informal”. “...very personal relationships between my team leads and individuals in the plant and they need to be flexible in the ways they do it...”</p>
<p>Informal Mechanisms Integration</p>	<p><u>Time:</u> “And that you can do within the gaps that are available inside the project. So the discussions that are happening in a project meeting or on a site walk or around the coffee table I mean those are all happening as well but that is a lot less structured for and it needs to take place within the freedoms that are in the existing system”. “Don’t underestimate, there is a lot of informal exploration that is happening as well on these projects”. “you are managing ambidexterity with the freedoms that you create around that [formal processes]”.</p> <p><u>Culture (control behaviour):</u> “We have created a culture where you delegate as far down the organization as you can and there the guys have full autonomy”. “...that sense of autonomy generates a lot of creativity”. “...modern management style versus my predecessors were very different and culture is sticky culture changes super slowly right there are large parts even on my senior management structure that came out of a world that didn’t manage in this manner and still</p>

	<p>today it is a continuous struggle to get them to see the world in this way you need to let go you need to give rope you need to give autonomy, you need to accept that there will be some mistakes but they are going to give you a lot more in the long run, but you do have managers that don't work in that way".</p> <p><u>Create an environment for Network building:</u> "In the canteens you have got the cool drink areas with free cool drinks, why because in some of your informal structures in order to keep knowledge propagation happening, I need to create opportunities for informal discussions. The coffee session discussion the discussion around the lunch table. Thursday afternoon beers. That's not there because I want people to drink beer".</p>
2/C	Functional Role: Head of Department
Formal Mechanisms Integration	<p><u>Integration function:</u> "So I have a function called integration specialist basically what he looks at the emerging technologies that are being implemented today and at the same time what he does is because he needs to explore so he goes to conferences he goes to OEM visits, like he is forever outside the country, but what that does is he brings in the new cutting edge technologies that, he gives us a view of what is happening within the technology landscape and also looking at what they are doing to improve a current product that we have". "we are involved with the technology implementation on site, but there is also an element of how do we ensure that we understand today in order for us to build a better tomorrow". "And then there is corporate office that is has sort of different technical functions that ensures that we support today's business targets through bringing in new technology's, through bringing in excellent standards or processes that will insure that today's targets are met, but at the same time the corporate office function is to look forward and explore for different technology's, explore for different markets, explore for different products that will sustain the organization beyond the next ten years". "So part of technical function is the growth projects that looks at and not involved in the day to day business". "within a pipeline so to speak I have a horizon one portfolio of projects that are mainly looking at implementation, and then you have the horizon two guys who are looking at exploring, and then my job is to basically look across the different horizons and make sure that in adopting today we are doing it efficiently and effectively...". "link for between our operating help and that overall strategy".</p> <p><u>Clear roles and responsibilities:</u> "...articulate what their role is in formulating this purpose". "...is a joint purpose to ensure that you integrate the vision, ensure that you integrate peoples, can I say deliverables or what is it that they want or see themselves achieving within that vision". "that from</p>

	<p>an organizational perspective that there are certain characteristics are spelled out to ensure that you have that differentiation of capability's...".</p> <p><u>Communication</u>: "...a communication platform and a channel that needs to be reinforced to ensure there is momentum...". "facilitated communication is that new innovative ideas and solutions emanates from those discussions, that is why I think it is very important for the teams to communicate...". "They focus on delivery and they don't necessarily have a chat to the other guys on a regular basis and from a physical location that the guys that are looking at Horizon two are mainly in the corporate office not at the mines".</p> <p><u>Formal working group</u>: "...technology portfolio committee which meets on a monthly basis...so we discuss the whole portfolio".</p> <p><u>Reporting metrics</u>: "Although your deliverables are not or milestones are much longer compared to your current implementation portfolio but there is a balance of both portfolios and basically a reporting of both portfolios on a monthly basis".</p> <p><u>Work processes</u>: "...a sort of smooth hand over because in most instances what happens is someone else is exploring and investigating a technology and then you have another team that implements it and in most instances no proper handover to ensure that you have continuity and momentum of the different projects and change...".</p> <p><u>Team composition</u>: "...certain people that are geared at exploring for them it becomes natural and from a standards perspective you can't tell a person your job description is to go out and explore...". "There are certain characteristics that a person who is an explorer has versus someone that has an implementation mindset". "So I think it is important that from an organisational perspective that there are certain characteristics, are spelled out to ensure that you have that differentiation of capability's...".</p>
<p>Informal Mechanisms</p> <p>Integration</p>	<p><u>Collaboration</u>: "...understand the proclamation in order for you to give them the information that they require". "...reinforce the knowledge that you have given people". "...articulate what the purpose of you know whatever target that you have". "...they can then drive it with you instead of you just sort of being the leader and following". "I have informal team discussions every second month that we discuss anything that is technology...".</p> <p><u>Relationships</u>: "...personal connection with people because if you lose that then you don't have an understanding of how the, not only the organisation but your environment is changing". "...informal</p>

	<p>relationships with people to ensure that you understand what is happening in the business and that you are then able to react according to make the right decisions based... most businesses you know have unwritten cultures or unwritten word of people's perceptions, they are not written. It is not written down, but it is there and, in most instances, hampers your drive or deliverables".</p> <p><u>Create overarching vision to enable alignment</u>: "It is a continuous cycle that one day leads to ensure that awareness is there creating a desire...". "...awareness is there creating a desire...". "...reinforce the knowledge that you have given people...".</p> <p><u>Communication</u>: "...and encouraging people to talk because [else]...you erode that communication into horizon discussions".</p> <p><u>Network</u>: "...networks offer, ensures that I have relevant information that comes to me from your production site to where I am without having a formal process...".</p>
3/A	Functional Role: Executive
Formal Mechanisms	<p><u>Integration</u> <u>Integration function</u>: "...we implement through the ops environment and the technical support engineers that work in that environment, they usually come with the ideas and essentially they are the link to the dream and what is practically possible and what will deliver; and also how to link this dream to something that will be deemed valuable for the operations colleagues...". "...they would provide input into the, digital office might come up with a dream or there is a product out there that we believe it might speak to a problem that we have in the operations environment". "...technical support team being present we make sure it is not too dreamy it suits business it looks at practicality and reality...".</p> <p><u>Temporary teams</u>: "So, the idea is to here is an idea or maybe the technical support comes up with an idea and then you almost send those two individuals here, you might sometimes get consultants if there is a specific product or approach that they are confident with, so you bring them in so everybody is almost seconded for that week or two we follow the sprint agile process by thrashing out and giving a bit of meat and then package the idea. So, with the technical support team being present we make sure it is not too dreamy, it suits business it looks at practicality and reality. And then these guys will move back, and these guys will continue to develop, and it is ultimately transferred to be implemented in the operations environment".</p> <p><u>Governance</u>: "So, by adding a level governance or red tape will most definitely slow down this process...". "...inhibiting currently, they've moved the budget for these explore initiatives a level</p>

up”. “So it is almost as if we are trying to formalize and really govern a leg of business that is supposed to be something that try’s a lot of stuff and then comes up with the one brilliant...”

Matrix organisational structure: “...but most definitely my brief to each of the senior managers that leads each of the teams that serves technical business their boss is actually the operations leader of that industry so how we set it up is in my mind there is almost a dotted line to me...”. “...what comes from group is very much visible in my structure...”. “...see it currently there is a dotted line from me to each of those the digitalization office, the sustainability office, the capability portfolio office because even though I serve my [manager] from the functional point of view I need to report back and ensure I am in line with what the functional heads of each of those departments envisage. So, it is a matrix from my side to them and then it is a matrix between the operating VP’s, the technical leads and me”. “...we did the same so we established a structure within one group that can focus on that...”.

Formal working groups: “...only way to get that is to do formal discussions so all Exco members, whether you are in an exploit or explore role, attends these formal steering committees where we will pitch the strategy and make sure that priorities are set out, [the] value that we will drive from the initiatives are clearly articulated and justified and then there is sign off”. “...but now there is really competition for resources and hence the need to have these formal engagement”.

Collaborative prioritisation: “...only way to get that is to do formal discussions so all Exco members, whether you are in an exploit or explore role, attends these formal steering committees where we will pitch the strategy and make sure that priorities are set out, [the] value that we will drive from the initiatives are clearly articulated and justified and then there is sign off”. “managing expectations from the functions side, the part that only looks at explore, so I think I am trying to manage this balance because like I say I need the operations, the exploit part, to buy into this, to support this and to maintain that support I need to maintain expectations on the function side in regarding what we are going to deliver by when and how it will impact their budgets”. “we do the formal engagement with the Exco so we go to that level and I think that amount of detail and alignment with the Exco is so necessary because of the very little money we have to work with...”. “I think in an environment where there was an abundance of funds and we didn’t have to priorities to the degree this engagement could have been less formal...”. “So human capital yes, there is for me a good balance but not in terms of finances”. “...what we found is mixing the two roles within a technical support team that looks at the day to day support as well, usually, your focus needs to

	<p>go back to exploit because that is the most definitely [the most important]”. “...but now there is really competition for resources and hence the need to have these formal engagement...”.</p> <p><u>Work processes</u>: “...so they are ultimately that link so there is still cooperation and a lead that looks after how do we, what is the business processes for explore, what is the formal committee meetings or engaging that is required to do this, how do we do we justify projects in that environment how do we track and measure deliverables and the meeting thereof so we had to have a formal structure that was necessary”.</p>
<p>Informal Mechanisms Integration</p>	<p><u>Alignment</u>: “...relationship management and expectation management so I need to continuously align with my peers in regarding the direction we are taking so that is off the record alignment and popping into an office...”. “I feel am alignment regarding where we are going and what we need to do to achieve that for the bigger society within [the town], the other company’s so I think that enables the fact that there is alignment and everybody has an appreciate the perception [of what] we will have to do to reach the overall objective”.</p> <p><u>Relationships</u>: “...relationship management and expectation management so I need to continuously align with my peers in regarding the direction we are taking so that is off the record alignment and popping into an office...”. “So, I think there is an informal lobbying role definitely relationship management...”.</p>
<p>4/A</p>	<p>Functional Role: Head of Department</p>
<p>Formal Mechanisms Integration</p>	<p><u>Governance</u>: [talking about how decisions are made at steering committees where funding is provided for projects]: “...because the approval costs 60,000 euros and what happens if it doesn't work? So that's where I find [the company], even in the areas that we would want to be moving in a more fluid way, we are not doing it at the moment”.</p> <p><u>Collaborative prioritisation (work process)</u>: “But obviously, looking at opportunities within business that the engineers reporting to you don’t have the time to look at because they’re busy on the plant, putting up you know, optimizing and putting out fires right there. So that's almost like an advanced plant support, but then you don’t really do the, the exploratory stuff that maybe some R&T facilities are required to do”. “...because they are not seeing why, and what the opportunity is. And there's no real incentive I suppose...”. “...different bosses...”. “even the way we've been comparing new options [referring to requirements where social sentiment has changed that did not receive enough attention]...”. “but because that’s not a crisis yet...And it doesn't become a big focus area or focal</p>

point...". "So ultimately, that one boss could say to the production guy, but hey this is why we're looking at this, this is why we need to look at this, this is why I want you to do it, but now even have different bosses".

Require safe environment to explore: "Sorry, my job is to make, my job is to make chemical A, if you want to change the product spec on chemical A you got to tell me now and you're going to write it down...and they say no to seeing if it's possible as you are putting [introducing] a threat to making [producing]...". "So ultimately that one boss could say to the production guy, but hey, this is why we are looking at this...".

Organisational structure: "...because so often what, what I think has happened with the, [new business model] is everybody so very excited about their little...space that you know, I'm going to make, make, make, make, make, if I'm making the wrong thing, I don't care, my job is to make, my job is not to, explore new opportunities...". "technology areas. On the engineering side, what we've done is we've developed we've broken it up into competency. So, we've got a reactor and reactions group, we've got a separations and environmental group, and we've got a processes engineering and modelling group". "...and we'll start to look at dividing a little bit of the time but that, to me is not really sustainable. Because the minute there's a crisis, I'm going to divert back to business off today". "...we've created a new structure...".

Formal working group: "so every two months will give a, an overall summary, that's a very high-level summary of what we've been working on [this is to Exco members]". "So what we look at is monthly meetings with the relevant senior manager and their teams to say this is a work request you sent us, this is the stuff that we propose to you, this is how we doing, this is the progress...".

Temporary teams: "And what I find often works well, if you don't make a permanent structure, it is at least in the task team, and in their task team, then they have sole focus is to say I'm going to explore these new opportunities". "...everybody leaves the day to day grind, and just focuses on that one task". "...that task team has all the relevant skills that you need...".

Integrator (job description): "And then we've got three technology managers that will oversee those portfolios".

Team composition: "...your skill set that you brought from a production perspective into this, we need the marketing and the marketing people to say, you tell us how we start to look at these things".

<p>Informal Mechanisms</p>	<p>Integration</p>	<p><u>Influencing skills</u>: "...pushing something new, often, then it's just a little bit more of a difficult sell...and I'll convince [a person's name]..this is what you are going to see and this is how it is going to benefit you". "And I think that's what's important from any, anyone coming in and wanting to develop or move outside the norms of the way we work, you have to have that credibility...".</p> <p><u>Collaboration</u>: "...we would look at very interesting things from a technical perspective, but from a business perspective, it lacked that business mindset that says, But remember, at the end of the day, we have to be able to make money from this, how are we going to make money from this". "So, you can't do it with one person just dabbling in the lab".</p> <p><u>Different viewpoints required</u>: "...because they are not seeing why, and what the opportunity is. And there's no real incentive I suppose...". "...often push back and say we are R&T, this is what we are supposed to be doing, and say no, no, we not an R&T at a University, we are an R&T at a corporate entity, that requires us to, sure you know, maybe do 10 ideas and one works, but that one has to be able to pay for the other 9. So that's where I think that, that business mindset comes in".</p> <p><u>Overarching vision</u>: "...that's when you can actually get some momentum in the space, because you can say that, guys we are looking at this because [the executive team member] wants us to look at that. All of a sudden, the conversation becomes a lot easier to get support, than if I randomly come up with an idea...". "...and once I've got a strategy that, you know, I can have a discussion with you, and I can say...this is our plans for Sasol as a whole. This is where we want to go to, this is how you and your team fits in. This is how your business unit fits in. This is how the whole Sasol looks. I think that to me is the first part to bring in that that collaboration...". "So, it's not possible to get that alignment [from the organisational structure/formal]. That's why I say, to me, the strategy, as a technology manager, I should, I should know exactly what [the organisational] strategy is, I should know where we going to". "...one of our strongest things is retail growth, which is great, it's a good idea. But that's not going to impact you or me, in our day to day jobs, we don't know how to support that [strategy]...".</p> <p><u>Culture</u>: "...because as you know, we've been to quite a rough repositioning. And we, you know, somebody put a statement down that said, culture eats strategy for breakfast, which is right. But if I got the culture of people willing to work together...I think that for me is the first part to bring in that collaboration...". "The problem with a structure as well there, is that they can become very, for a</p>
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	<p>lack of better words, [organisational]ized, you know, we, we still do things the way [we've always done it]...".</p> <p><u>Different viewpoints</u>: "...performance chemicals will want to make a new product or explore the opportunity to make a new product. but obviously now we need operations support to [understand] just what can we do on the plant?". "And we say, but we don't know if we want to yet, we want to see if it's possible. And they say, no to see if it's possible you [are] putting a threat [to producing]". "...your skill set that you brought from a production perspective into this, we need the marketing and the marketing people to say, you tell us how we start to look at these things".</p> <p><u>Relationships</u>: "I rather spend seeing most of the people I work with on a general base on a on a regular basis and talking about new opportunities, existing problems and that type of stuff. Because basically, I find then I develop a better relationship with operations teams. And then I can really know what their problems are and what their pain points are". "So, what I always try encourage the guys to do is to spend time with the team that they're supporting. So, even if it's not, for instance, my problem is a formal meetings, they exactly that they are formal, so the chances of talking about new opportunities, having a quick chat about something, I always find that the doesn't exist then...". "...so don't only come through when it's a functional forum or something, just come spend a day here, work with the guys, that type of stuff".</p> <p><u>Socialising</u>: "Yes, what we try do, a very small group is, have coffee in the morning, it sounds like a silly thing. But often there I mean; you'll go from speaking about the rugby on Saturday to whatever is frustrating you at work. And then sometimes to new opportunities, or new ideas or problems people have, and then you bounce around [ideas]".</p> <p><u>Time</u>: "So, I think you've got to create that open, open time that open space to, to actually explore and to discuss new things".</p>
5/A	Functional Role: Head of Department
Formal Mechanisms	<p><u>Integration</u></p> <p><u>Intentional conflicting</u>: "Now that we've fractured them, who's going to challenge corporate strategy while you're one individual sitting in one business unit...".</p> <p><u>Governance</u>: "I think that the moment that you start putting processes in place it becomes process driven and it becomes very long process and then you have to start optimising again". [Talking about different business units presenting at steering committees where the decision is made to allocate funds]: "[one business unit is] really pushing the boundaries to make sure that they really</p>

have the capital if they make the decision to spend the capital. Then you've got on the other hand somebody like [another business unit] who they-- and I know exploration, oil and gas exploration is like a very dark, a very deep hole but it feels to me like they don't always follow the same processes when they make decision-making..."[one business unit takes calculated risks and the other values possibilities]. "but it looks like it makes the best thing and they are excited about it, while [a business unit] will wait until their projects are virtually certain before they come and present anything". "You want decision making at the right level".

Collaborative prioritisation: "...what they are saying currently is we tell ourselves we have to spend that capital so those [sustain projects] get rather easily through the first levels of decision-making while anything of what we call discretionary, which falls in the explore category for me, new areas, they get a lot more interrogation". "I think we need to standardise so that the function of the [inaudible] authorisation community is to weigh all of the explore type opportunities against one another so that we can focus strategically and prioritise on what we want to pursue and if one part of the organisation brings them very early and one brings them very late then they never get the opportunity to do that...". "It's going to be [high] on our [resources looking at specific strategic initiative or in another business unit] projects list...it may be the last thing on his project list because he's got six better opportunities [within the specific business unit]. So, the areas of accountability I think stifles our explore". "So, I also feel there's pros and cons to either of those structures. When...they were under one [manager] so then when you start lobbying for support everybody else is outside of our direct line of reporting so then you struggle to get support...So, everybody is busy with their own exploiting and then somebody comes along and says, "I want to now explore this opportunity," that is always at the bottom of the priority list". "...but it looks like it makes the best thing and they are excited about it, while [another business division] will wait until their projects are virtually certain before they come and present anything". "think we need to standardise so that the function of the authorisation community is to weigh all of the explore type opportunities against one another so that we can focus strategically and prioritise on what we want to pursue...".

Matrix structure: "...they brought in all of the business development resources of the company that on a very high level will look at new business for the company, new business acquisitions, new fields, sustainable energy sources, where you want to go, a little bit more playing around and explore to try and guide what our strategy should be. Then about two years ago, they took that away again. They split the it, restructured again so that all the business development resources are now with the individual business units". "And so, there's one benefit of moving into silos again

	<p>is the guys now own the business development in their own areas again. Now they are separated from all their other business development colleagues. They could have kind of influenced each other and kind of helped you to develop ideas and things. So, I think-- so I've seen both sides of the structure. I believe that there must be some kind of in-between". "The discussions happened, and it was easy because it was the same; It was a resource for the company [and the consideration was] where it can be used at best. Now I think it's a lot more, because it's a lot more structured, it's a lot more difficult to move between [explore and exploit] places". "I believe that there must be some kind of in-between..."".</p> <p><u>Centralised</u>: "the fact that they could interact and they are sitting in the same [building/area]-- and you could prioritise. It also allowed you, you could do both [explore and exploit]. So, if you were in a cash constrained environment you could think about all of these new things...". "...they brought in all of the business development resources of the company that on a very high level will look at new business for the company, new business acquisitions, new fields, sustainable energy sources, where you want to go, a little bit more playing around and explore to try and guide what our strategy should be".</p> <p><u>Formal working group</u>: "Some areas of our organisation is very good at looking for opportunities and chasing them. So, at the gate one authorisation committee you can see it". "The other one is the portfolio management section so they are literally the guys who say, "Everybody give me your [inaudible] plans" and they have got so much money, how do we proportion it out, how do we factor out projects that are too early".</p> <p><u>Temporary teams</u>: "And it wasn't structural groups. It was the accountability of the concept development groups was both project implementation and plant support and you had to juggle it". "So, it's absolutely personality driven [if you would place the person only in explore/exploit or able to function in both]". "I just think that if you are so tied down-- we don't want every [inaudible] to create new positions but still, we have to have the flexibility to say that to this guy's skill just lies in a different area and then you have to be able to use it".</p>
<p>Informal Mechanisms</p> <p>Integration</p>	<p><u>Flexibility</u>: "Not enough to warrant an official structure for it but if you are flexible enough to say that this is really, this is one in a lifetime individual. If I let him loose then he's going to optimise and he's going to explore and he's going to create a whole new direction for the organisation to go". "...cycles where capital was not constrained...everybody just come up with ideas...". "I think definitely our company's structure inhibits it. I think so because we went through a process where</p>

	<p>you had to put down your job description, show your value and showing your value in your conceptual when you are looking for opportunities and it's extremely difficult".</p> <p><u>Culture (ownership)</u>: "you need to have both an internal drive to find new-- explore new areas and the external influence of things like digitalisation to drive you". "So there used to be a group in our team, a very large group of free thinking explore-type focused personalities..."</p> <p><u>Team composition</u>: "...and in that brainstorming...you need to have as many low-level individuals in your room because they're still free thinkers". "...you create a position for him [technical expert in a field that the organisation wants to develop] for goodness' sake. Why does he have to fit into a [specific] structure"? "if we set targets to inorganically grow then obviously, we want a very strong explore function to go out to look for opportunities... if you have just a couple of individuals then they are still driven by their own personal experience". "...the right thing, the right strategy but the wrong person. So you need to absolutely map personalities and skills to where you put them". "...he was amazing at just listing things and then just moving on to the next thing. So, it's absolutely personality driven".</p> <p><u>Collaboration</u>: "...those type of people they feed off one another and sometimes I read something in the sustainable energy field that's interesting to my base chemical colleague but now that I am not sitting with him anymore...". "Now they are separated from all their other business development colleagues; They could have kind of influenced each other and kind of helped you to develop ideas..."</p> <p><u>Time</u>: "It seems to me that we are so [inaudible] that every single guy has got 120% work. Even in a cash-constrained environment. Where are they going to get time..."</p>
6/A	Functional Role: Director
Formal Mechanisms	<p><u>Integration</u></p> <p><u>Clear roles and responsibilities</u>: "It's not like it used to be where we could make deals and you know structure new businesses... it is tough for me to admit, but we predominantly have become a bit more of a cost centre than having a bottom-line responsibility. So, I mean, it's natural when we have the whole income statement to look at, then your mindset is a bit more on growth and on new things, on trying to increase the margins and how do you do it...". "Whereas, I think there is certain elements and maybe if you take production and you take the Troika we have. My expectation is that the production and maintenance folk predominantly, they make sure that the status quo works well, and they follow procedures and they stick to you know, known methods.</p>

Whereas, the engineers are the ones that from a structural point of view, at least my understanding or my wish is they need to improve and challenge”.

Organisational structure: “So, if your strategy at the moment is to contain costs, I mean that’s where most of the energy will go. And we structurally try and position like that as well. You probably take more experienced people from an operations point of view -- in the end productivity got driven in my view, by discipline and good business processes”. “I spent a lot of time in thinking about well: what it is that I want, because you have different things affecting the organisation which also comes back to its -- to some extent to its strategy, because if you take [town], it is a bit in the middle of nowhere from let’s say -- maintenance is probably a good example point of view. So, to think that you can shop everything in, in the extreme is a bit stupid, because you will wait too long to get everything here”. “and I think the belief is that when things are either a bit more complex and whether it needs a lot of integration that you probably need full time focus... and I think that’s why structurally, people probably you know convince themselves currently that it’s best to literally structure for utilisation...”. “...is also I think it’s got a bit to do with probably some competence issues and the perceived competence that people either have or don’t have or can shop in, because it is much easier”.

Integration function: “I don’t think the decision is always necessarily with her, I think she is the coordinator of the total effort [referring to a specific strategic imperative]”.

Formal working group: “...make these mandating and steering, you know, have all these names, all these committees. A lot of it [decision making and alignment] actually happens there, a bit by consensus, so what’s good is then that it is immediate binding, what’s bad is that it can take a long time. t probably does protect you a bit in the case of where there’s either strong personalities in the system or people with -- I don’t know -- maybe it’s perceived but lots of power... so there’s lots of these...almost functional decision forums that’s been created to deal with it. Now, the one thing you solve is you get more consistency throughout the company, but its slower, yes, it does get a life of its own after a while”. “I think by driving it very functional via committees and stuff does make it slower. Do you make less mistakes that way? I’d like to think that’s maybe the counter to saying...”.

Work processes: “if you take the work management system within operations, to a certain extent that the whole thinking around the whole model is to -- yes as you say it drives efficiency but

		wherever it doesn't work, I still expect like some of the leaders to go: but this step is obviously not working for me so should I? can I? change it to some extent so you know".
Informal Mechanisms	Integration	Culture: "I'm actually hoping the current change in culture in the organisation, where hopefully more and more people are allowed to challenge and ask questions, you know, and say but can I please understand why we're doing it this way. There is no real formality to it. But I mean hopefully, you know, that will at least, I don't know, get people to think twice sometimes". "So, leadership style obviously influences that a lot; but also, the culture. I'd like to think; the values, play a role because if you inherently don't believe that you can or can't do it; then I mean that's value driven". "...the buildings we sit in, or the clothes we wear also affect these things in an informal way".
7/A		Functional Role: Executive
Formal Mechanisms	Integration	<p><u>Intentional conflicting</u>: "...but I think it enables you tremendously to actually identify improvement opportunities and to identify the areas where the strategy could or should be focusing on. So, So for me, I think it's, it's actually, it's extremely important that the individuals or entities that inform corporate strategy, that a lot of the voices are from the areas and the places where the people actually understand the place from which you come..."</p> <p><u>Clear roles and responsibilities (KPIs)</u>: "Well, what definitely is needed, you definitely need very strong support from, in our case, the executive committee so, so that these type of initiatives is something that gets measured, it gets reported, it needs to be discussed by the [inaudible], there needs to be incentive structured around it to make sure people know that we're serious about it. I think what supports it is showing the need showing the case for change for why you can't just stagnant why you can't just stay and continuously milk this cow". "And it's a tremendous challenge, to have clear roles and accountabilities, if you have two centres from where both want to take ownership of that theme and drive the improvements, because there can only be so many budget owners, there can only be so many decision makers to ultimately make a call and say we're pursuing A and not B, or we are implementing C and not D. So, so, it actually becomes very challenging". "People with priorities set by different line managers that work here. So, you can only work for so many bosses at the end of the day".</p> <p><u>Communication</u>: "You need to improve how the macroeconomic environment is changing and eating up whatever gains you think you've got today and. So, and I think explaining that and having</p>

that conversation at the appropriate time, once a month, once, whenever, with the, with the whole workforce is key”.

Centralised structure: “If from group, from head office perspective. There is, there is functions formed, or their own management structures, etc. to, again, integrate and coordinate what's happening throughout the group to avoid duplication that makes a lot of sense, to leverage lessons learned and share what's happening and give feedback to the GEC”.

Collaborative prioritisation: “So now some of the budgets was moved. And now there’s, there’s a long tedious process to convince a group entity to spend money on initiative, ABC with us versus CDE with another entity”. “So that there is line of site and there is prioritization there”. “People with priorities set by different line managers that work here. So, you can only work for so many bosses at the end of the day”. “what becomes almost a nonsensical discussion is saying that you've moved the budget, then you can now dictate what work will happen where. Work still needs to happen through people, people that's employed here”. “the whole time, if that's the first thing you cut when there's cash con-- concerns, you not going to have a sustainable improvement portfolio. It'll start and stop and start and stop”. “...this is what I'm doing this year to improve this situation, doesn't matter what else happens I need to have that balance”.

Matrix organisational structure: “where there was a small team. And that's all they did, is that they consolidated information. They reported back and they said, Yes, we think we're on track, but no we aren't. But the prioritization of ideas, the execution of those, the accountability to implement is all left with a specific hub or specific business entity”. “And it's a tremendous challenge, to have clear roles and accountabilities, if you have two centres from where both want to take ownership of that theme and drive the improvements, because there can only be so many budget owners, there can only be so many decision makers to ultimately make a call and say we're pursuing A and not B, or we are implementing C and not D. So, so, it actually becomes very challenging”. “People with priorities set by different line managers that work here. So, you can only work for so many bosses at the end of the day”. “what becomes almost a nonsensical discussion is saying that you've moved the budget, then you can now dictate what work will happen where. Work still needs to happen through people, people that's employed here”. “And that's the key thing that we've seen with every time, an initiative gets pulled up to head office, in terms of the management thereof, if it is true management and not just coordination. The challenge is in executing that, because there isn't resources that report into those structures, the resources report into the management

	<p>structures locally”. “So, so, if there isn't buy in, in terms of a specific focus area, there is not that much support. It's only support, if it is something, we believe that adds value that [we] will make people available for...Everybody plays nicely together. Yeah. But if that isn't there, if there is a difference of opinion in terms of No, but we don't think you must be working on this. Oh, no, I don't agree with your priorities, then this model doesn't work”.</p> <p><u>Integration function</u>: “...with our size and the number of people number of possible ideas and initiatives, you need some central place to pull it all together”. “So, we do need a couple of people to, to liaise within the technical support fraternity and then also into operations as well, to pull those things together”.</p> <p><u>Reporting metrics</u>: “So it's a bit of a chicken, egg, the better you are at putting these, call it dashboards, my analogy of a car's dashboard that tells you what to do, the better you are doing that the more you free up your, your talent pool, to actually come up with ideas to improve the whole system”. “If reporting becomes too cumbersome, if the tracking thereof becomes too cumbersome. If people are personally held to anticipated outcomes, I think you're going to also get funny behaviour where, guys are just not going to commit...They're just not going to tell you about ideas, because they will be scared that they'll be held to deliver on them...”.</p> <p><u>Formal working groups</u>: “...monthly technical performance meetings that was instituted was, in fact to actually consolidate all improvement initiatives in the different, the 8 operations areas. So that there is line of site and there is prioritization there”. “I think, casual conversation about, we should improve this or we should change that. But I guess none of that will come to fruition, especially if you need money and people to drive it, if it's not taken to that platform. That's at least the intention, it's the intended business process”.</p>
<p>Informal Mechanisms</p> <p>Integration</p>	<p><u>Culture (ownership)</u>: “I think we are specifically we're in a much better position to influence strategy than anybody else. So, I need to, to acknowledge also and take ownership of my ability to steer an influence strategy...”. “...ownership, saying that I need to own the future, I need to, I need to recognize that I have the ability to make the future”.</p> <p><u>Conflicting</u>: “I think you need to be brave enough to stand up to the system that will want to protect itself...”.</p> <p><u>Collaboration</u>: “...whatever needs then to be discussed and agreed and aligned to make sure that whole “troyka” that production, maintenance, technical...supports it and agrees to it”.</p>

	<p><u>Overarching vision:</u> “And it was also, what's very interesting now, given where the company is currently at, in terms of capital, availability, the organization's appetite for pursuing new things, alternatives, even stock standard improvements, all of a sudden, reduces very, very quickly”. “was coming up with focus areas, strategic focus areas that tries to have this balance of protecting current day operations through new monitoring systems, tools, capabilities, better prediction capabilities that you can almost give to operations to say but this is what will protect you currently, this, this is your warning system, that'll give you a heads up when these issues... But at the same time, the more senior that our engineers were and the more experienced they were to give them the opportunity to say utilizing your knowledge of what we've got, pull it into the future”. “So it's a bit of a chicken, egg, the better you are at putting these, call it dashboards, my analogy of a car's dashboard that tells you what to do, the better you are doing that the more you free up your, your talent pool, to actually come up with ideas to improve the whole system”.</p> <p><u>Alignment:</u> “So, so, if there isn't buy in, in terms of a specific focus area, there is not that much support”.</p> <p><u>Time:</u> “So, if even if it doesn't mean additional resources or additional people, but making sure there, that there is a healthy portion of people's time is actually spent on it, and that the business rather supports that...”.</p>
8/B	Functional Role: Director
Formal Mechanisms	<p><u>Integration</u></p> <p><u>Flat organisational structure:</u> “The guy that brings in the work brings it to the, what we call, steering committee before the directors in the organisation and at least two of the guys will be required to make a decision”. “By deciding who is leading it and who is the name of the required person on the job. That's the only decision we make. The rest is managed by those guys themselves”.</p> <p><u>Team composition:</u> “That initiates the changes required and directs the organisation in a certain direction but if it is a specific thing that fits other people we will just bring them in in the beginning so you have to fit your core competencies to the situation”. “It's a combination of availability and competence”. “No, it's about a team. You have to have a guy that focuses on the development side and you have to have a guy that focuses on the implementation side, the project team, and then in combination they have to manage it. The developer needs to develop to a point where it can be handed over and the integrator needs to go and implement that, and he has to agree that the package is implemented well enough”. “Yeah, I think on any level you have certain people that's better at things and if you use them in that role it's just better”. “Depending on what type of</p>

	<p>job it is we have access to 11 people inside the organisation and at least about 20 outside the organisation on short notice and then you put together a team that has the combined capability to support the objective”.</p> <p><u>Work processes:</u> “...and a good hand over culture”. “You fix your systems and your procedures and your what-have-you the moment that you have that issue and then you do the debrief”. “So, sometimes we get a job that is a business evaluation, sometimes we get a job that’s the facilitation of a business or a project and sometimes get a job where we have to do design and each of those we have to re-adapt our systems procedures and skills base to support the client”. “We also have, inside the organisation, a variety of processes and procedures that we can modify and adapt according to client requirements”.</p> <p><u>Institutionalise:</u> “So you have to implement the project where you use the tools and teach the guy and then he will use it”.</p>
<p>Informal Mechanisms Integration</p>	<p><u>Collaboration:</u> “And some people are less risk averse and some people are more risk averse and the guys that are more risk averse they don’t start projects like that. They wait for more clarity before they participate and that’s life. That’s now the difference between the exploit and the explore people. The explore people will take on more risk. The exploit people will take on less risk. That’s the nature of their makeup”. “I know that the explore people need to be turned at a certain time. You need to back off. You have to hand over and you have to understand that. So if you have to manage both of them you have to know that the guy that is exploring will want to keep the baby and keep on exploring and polishing the baby and the guy that wants to exploit wants to take over and normally he’s slightly more directive than the exploit people so he can come over as a bit harder. You also have to give him his airtime”. “I think if you watch closely that the moment they start to talk about the front-end side and the development side implementers will start to lose interest and they will start working in their phones or doing something. And if the discussion goes over to implementation the developers will start to lose interest and you have to watch that and bring them back into the discussion because the handover needs to take place properly and they need to feel to be a team and not two separate groups and they easily because of the nature of the type of people that work there. They naturally go into two separate groups”. “Just about every organisation has two types of people. You have the developers and you have the implementers, as the core competence of the person...And you have to have a mixture of those...”.</p>

	<p><u>Conflicting</u>: “We always have conflict, but positive conflict. We always have different views and violent discussions-- but in the end we make the decisions”. “In many meetings I think if you watch closely that the moment they start to talk about the front-end side and the development side implementers will start to lose interest and they will start working in their phones or doing something... you're going to ask him a question and if he starts to explain you ask the implementation guy if that's how you're going to implement it”.</p> <p><u>Culture</u>: “We are, to a large extent, a voluntary organisation”.</p>
9/A	Functional Role: Executive
<p>Formal Mechanisms</p> <p>Integration</p>	<p><u>Work process to enable empowerment</u>: “...you need to be someone that really allows accountability to team, to drive activity”. “I think by doing that you'll see you'll end up with much more broader thinking type individuals”. “we need to allow accountability to teams that are delivering...”. “So, we're just here to enable them to get to the outcome, but they own what was developed by themselves. So, out of the entire approach is to give ownership and teach people”.</p> <p><u>Centralised structure</u>: “...we're trying to ensure we're doing the right from the limited funds that we have”. “So, where we are is, we're working on using standard techniques and standard capabilities. And, for the digital team and the organisation in general, we need to migrate to more -- new ways of working and a different approach towards business”. “So, my team is responsible for more strategic -- and how do you put it, more positioning of what you want to do, from a company perspective. And in normal circumstances the businesses should execute. But, for now, we kind of have a combination of that because it's very dependent on the majority of the business itself [what their capabilities and availabilities are]”. “The old execution activities should end up moving into a business...It's going to change based on company maturity to execute the mandate”. “...their strategies independently, it may not align to the overall direction of the company, because it could have some conflicting direction. So, for me I think that it's important that it is centralised, and it's co-created by the businesses and executed by the businesses”.</p> <p><u>Collaborative prioritisation</u>: “because [the strategy initiative] takes resources which is time, money and people. We have other things as well on the table that takes time, money and people. So, I think [it's] difficult sometimes having that portfolio conversation with the businesses; to align on the importance and the requirement to actually pursue [strategy] initiatives”.</p>

	<p>Institutionalise: "...we deploy something, we have a full change program that goes with it in a full capacity build up that goes with it". "So, before we started, we actually took all the individuals on a boot camp for them to understand how to think differently when they're approaching this solution that they're going to come up with". "So, we then would put it into the standard operating procedures and almost monitor it for six months to roll out in the business unit, before we say it's implemented". "...digital academy that we launched, and the digital academy really just helps people think in a digitally enabled environment".</p> <p>Formal working groups: "...we created a steering committee that's consisted of the GEC at that time and a GEC approved society...". "...digital performic committee, in which all the [Exco members] across the board sits in, so when we share information at that committee on a continuous basis". "But over and above that, I have a one on one meeting with every [business division manager] in a two-month cycle".</p> <p>Organisational structure: "And we're not very hierarchy driven".</p>
<p>Informal Mechanisms Integration</p>	<p>Collaboration: "...strategies are formulated with the entire organisation". "...a centre would never develop a strategy independently without business intel within which it is executed". "But it's a...conversation, it's new ideas; it's a different way of working. We're very open from that perspective, because it's still a new space, digital is still maturing generally from an external perspective as well. So, we very open to understand new ways of doing work that's going to make it -- make the transition of [the organisation] to a more digitally enabled organization, very smooth". "But over and above that, I have a one on one meeting with every [business division manager] in a two-month cycle. So, that I understand the specific things relating to their business and what they plan to drive". "And then also my team -- my team also has specific business units that I allocate to each of them; but then they engage with the business units at a [business unit manager] level and then their teams engage at a certain level and below".</p> <p>Culture (control behaviour): "So, we're just here to enable them to get to the outcome, but they own what was developed by themselves. So, out of the entire approach is to give ownership and teach people". "And then the idea is then when we walk away, they produce the same technique in another area in their business with very little intervention from us. And then that's how the culture will eventually change...". "But I think in my space, we are demanding that people have over and above the standard way of working; in different way of thinking...".</p>

	<p><u>Seek different viewpoints</u>: “Based on what our peers are doing and what consultants are saying as best practices as well. So, we try to marry that, but it’s not a easy process. It takes time and it takes effort, because everyone is at a different pace...”</p> <p><u>Overarching vision</u>: “...it will create some pace and some direction, because then we’d have buy-in, of the strategy by people and it will all be moving in the same direction...it’s important that it be centralised and co-created by the business and executed by the business”.</p> <p><u>Networks</u>: “So, that does take a lot of time and effort and the way we do it is I think besides having a very strong internal network and we have a very strong external network...”</p> <p><u>E-coordination</u>: “Over and above that we’ve created obviously digital tool guides -- websites where everyone can go in and look at information; we have a digital web page; we’ve got a SharePoint site, which you can look at; we’ve got a group -- WhatsApp group that you can join”.</p> <p><u>Alignment</u>: “I think once we think that we’ve aligned that digital is a business imperative in the company, but if you go to specific [business unit], we are competing initiative because digitalisation takes resources which is time, money and people”.</p>
10/A	Functional Role: Head of Department
Formal Mechanisms	<p><u>Integration</u></p> <p><u>Work processes to solicit and push ideas and projects</u>: “And they are then also skilled enough to also on their own implement a little bit of the exploiting and new kind of development so we’ve built it as an COE (Centre of Excellence) at the top to support and help businesses scale but within the businesses below it there’s also a structure that can do both of these things should the opportunity arise”. “Yes we like to work together as an integrated team so we do have line of sight...”. “So it’s a bit of a combination of using the known and proven concepts and then scale them really fast to maximise the value that you get for your investment”.</p> <p><u>Formal working group</u>: “want to form what I call working groups where people who have an interest in this initiative or this technologies of each of the OME’s or each of the groups in [inaudible] will have representation on it...get input and feedback on what is happening elsewhere...would be able to put requirements on the table...”.</p> <p><u>Require safe environment to explore</u>: “...especially when you start influencing and impacting the established highly interconnected, interdependent value chains so the moment you start experimenting with something like [business unit] for instance people will run away and they want</p>

to crucify you if anything goes wrong, so it's better to move in small steps...". "and on the other side where we do have a few of these new technologies and new ideas that would be tested in smaller parts of the business, so we will use the agile kind of approach and say that we are going to test it in this own environment when standards are known area where we can manage the risk and then thereafter once we've proven it, we can then scale it again". "...sometimes you have to let people fail for them to learn and to improve and that's why if you work in an agile way, that risk is a lot smaller, in terms of failing and the cost thereof is a lot lower". "scouting and ideation component which like the 10 percent that I've spoken about where the people are going out in the market and they're looking for new technologies and applications that can be utilised to deliver single value objectives and bring that back into the business and try and test it in smaller areas".

Flexible organisational structure: "You can start to decentralise to a certain extent. You can put some of the skills that scientist who's in the business so that they can start running their own, solving their own---choose without having to come to a central COE and over time you can migrate most of the control over to OME's when maturity is really high and then all you retain is a very small COE where the real specialised skills are sitting in terms of total project management and highly specialised tools, skills and things like that". "if you look at my structure on paper it looks like its non-existent and the reason for it is that is it's a flexible structure so it grows and shrinks as your number of things that you're working on in the business...".

Centralised structure: "we found that there were quite a lot of these initiatives that were duplicated and the learnings were not shared across the business so what we found in the way that we need to enable the business going forward, is we've identified certain themes of initiatives that we want to drive and support centrally from the digital office perspective that can be scaled across [organisation]". "...when you start off ...the accepted approach to do that is to centralise...you have a journey. When you first centralise you get the processes, the methodology and the tools standardised, then as soon as maturity in the business starts increasing and the guys are understanding the process then you pick up the capability, the skills. You can start to decentralise to a certain extent.

Reporting metrics must be aligned: "KPI's that are not aligned is another big issue...".

Work processes to enable: "those are self-managed...teams and once you have agreed what the objective is with higher management, the team executes the whole thing". "The senior management can get feedback and give input, but they don't take the decisions. You have to have

	<p>autonomous teams in this case make it, to get it to work really”. “You give feedback back into those forums based on that so you don’t go into the detail just report back are we adhering to targets and how’s delivery going and things like that, but the decisions based on how we execute and what the products are that we are building sit with the delivery teams”.</p> <p><u>Work processes to align:</u> “And if you have more than one area or are working on certain products and you share resources there is a concept called scrum of scrums and it looks at the interdependencies of the different areas and then based on the requirements of each area, you assign resources to that...”. “We are setting up also a digital SDP forum...and this is where we as a digital office went to the [business division managers] of all the areas...The things that are happening, we bring their requests for a team, their requests for approval or request for support and things like that, so we socialised that at a high level, we get binding, then it goes to the CI committee and after that to the digital investments board which is chaired by [the CEO]”.</p> <p><u>Organisational structure:</u> “...we called it the zippered application so for a person in this part you have like 4 people and in this part you 4 people and you link them together like a zipper...”.</p> <p><u>Institutionalise:</u> “And they are then also skilled enough to also on their own implement a little bit of the exploiting and new kind of development so we’ve built it as an SOE at the top to support and help businesses scale but within the businesses below it there’s also a structure that can do both of these things should the opportunity arise”. “...so those guys are then responsible for owning the solutions and the problems in the business”. “So our objective is over the next 3 years or so is to start to decentralise the control the hold at the moment on digital in Sasol and for it to be more seated within the different [business units]”. “execution part and we have people who understand how to scale and how to evaluate and how to drive opportunities through to implementation and we support the businesses that develop their own digital innovation teams...”.</p>
<p>Informal Mechanisms Integration</p>	<p><u>Collaborate:</u> “So, it’s more coming from the business perspective, looking for a tool to solve the problem than the other way around”. “our teams get together on a regular basis, we have shown and tells where people would show what we are doing this week and people can, everybody can join, understand what’s happening...”.</p> <p><u>Social integration:</u> “...so that you socialise it up and not down”. “...so that we can have understanding of what is happening so that we can then pick up the learnings from that and socialise that quickly across the business so that we avoid duplication again and we speed up the implementation of similar things in other parts of the business if other people are interested in it”.</p>

	<p>“that the teams that we put together when we do the global, have to involve the business themselves, because business always takes ownership of it”. “we socialise in our newsletter in the digital office and also things that happen, new developments, things that can be celebrated, stuff like that and so we try and create through a different number of channels opportunities to know what the others are doing”.</p> <p><u>Culture</u>: “Culture is one of the biggest stumbling blocks... [if you have a] control kind of culture then you struggle...”.</p> <p><u>Different viewpoints</u>: “get input or get feedback on what is happening elsewhere, would be able to put requirements on the table so it’s more like a community of practice”.</p> <p><u>Geographical proximity</u>: “In our structure because we have the scouting and ideation and the enablement and institution function in the same structure it’s very easy for us to have cross pollination between the different components and because we are sharing sometimes resources it is also not that difficult to let information flow between the different components of the structure”. “...our teams get together on a regular basis, we have shown and tells where people would show what we are doing this week and people can, everybody can join, understand what’s happening...”.</p>
11/D	Functional Role: Director
Formal Mechanisms Integration	<p><u>Work process to enable empowerment</u>: “When you empower guys like that you give them the opportunity to chase their own budget, so it’s like a small business that he himself is running and of course within the framework of the organisation...”. “...empower the guys to make decision at the right levels, so we have a decision-making authority matrix...”.</p> <p><u>Flat organisational structure</u>: “...then we have a rather informal, flat, structure when an employee can walk into the MD’s office...when you are not thirty thousand strong...A lot less stakeholders, a lot less red tape, it’s much easier to implement change. So, when you have that flexibility then you also foster a culture of, I have a say, I can influence this thing, I’m part of this business...”. “the lowest level of employee can walk, can walk directly to the MD with an idea that he wants to share...”.</p> <p><u>Formal working groups</u>: “...I mean it’s a journey, you learn these things as you work and then we have strategy alignment sessions where we discuss it.”</p>

	<p><u>Collaborative prioritisation</u>: "...the amount of energy that we spend on [explore] is tiny, because the return on investment, effort reward is unknown...". "...what do you need, okay now I'll structure according to what you need</p>
<p>Informal Mechanisms Integration</p>	<p><u>Relationships</u>: "Services' is people...people thus relationships. If you want to attract and retain the right staff, then you must create an environment where they are valued...". "...you must specifically put time aside for this relationship building...".</p> <p><u>Time</u>: "I'd like to look into it but I just don't have the time or enough detail and effort to put into it to figure out, because I've got the next deadline coming then execution".</p>

Appendix F: Research Question 3 Detailed Results

1/D	Functional Role: Managing Director
	<p>"So, the majority of our leaders are engineers and normally we are testing for high conceptual capability's. So that is what we are looking for in our leaders so people that are able to create context for themselves out of the explore discussions that we have, because the feedback that is coming from that is informal". "So for us in our explore exploit model an office needs to have the potential to grow to about sixty people in order to make sense for us if it is not going to be able to do that then it kind of isn't big enough to warrant...[understand the market and business requirements in order to explore]". "...he is going</p>

	to take all of his contextual knowledge of from the wireframe and he is going to put it down there with the two or three senior people that also come out of this office and out of the Vanderbijl office understand how the quality systems work have relationships with people in these offices so they can get things done pick up the phone I need help with this they know the person on the other side of the line they've got some conversational experience and can get that person to do stuff for them, because we have tried it other ways right". "It is a deliberate business intervention to say that you need an opportunity for some of the explore discussions to be taking place so that this information can disseminate. How much you can formalize, how much knowledge you can codify in your procedures in your routines inside the organization versus how much you have to leave informal, and that is like a continuous type of war".
2/C	Functional Role: Head of Department
	"connecting with people" "articulate the purpose" "it should be bottom-up" "communication" "buy-in" "deliverables or what is it that they want or see themselves achieving within that vision". "I don't spend a lot of time at the operations but what the connections that or the networks offer ensures that I have relevant information that comes to me from your production site to where I am without having a formal process so having an informal relationships with people to ensure that you understand what is happening in the business and that you are then able to react according to make the right decisions".
3/A	Functional Role: Executive. Environment: Technical, integration function temporal separation.
	"ability to influence, you should be able to sell the idea, the individual should understand how to talk to the priorities of the leader that eventually needs to ...support this initiative. The ability to...sell it as a priority". "I think that individuals that perform this role needs to be able to close the door and focus on thinking a bit differently and trusting the process that is being followed there because it is much different from day to day exploit function, maybe also the willingness to take a chance to work in an environment of uncertainty...put your name to something with a little bit of uncertainty...willingness to fail..."
4/A	Functional Role: Head of Department. Environment: Technical R&T
	"...a critical thinker...be able to evaluate your opportunities...and not just...latch on to one idea". "...be willing to work with people". "...you can't go and sit in your office and read and read...and try and explore because at the end of the, even if you come up with the most incredible solution, you still got to be able to sell that to somebody...be able to collaborate". "...you've got to have a good business mindset [and not just focus on the technical requirement]". "...good communication". "you've got to be able to persuade and influence your stakeholders, the company guys you're working with, you got to be able to build those relationships". "She's got to be able to say, okay, the idea you've come up with is not necessarily aligned with what we are doing today. But I can understand, why you are doing it". "I don't have any direct reports, I used to, in my old

	<p>position, but everything you've got to do, you got to be able to work with a team, you got to be able to bring people together from different areas. And you've got to be able to make them work towards that common goal, which is why I like the task team approach when there is a big problem because, Like I said, everybody leaves the day to day grind, and just focuses on that one task. And I think that's why a task team approach often works so well when you've got a bit of a crisis is everybody can just focus on that one thing”.</p>
5/A	<p>Functional Role: Specialist Business Development. Assurance. Previous explore role.</p>
	<p>“...development group at that time was a mix between plant and project support...so you had the expertise of the area...but you could swap between [explore and exploit] and for me that was ideal. You need to cultivate a group of, in my mind, engineers that are comfortable very, very early on with ideas”. “The thing is you’ve got good technology. You’ve still got...teams that focus on project implementation. They're not looking for work. They're executing work. So where are the guys that-- and that’s why I keep on talking about business development because I think in my mind business development should be the guys going and finding the opportunities”. “So it’s absolutely personality driven”. “but the fact that they could interact and they are sitting in the same-- and you could prioritise”. “Why does he have to fit into a structure. Create a position for him because now you’ve got that individual”.</p>
6/A	<p>Functional Role: Director</p>
	<p>“When you try and build a team...try and get a mix of people that, hopefully we all have those characteristics [referring to the different requirements to be able to explore and exploit]. You take the collective...you get from let’s say completely conservative to very innovative – which is a dangerous world when we are talking operations sometimes. But having said that if you only have the super conservative, well guess what – nothing is ever going to change! So, by kind of getting that mix and challenging each other, you get hopefully a mix that works for your business”. “I think it depends on what kind of business you are in, but also what’s the situation”. “...there’s lots of skills that’s needed both ways and maybe the skills also changes [as you progress]”. “I put my people through the psychometrics and then have the one on one: and say well actually, you are the good contrarian, so don’t be too polite...”. “...if you as a leader understand your people, then the more informal way...some people you have to say: so, what is your opinion and others you just leave, they’ll tell you their opinion”. “So, yes, I definitely think as a leader you should try and understand who are those people, get to know your people a bit better. And yes, I’m a strong believer that when the chips are down or when there is a you know -- under stress, people’s natural talents come out very quickly and sometimes it’s not that nice -- [laughter] -- but however, once you know that, you then can also harness that and use it...”.</p>

7/A	Functional role: Executive
	<p>“...it's risk taking, you need to be an individual that is not scared of change. And is actually curious about how things could be”. “passionate about improving things not, not critical about what's wrong today, but, but passionate about using gaps in processes and systems today to improve it. So a healthy dose of energy I think is needed”. “...brave enough to stand up to the system that will want to protect itself”. “...need to protect certain people resources whatever money also to saying no, this is what I'm doing this year to improve this situation, doesn't matter what else happen. I need to have that balance”. “...you need to be able to imagine a different future not, not be not be just a taker of somebody else's picture of what they think the likelihood, or the opportunities could be”. “I think we are specifically we're in a much better position to influence strategy than anybody else. So, I need to, to acknowledge also and take ownership of my ability to steer an influence strategy, and not just sit and complain about the strategy”. “...you get very frustrated, very demoralized, when you continuously feel like you need to fight the system, fight new people and your ideas quite often you need to protect them you need to say but look, we are on a journey we are improving. Maybe not at the rate or the pace somebody will want us to or maybe not in the direction that's now 100% aligned with every single individual's view”. “And, but yeah, I think that's why it's good to also rotate individuals because that, it is draining”. “the whole time to be cognizant, okay so where is the company now, where is my people now, where does the heartbeat survey look like...”. “I take it myself in my new role now. I think there's opportunities galore to change the world. I hope I still feel that way in three years' time when I've not conquered the world. But at-least I've moved a little bit. I hope I can just leave a little bit of something better behind and say that that was me”. “...got to be people that can still dream and think that can change the world”.</p>
8/B	Functional Role: Director
	<p>“It's critically important to understand that they are different. The explore and exploit people are different”. “respect both and you have to make them both feel important because they are important and you have to give them airtime but you also have to manage them not trespassing if you know what I mean”. “You respect them, you have to give them airtime so that you manage them and you have to understand both worlds to be able to do that”. “But the most important thing for me is to understand where my limitations are and where I have to hand over to the other guys and try and teach that to everybody to have the respect to both sides”. If you have a team that works together well you have a good project and the project will work. If you have friction and fighting in the team you have a bad project, guaranteed”. “We work that way. That's us absolutely the way we work. In one case the guy couldn't go on a specific assignment so we just stepped in and did his part. We didn't even change the remuneration strategy which was agreed beforehand”.</p>

9/A	Functional Role: Vice President
	<p>“...a leader... someone that’s not traditional thinking”. “...willing to let an idea flow and have a conversation until you decide maybe it’s not the right thing to do... I’ve learned to allow myself to let those conversations happen”. “allow accountability to teams that are delivering”. “...optimizing the use of skills... it’s not about the individual performance anymore, it’s about a team performance”. “...broader thinking type individuals [not just knowledgeable in their own function]... you’re not just going to think about technical solutions; you’re going to think about the people impact, the budget impact; you’re going to think about...external environment... but you need to allow that to happen”. “I think to want to be very open-minded...”. “...admitting what they currently have [and don’t have and pull in the required skills]”. “So, you need to be able to build businesses that are able to be sustainable in an ever moving workforce environment”.</p>
10/A	Functional Role: Senior Manager
	<p>“...people need to be able to move away from centred control to more assertive style of leadership”. “So, you need somebody who would understand the role that the leader is playing in enabling a team to deliver on a certain project and not to be a manager to control a set of people to achieve your objectives so there’s a slight nuance but it’s also a very important one that sometimes is a very difficult thing to do for certain individuals”. “So, you need somebody with a high EQ able to understand what impact certain decisions would have, empathy for people working in a delivery team”. “You need a lot of trust in the team because there’s little control from a high level and the decision-making sits as decentralised down”. “...but also from the delivery team to the leaders to make sure that if we make a decision we not going to get crapped all over because it’s not aligned or that we’ve taken the wrong---sometimes you have to let people fail for them to learn and to improve and that’s why if you work in an agile way, that risk is a lot smaller, in terms of failing and the cost thereof is a lot lower”. “collaborative leadership”. “So you have quite a wide understanding on things like supply chain, [inaudible] organisation, operations, finance and things like that in that individual but the part that sits on top of the line is the ability of the individual to lift him or herself up out of the business and have what we call the helicopter view somebody who can understand and look from the top and see the bigger picture...”. “at least needs 1 person like that who has a holistic view over the business, wide enough experience but also linking up to other thorough understanding of the whole project and the impact that it may have on business”.</p>
11/D	Functional Role: General Manager (Executive). Operations and new business development
	<p>“...I can influence this thing, I’m part of this business, this is my business as well” [referring to the fact that if the organisation creates an environment of empowerment people are more willing to explore]. “...understanding that you are somewhere on</p>

this line between exploit and explore, because there are people that do not want to do explore, 'don't waste my time'...it will cost a lot of money with some unspecified return...all the problems...so in the first place, you have to get people to buy-in". "...you need a vision of we actually need to be doing this because it is not a self-evident truth for everyone depending on what it looks like, your competitive environment and your clients". "...this is where we are aiming towards...you need some desired end state...wouldn't it be great if we could get here? Now you need some type of stretch target...then people must be able to see how the work they are doing now is contributing to reaching that goal somewhere in the future...so then it is with incremental changes to get to the end goal". "...need to create the environment where people have the freedom of 'when I'm chasing this target what do I need to do [people can determine for themselves how they get to the target]...so a little bit entrepreneurial I would say...and the environment is such that he can bring entrepreneurial [thoughts] to the table, we are flexible to accommodate within our rough framework".