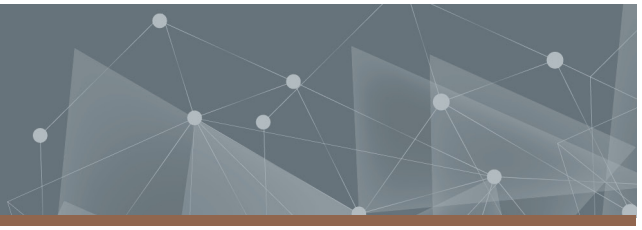
CHALMERS
UNIVERSITY OF TECHNOLOGY



Separated, yet integrated: exploring how ambidextrous firms manage integration of structurally separated units for exploration

Master's Thesis in Management and Economics of Innovation

LISA MATTUS
ASTRID OLAUSSON

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF ENTREPRENEURSHIP AND STRATEGY

CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2024
www.chalmers.se

Separated, yet integrated: exploring how ambidextrous firms manage integration of structurally separated units for exploration

LISA MATTUS
ASTRID OLAUSSON

Department of Technology Management and Economics
Division of Entrepreneurship and Strategy
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2024

Separated, yet integrated: exploring how ambidextrous firms manage integration of structurally separated units for exploration
LISA MATTUS
ASTRID OLAUSSON

Department of Technology Management and Economics
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone +46 (0)31-772 1000

Typeset in LaTeX
Gothenburg, Sweden 2024

Separated, yet integrated: exploring how ambidextrous firms manage integration of structurally separated exploratory units

LISA MATTUS
ASTRID OLAUSSON

Department of Technology Management and Economics
Chalmers University of Technology

Abstract

In the pursuit of long-term survival in the ever-changing turbulent business environment faced by contemporary firms, many turn to the concept of ambidexterity, seeking to optimize incremental and radical innovation simultaneously to compete in the present as well as the future. While extensive research has emphasized the need for structurally separating explorative and exploitative activities to succeed with becoming ambidextrous, scholars have pointed to the importance of a carefully managed interface between the two to facilitate the development and eventual transfer of radical innovation, as well as enable the enacting of synergies. However, empirical evidence on how companies actually organize and manage this balance between integration, to enable cross-fertilization, and separation, to mitigate the risks of cross-contamination, in practice is lacking.

The Volvo Group is an established firm with a long history of pursuing an explicit ambidextrous innovation strategy to achieve long-term performance. Currently, the Emerging Technology team, dedicated to the most radical form of innovation within the Volvo Group Trucks Technology (GTT) department, is revamping its operations to propel the organization's technological advancement.

Thereby, this multiple-case study, conducted on four companies in various industries, aims to explore how innovative, established companies with ambidextrous ambitions organize and manage the integration of structurally separated units for explorative innovation with the core operational business, as well as what major challenges these companies encounter in balancing separation and integration. Through 20 semi-structured interviews with key stakeholders in the integration process across all examined cases, and subsequent thematic analysis, the findings show that all companies examined employ both formal and informal mechanisms for integrating separated exploratory units with the operational structures. Further, the results reveal three prominent challenges impacting the success of these integrative efforts.

Keywords: innovation, ambidexterity, integration, interface management, balance, exploration, exploitation, cross-functional interface

Acknowledgements

The Master Thesis was conducted in collaboration with Volvo Group Trucks Technology (GTT) as part of the master's program Management and Economics of Innovation at the Department of Technology Management and Economics, Chalmers University of Technology. First and foremost, we would like to express our appreciation for the opportunity to conduct our study in collaboration with the Emerging Technology team at GTT, with a special thank you to our supervisors whose input has been essential for the thesis: Emma Mattsson, Matilda Wiklund, and Mikael Rönnholm. We would further like to thank all respondents across the case companies for devoting their time and effort to contribute to our study. Lastly, we would like to extend our warmest gratitude towards our supervisor and examiner at Chalmers, Kamilla Kohn Rådberg, without whose support, feedback, and guidance this thesis would not have been possible.

Lisa Mattus & Astrid Olausson, Gothenburg, June 2024

Contents

List of Figures

List of Tables

1 Introduction

This chapter provides the foundational context for the thesis, outlining its background, aim, scope, and the research questions guiding the study.

1.1 Background

Innovation has long been acknowledged as an important source of organizational renewal (Van Looy et al., 2005) and, in recent years, has come to be seen as fundamental for survival in an increasingly turbulent and complex business environment (Ojha et al., 2021). Forces such as globalization and shortening product life cycles have significantly intensified competition (Cooper at al., 2001; Siggelkow & Rivkin, 2005), requiring companies to exploit existing businesses and develop current products and solutions in order to ensure short-term competitiveness (Chen, 2017). Meanwhile, rapid technological change and the repeated sudden declines and demises of once world-leading companies in the face of disruptive change underscores the imperative for firms to simultaneously explore future businesses and opportunities by pursuing radical innovation (Atuahene-Gima, 2005). However, the incompatible logics of developing for the present, i.e. exploitation, and innovating for the future, i.e. exploration, have long puzzled innovation scholars (March, 1991; Tushman & O'Reilley, 1996) and has given rise to the well-known paradox known as the *"innovator's dilemma"*, described by Chen (2017, p.386) as *"the dilemma of how to avoid missing out on new opportunities while existing ones need attention."*

Ambidexterity has been proposed as a way for organizations to solve this dilemma by developing organizational capabilities to accommodate both logics (O'Reilley & Tushman, 2013; Chen, 2017), i.e. to both explore and exploit. However, diverse approaches as to how companies actually may balance the differing logics and become ambidextrous have been suggested. One approach that has gained widespread advocacy in ambidexterity literature is structural ambidexterity (O'Reilly & Tushman, 2008; Nosella et al., 2012), which involves the structural separation of exploration and exploitation into independent units (O'Reilly & Tushman, 1996). While endorsing separation as a means of simultaneously accommodating the paradoxical logics, ambidexterity scholars also stress the significance of a carefully managed interface to establish a certain degree of integration between the separated units (O'Reilley & Tushman, 2008; Van Looy et al., 2005). The differentiated units must be sufficiently *separated* so that their distinct internal alignments are not compromised, *yet* sufficiently *integrated* to facilitate the development and eventual transfer of explorative innovation into the core structures of the organization, as well as to enable the enacting of synergies between the two. To achieve this balance, companies may employ various types of formal and informal integration mechanisms (Hansen et al., 2019; Jansen et al., 2009; Gassman et al., 2012). However, in order to reap the benefits of such cross-fertilization, managers need to carefully orchestrate the points of integration to mitigate the inherent risks of cross-contamination (Hansen et al., 2019).

A company that has long pursued an explicit ambidextrous innovation strategy is the Volvo Group. The group comprises business units spanning a variety of business areas, including trucks

and construction equipment, and collaborates on shared functions across these sectors to foster synergies within the group. One of the units, Volvo Group Trucks Technology (GTT), leads the technology development for the group's truck companies and engages in joint development across multiple business areas. The unit undertakes development of a more incremental nature, enhancing existing solutions and aligning with current business trajectories, but is also responsible for pursuing more emerging technologies that may create entirely new technological paths and result in completely new solutions for the group. Currently, the Emerging Technology team, dedicated to the most radical form of innovation within the Volvo Group Trucks Technology (GTT) department, is revamping its operations to propel the organization's technological advancement. As a company with extensive experience in innovating through various approaches, there exists an understanding of how different types of innovation demand distinct managerial practices, and of the importance of maintaining diverse environments to foster both incremental and radical development projects. At the same time, the organization possesses insights into the importance of establishing connections and interactions between more radical units and the core organizational structure to optimize development and facilitate the transfer of innovations originating from the exploratory unit. While theory offers insights into the need for a carefully managed interface that allows for cross-fertilization while mitigating cross-contamination, limited insight is offered as to how companies actually organize this interface to effectively achieve such a balance in practice.

1.2 Aim and scope

The aim of our study is to investigate how innovative, established companies organize and manage the integration between structurally separated exploratory innovation units and the operational structures. Specifically, we aim to identify key integration mechanisms involved in facilitating the transfer of radical innovation from exploratory units, and in the enacting of synergies between explorative and exploitative structures, as well as explore challenges experienced by the different organizations related to the integration. Through a multiple-case analysis of four selected companies, we seek to gain insights into how established companies organize and manage the balance of separation and integration of explorative and exploitative innovation processes in practice. Additionally, we aim to deepen our understanding of ambidextrous organizational practices and their implications for innovation management.

1.3 Specification of Issue Under Investigation

To achieve the objectives of the thesis, our study will focus on examining the following research questions:

- How can innovative, established companies with ambidextrous ambitions organize and manage the integration of structurally separated units for explorative innovation with the core operational business?
- What major challenges do these companies encounter in balancing separation and integration?

2 Theory

In this chapter, theory pertaining to ambidexterity in organizations will be presented, along with a specific focus on theory concerning the integration between structurally separated units for exploration and exploitation.

2.1 Innovation in Established Firms

Scholars have long been in agreement about the importance for firms to prioritize both short-term and long-term success in order to prosper and survive over time, and that this is dependent upon their ability to find a balance between the paradoxical logics of exploitation and exploration (March, 1991; Tushman & O'Reilly, 1996; Gibson & Birkinshaw, 2004; Uotila et al., 2009). Exploitation refers to the refining and expansion of existing knowledge to improve efficiency and achieve incremental progress, leading to short-term success. Conversely, exploration involves experimenting and generating new knowledge that fosters more radical innovation, and thereby ensuring long-term survival (Atuahene-Gima, 2005). As noted by March (1991, p. 105) *"The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, devote enough energy to exploration to ensure its future viability."*

However, accommodating both is complicated by the fundamentally different logics of exploitation and exploration, calling for different routines, processes, and skills (O'Reilly & Tushman, 2008). The differing logics emanates tensions demanding a carefully orchestrated balancing-act of organizations attempting to engage in both (March, 1991). As explained by March (1991), exploring new alternatives reduces the pace in which existing capabilities are improved, and enhancing current processes reduces the attraction of pursuing new ones. Ultimately, focusing on one will evidently lead to a reduced focus on the other. Balancing this trade-off is further complexified by its presence at various levels within the organization, from individuals to the organization as a whole, and within the broader social system of the organization (March, 1991).

As the returns of exploitation are typically positive, predictable, and more immediate in time compared to the often negative, uncertain, and distant returns from exploration, incumbent organizations tend to overemphasize exploitation at the expense of exploration (March, 1991). The prioritization of exploitation may be further incentivized as exploration may threaten the existence of current organizational units (O'Reilly & Tushman, 2008), and as the cumulative nature of competence building encourages organizations to enhance prior experience rather than exploring new areas (Baum et al., 2000). Consequently, as argued by Chen (2017), most well-managed firms mismanage exploration. They succeed with exploiting existing technologies and capabilities in existing markets, but fail at capturing new opportunities. The tendency for firms to neglect exploration is further confirmed by the research of Uotila et al. (2009), finding that 80% of the 500 sampled firms in their study prioritize exploitation and would benefit from increasing their focus on exploration, particularly in research and development (R&D) intensive industries.

Moreover, the difficulty in managing the balance of exploitation and exploration is further increased by ongoing adaptive processes at various levels within the organization, which tend to favor exploitation over exploration. Positive local feedback loops reinforce the choice to focus on exploitation, leading to path dependency and a neglect of exploratory innovation (March, 1991). The imperative of sustaining exploration for long-term performance, according to March (1991), renders these processes possibly self-destructive.

2.2 Exploitation

In the widely referenced definition from 1991, March describes the concept of exploitation in terms of notions such as refinement, production, efficiency, selection, implementation, and execution. The concept has been discussed extensively in management literature and has been applied across various management theories, particularly in its relation to exploration (He & Wong, 2004). In the context of organizational learning and development, Baum et al. (2000) describe it as an approach to learning focused on local search and experiential refinement, building on existing certainties and routines to develop new knowledge. Similarly, Bierly III and Daly (2007), linking the concept to technology development, describe firms' engagement in exploitation as the leveraging of existing knowledge to rapidly develop new products and processes.

In contrast to the returns from exploration, the outcomes of exploitation are associated with high predictability and typically entail a shorter realization horizon as compared to results from explorative activities (March, 1991). An exploitative approach assumes the firm holds complete information about external opportunities and internal capabilities, with attention concentrated on existing businesses or ways of doing business (Chen, 2017). Involving low levels of uncertainty and high success rates, exploitation implies greater reliability, efficiency, and control, and can be guided by deliberate strategies with clear priorities to effectively pursue organizational goals (Chen, 2017). With the focus on optimizing efficiency, exploitation is commonly associated with mechanistic organizational structures that support routine operations and specialization (He & Wong, 2004; Lavie et al., 2010). The nature of exploitation further renders it appropriate to employ performance-based incentive structures to foster motivation and execution-oriented processes to effectively manage exploitative activities (Chen, 2017; Cooper, 1990).

While engaging in profit-generating exploitation is fundamental for ensuring current viability and may yield short-term success, an excessive preference towards exploitation over exploration risks of gradually rendering the firm obsolete and may ultimately lead to its failure (March, 1991).

2.3 Exploration

While exploitation concerns the efficient utilization and refinement of existing knowledge and routines, exploration concerns the pursuit of new knowledge and opportunities (Levinthal & March, 1993). Described through notions such as search, discovery, variation, risk-taking, experi-

mentation, and innovation (March, 1991), exploration fundamentally differs from the exploitative approach, which is primarily focused on operational efficiency (Luger et al., 2018).

Exploration is grounded in the belief that the firm does not possess complete knowledge of internal capabilities and external opportunities, necessitating the stretching or transformation of existing capabilities (Wang & Chen, 2015; Teece, 2007), or the development of new (Capron & Mitchell, 2009). Although explorative activities and their outcomes are vital for the long-term survival of the firm, as they generate new opportunities and organizational renewal, they often entail early failures and may negatively impact short-term performance (Chen, 2017; Arend & Chen, 2012). As March (1991) notes, the search for new ideas, markets, or relations inherently entails less certain outcomes, longer time horizons, and more diffuse effects compared to further development of existing ones. The contradictory natures of exploration versus exploitation calls for divergent managerial practices (Besharov & Smith, 2014) and involves different sets of activities (O'Connor & Ayers, 2005).

An explorative activity that requires firms to depart from their existing skills and capabilities to cultivate new knowledge is radical innovation (Jansen et al., 2006; Benner & Tushman, 2003), which has been widely recognized as an important source for growth and organizational renewal (Sandberg & Aarikka-Stenroos, 2014; Tellis et al., 2009). Radical innovation refers to the creation of products and technologies that have a significant impact on the market, providing completely new advantages, and on the firm, through its ability to create new businesses (O'Connor & Ayers, 2005). The outcomes can either align with the firm's current business operations, emerge in unexploited *"white spaces"* between them, or in *"multi-aligned"* spaces potentially benefiting multiple lines of business (O'Connor & Ayers, 2005). The extent of organizational disruption from radical innovation outcomes thus varies based on the degree of fit with existing operations, ranging from minimal for closely aligned innovations to significant for those necessitating the creation of entirely new divisions. As radical innovations may appear in areas residing outside of the current businesses of the firm, Miles et al. (2017) argue that an extensive focus on existing customers may encourage prioritization of more incremental innovation, rather than unaligned emerging market opportunities.

For firms to succeed with radical innovation and build a fully developed radical innovation capability, O'Connor and Ayers (2005) describe they must manage three sets of activities and capabilities, and ensure a smooth transition between them: discovery, incubation, and accelerated growth of new businesses. The first capability, *"discovery"*, involves the creation, recognition, elaboration, and articulation of opportunities. Discovery activities encompass a range of approaches, including internally focused laboratory research, exploration of internal and external ideas and opportunities, technology licensing, and strategic equity investments in promising small firms. To succeed with these activities, firms need to develop skills related to exploration and conceptualization, concerning both technical, external search and scientific discovery.

The *"incubation"* capability refers to the firm's ability to evolve business opportunities developed in the discovery phase into business propositions, that is, a concretization of what value the technology could offer the market, the proposed landscape of the market itself, and the suggested business model. A business proposal is considered to have reached sufficient maturity to proceed from the incubation phase once it has been tested and induced excitement, according to O'Connor and Ayers (2005). The authors describe that skills required for succeeding with incubation activities relate to experimentation and include technical skills as well as market learning and the creation of new markets.

The final capability proposed by O'Connor and Ayers (2005), *"acceleration"*, concerns the acceleration of an emerging business proposition to a stage where it can survive independently among other business platforms in the unit to which it is transferred. For companies to succeed with activities related to this capability, they must develop skills in investing to build the business and necessary infrastructure, as well as identifying and responding to market leads and opportunities.

In addition to developing these distinct organizational radical innovation capabilities, scholars have emphasized other factors influencing the company's ability to conduct and succeed in their pursuit of radical innovation. Some highlight the critical role of senior management and suggest that its support for radical innovation within the organization plays a pivotal role in the firm's level of engagement and performance within radical innovation endeavors (Gilley et al., 2002). According to Gilley et al. (2002), a lower degree of risk aversion among the top management team increases the organization's general innovation commitment and its engagement in cutting-edge technology. Research has further highlighted the integral impact of specific innovation roles in the development of the innovation, which can be undertaken by various individuals across the company at different stages of the innovation process, and which can have a decisive effect on the success of particular innovation endeavors. One such key role that has been strongly linked to the success of individual technological innovations is that of the innovation champion (Howell & Higgins, 1990; Jenssen & Jørgensen, 2004). Innovation champions are individuals within the organization who exert a crucial influence on innovation throughout its various development phases by actively promoting its progression through critical stages (Achilladelis et al., 1971). Rather than being formally appointed, innovation champions typically emerge informally (Tushman & Nadler, 1986) and operate by enthusiastically and vigorously advocating for the innovation across informal networks, sometimes even risking their own prestige or position to advance the idea (Schön, 1963). While the formal positions held by these individuals vary, literature describe certain common personal characteristics typically associated with innovation champions (Howell & Higgins, 19990; Jenssen & Jørgensen, 2004). Jenssen and Jørgensen (2004) describe that they, alongside other common traits, typically exhibit a high level of charisma linked to their ability to inspire and encourage other employees to increase their productivity. The authors further describe that great energy and drive constitute other key qualities of innovation champions, who many times must promote the innovative efforts over extended periods of time. According to Schön (1963), the presence of an innovation champion is particularly essential in the context of radical innovations, as it is seen as a necessity to overcome the resistance that major technological change

commonly provokes.

2.4 Ambidexterity and the Ambidextrous Organization

To manage the paradox of simultaneously innovating for the present and for the future, organizational ambidexterity has been proposed as a means through which organizations can manage both logics and achieve superior long-term performance (Andriopoulos & Lewis, 2009; Chen, 2017, Tushman & O'Reilly, 1996). O'Reilly and Tushman (2013, p. 324) describe organizational ambidexterity as *"...the ability of an organization to both explore and exploit - to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed."* By building organizational capabilities aimed at accommodating the conflicting logics, companies can effectively balance exploitation and exploration and thereby manage their inherent tensions (O'Reilley & Tushman, 2013; Chen, 2017).

While organizational ambidexterity has gained widespread acceptance in management literature as a solution to the challenge of balancing exploitation and exploration (O'Reilly & Tushman, 2008; O'Reilly & Tushman, 2013; Gupta et al., 2006; Chen, 2017), diverse approaches to achieving ambidexterity have been proposed. These approaches, according to Andrioupolus and Lewis (2009), mainly differ based on their emphasis on either separation or integration. While separation refers to the division of exploitative and explorative activities into separate organizational units, integration instead refers to the behavioral mechanisms that facilitate organizations in addressing exploitative and explorative tasks within the same unit (Raisch et al., 2009). According to Raisch et al. (2009), separation allows firms to retain different competencies for addressing the inconsistent demand resulting from current versus emergent business opportunities, while integration, instead, aids in managing the diverse demands imperative for achieving organizational ambidexterity (Raisch et al., 2009). The diverging views of how to manage the duality of separation versus integration are reflected in the main proposed approaches to achieving organizational ambidexterity: sequential ambidexterity, structural ambidexterity, and contextual ambidexterity. Each highlighting different dimensions and challenges for senior management (Gupta et al., 2006).

2.4.1 Sequential Ambidexterity

Sequential ambidexterity stems from the foundational proposition that different environmental conditions or strategies warrant different organizational structures (O'Reilly & Tushman, 2013). As explained by O'Reilly and Tushman (2013), this insight led to the conclusion that firms may need to rearrange their structural alignments over time. Sequential ambidexterity therefore proposes a temporal separation of exploitation and exploration, enabling organizations to move back and forth between the two, focusing their attention on one thing at a time, and thereby achieving organizational ambidexterity from a long-term perspective (Chen, 2017). However, Chen (2017) argues that switching back and forth between modes at the organizational level, requiring the

restructuring of strategies, structures and processes, may ultimately destroy capabilities and, therefore, does not view it as a viable long-term approach. Further, according to Tushman and O'Reilly (1996), for companies experiencing turbulent and fast-paced environments, sequential ambidexterity might not be a viable approach as these conditions may require exploitation and exploration to be executed simultaneously.

2.4.2 Structural Ambidexterity

To accommodate the simultaneous execution of the two, Tushman and O'Reilly (1996) instead propose a structural division of exploration and exploitation into autonomous subunits appointed to either exploit or explore. As explained by O'Reilly and Tushman (2008), the structural separation of exploration and exploitation is essential but insufficient. The approach also requires distinct internal alignments of the separate subunits as exploitation and exploration call for differing competencies, processes, systems, incentives, and cultures (O'Reilly & Tushman, 2008). Further, a common strategic intent and overarching organizational values to legitimate both logics, as well as structural mechanisms linking the subunits, are, according to the authors, vital to achieving holistic organizational alignment and facilitating the leveraging of shared assets. Due to the extensive separation of the subunits, coordination by top management is imperative as they will have to effectively manage the tensions for the approach to be successful (Chen, 2017). O'Reilly and Tushman (2011) therefore propose the key issue for structural ambidexterity to be one of leadership rather than structural. Moreover, Kelley et al. (2005) describe how the misalignment of expectations resulting from the conflicting logics of exploration and exploitation, and the related tensions, requires the instatement of a unified corporate-level strategy that clarifies the governance across the differentiated units. The authors explain how the results from their study suggest that the lack of such a strategy will lead radical projects, initially invested in by the exploratory unit, to subsequently be neglected by the business unit responsible for the commercialization. Clearly defined responsibilities for radical innovation therefore need to be instituted at various levels within the organization, which according to the authors further need to be partnered with support and involvement of top management to exude enough legitimation for the radical activities to be properly prioritized.

Some debate, however, exists surrounding how closely the different subunits should be integrated, as many scholars emphasize the need to buffer the exploratory units against the exploitative ones (Raisch & Birkinshaw, 2008). Christensen (1998), even puts forth the proposition of a complete separation as he deems it necessary for radical innovation to be pursued in the exploratory unit.

Structural ambidexterity has undoubtedly gained the most attention out of the different approaches for achieving organizational ambidexterity (Nosella et al., 2012) and because of its possibility for locally employed strategies, structures, and processes, Chen (2017) proclaims it to be the most practical and promising solution to achieve successful organizational ambidexterity. However, the author further notes that *"Although promising and practical, structural ambidexterity places enormous job demands on top executives [. . .] They can become the bottleneck of structural*

ambidexterity and cause structural ambidexterity to fail." (Chen, 2017, p. 388).

2.4.3 Contextual Ambidexterity

The above mentioned approaches both propose structural means as a way to achieve ambidexterity. However, Gibson and Birkinshaw (2004) instead advocate for the possibility of solving the created tensions at the level of the individuals, through contextual ambidexterity. This approach is described by the authors as *"...the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit"* (Gibson & Birkinshaw, 2004, p. 209). Gibson and Birkinshaw (2004) explain how the approach is achieved by creating a supportive organizational context where employees make their own judgments and freely decide how to divide their time between exploration and exploitation. The focus of contextual ambidexterity therefore contrasts the other approaches, as the emphasis lies on social and behavioral means as a way to integrate exploitation and exploration, thereby fostering shared values and facilitating greater coordination of the two logics (Andriopoulos & Lewis, 2009). Contextual ambidexterity thereby proposes a paradoxical approach to managing the tensions, instead of an either-or (Gibson & Birkinshaw, 2004). However, Chen (2017) questions the assumption that exploration and exploitation can thrive within a single organizational context. The approach may, according to the author, work well when new opportunities align with the organization's core activities but not for more radical innovation that differs drastically from current operations.

2.4.4 Combinatory Strategies

The different approaches support distinct ways of achieving organizational ambidexterity, but combinations have also been suggested by several scholars, where the different approaches may complement each other in enhancing the organization's overall ability to exploit and explore (Chen, 2017; Gibson & Birkinshaw, 2004; Andriopoulos & Lewis, 2009). For example, Gibson and Birkinshaw (2004) present contextual ambidexterity as complementary to structural ambidexterity as it could facilitate the coordination of the dual structures and foster shared values. Further, Chen (2017) proposes the utilization of all three approaches employed at different levels within the organization to mitigate the challenges of each separate approach, a concept he termed dynamic ambidexterity. To achieve dynamic ambidexterity, Chen (2017) argues that organizations should *"support structural ambidexterity at the corporate level, contextual ambidexterity at the business-unit level, and sequential ambidexterity at the project level"* (Chen, 2017, p. 392-393).

Moreover, as previously mentioned, the different approaches primarily differ based on their endorsement of either separation or integration as a tactic for achieving organizational ambidexterity (Andriopoulos & Lewis, 2009). However, Raisch et al. (2009) argue that the restrictive view employed by most ambidexterity researchers, focusing solely on one side of this duality, inhibits a comprehensive understanding, and the authors therefore propose a more open and paradoxical mindset in viewing the two. In relation to the described ambidexterity approaches, the benefits of utilizing a less restrictive mindset become noticeable as, for example, structural ambidexterity

which is strongly associated with differentiation tactics (Andriopoulos & Lewis, 2009), could be argued to still incorporate a certain degree of integration as top-management's coordination and integration of the different units, according to O'Reilly and Tushman (2008), is essential for the approach to be successful.

Therefore, a central inquiry for managers, as to how companies should actualize ambidexterity, becomes a question of which degree of separation and integration the organization should employ (Raisch et al., 2009). This view is further supported by Andriopoulos and Lewis (2009) who argue that combining separation and integration tactics fosters an embracing of the inherent tensions of exploitation and exploration, valuing both their synergies and distinctions, and therefore enhances overall organizational ambidexterity. As noted by the authors *"Integration tactics accentuate the importance of both poles of exploitation-exploration tensions. These social and cultural approaches [...] enable a paradoxical mindset. However, differentiation is also vital. Clearly focusing actions [...] helps maximize the distinct benefits of opposing poles"* (Andriopoulos & Lewis, 2009, p. 708).

2.4.5 Individual Ambidexterity

In addition to these overarching strategies for pursuing ambidexterity at the organizational level, the literature on organizational ambidexterity has emphasized the importance of the micro foundational perspective on the individual in understanding a company's ambidextrous, or non-ambidextrous, behavior (Birkinshaw & Gupta, 2013; O'Reilly & Tushman, 2013).

While the significance of the individual's ambidextrous ability becomes particularly pronounced for organizations pursuing a contextual ambidextrous strategy, as elaborated in Chapter 2.4.3, in practice all approaches to ambidexterity entail some degree of integration where the task of reconciling conflicting logics is partly ultimately placed upon the individual. In companies with structurally separated organizations for exploration and exploitation, the cognitive capacity of individuals to balance explorative and exploitative efforts, i.e. individual ambidexterity (Good & Michel, 2013), becomes prominent in both top management (Gibson & Birkinshaw, 2004; Lubatkin et al., 2006) and among individuals within the exploitative structure, to which the innovation from the explorative domain is ultimately transferred.

Diverse individuals have been observed to demonstrate differing degrees of individual ambidexterity, a pattern that certain scholars attribute to variances in underlying formative abilities (Rogan & Mors, 2014). Tempelaar and Rosenkranz (2019) argue that individual cognitive predispositions are critical in explaining differences in ambidextrous abilities among individuals, suggesting that this largely depends on their capacity to identify as *"role integrators"* or *"role segmenters"*. They posit that individuals who possess a greater ability to smoothly shift between role identities and integrate knowledge from various knowledge pools within a single task exhibit a broader thinking pattern, making them naturally positioned for ambidexterity at the individual level. Conversely, individuals who perceive diverging and simultaneous demands as more conflicting or challenging,

and who are more inclined towards clear, defined boundaries and mandates, are described as having a lesser propensity for ambidextrous behavior.

However, while individuals may posit varying cognitive predispositions for managing ambidexterity on the individual level, literature suggest that the ambidextrous ability of the individual can be nurtured through, for instance, the exposure to different roles with new cognitive frames (Floyd & Lane, 2000). While such expansion of the individual's cognitive schema may indeed better equip them for integrating explorative and exploitative requirements (Burke & Reitzes, 1981), the manner in which the individual integrates or separates these perspectives in various situations may, nonetheless, ultimately determine the effect of such actions.

2.5 Integration and the Transition Process

A central aspect for ambidextrous firms to succeed in finding the ideal balance between exploration and exploitation, as discussed in Chapter 2.4.4, is the question of separation versus integration of exploration and exploitative activities to manage the tensions inherent in the conflicting approaches.

For firms pursuing ambidexterity through unit-level structural separation of exploration and exploitation, scholars point to the importance of a carefully managed interface between the units for successful simultaneous pursuit of both (Hansen et al., 2018; Siggelkow & Levinthal, 2003; Jansen et al., 2009). The major challenge for these firms lies in effectively managing the integration of the structures in such a way that facilitates cross-fertilization while preventing cross-contamination (Hansen et al., 2019). A high degree of separation could imply increased innovativeness within the explorative structure but may hinder the successful implementation of radical innovation into the exploitative structure. Conversely, an excessively high degree of integration facilitates the implementation and leveraging of the core organization's resources but risks diminishing the degree of radicality of innovations stemming from the exploratory unit (Gassmann et al., 2012). O'Reilly and Tushman (2004) similarly describe the challenge of integration for ambidextrous organizations as the coupling of units in such a way that allows for the sharing of important resources from traditional units, such as cash, talent, and expertise, while simultaneously maintaining the focus of established units on their core functions and objectives.

The integration of exploration and exploitation for a firm pursuing a structural ambidextrous approach is constituted by the overarching transition process through which radical innovation develops from the purely explorative to the purely exploitative space, i.e., the transition process (Raisch & Tushman, 2016), and the involved integration mechanisms that couple the explorative and the exploitative units (Jansen et al., 2009).

Early research surrounding integration mechanisms have focused on informal integration mechanisms employed at the senior management or corporate level (O'Reilly & Tushman, 2004; Smith & Tushman, 2005; Taylor & Helfat, 2009; Durisin & Todorova, 2012). However, more recent

research has emphasized the importance of both informal and formal mechanisms at various hierarchical levels (Gassman et al, 2012; Chen & Kannan-Narasimhan, 2015; Hansen et al., 2019). While integration mechanisms in a broad sense can be conceptualized as the means through which the differentiated units are linked (Hansen et al., 2019), literature has highlighted specific mechanisms for integration that will be presented in the following Chapter 2.5.1 and Chapter 2.5.2.

2.5.1 Formal Integration Mechanisms

According to Hansen et al. (2019), formal integration mechanisms are crucial to the successful integration of radical innovation from exploratory units into exploitative structures. Formal integration mechanisms refer to structured linkages established through pre-defined interfaces and procedures to integrate differentiated activities (Ghoshal et al., 1994).

Senior Team Contingency Rewards

At the senior management level, Jansen et al. (2009) propose contingency rewards as one such formal mechanism, wherein the rewards for top executives are dependent upon the collective outcome of the entire team, rather than the individual performance within their respective areas. Such mechanisms foster integration among senior team members overseeing varied exploratory and exploitative units through outcome interdependence, urging executives to focus on interconnected rather than individual activities and reconciling conflicts associated with resource allocation (O'Reilly & Tushman, 2004; Smith & Tushman, 2005; Jansen et al., 2009).

Resource Linking

Another category of integration mechanisms commonly highlighted in radical innovation and structural ambidexterity literature concerns the linking of exploration and exploitation through resources (Van Looy et al., 2005; Raisch & Tushman, 2016; Hansen et al., 2019). According to Jansen et al. (2009), such linking mechanisms are integral for ambidextrous organizations, enabling new value creation by connecting previously unlinked knowledge sources and providing opportunities for obtaining synergies from leveraging common resources. The authors suggest that firms may utilize various types of cross-functional interfaces for disseminating operational capabilities and novel ways of achieving ambidexterity. Firms may, for instance, establish temporary cross-functional teams or task forces to combine personnel from separated units with expertise underlying the innovation streams. In addition to enabling the generation and recombination of knowledge sources, such teams are also advantageous in that they represent a flexible arrangement that can be dissolved upon task completion, and help build understanding and a common reference frame across differentiated units, all while preserving the integrity of their contradictory logics (Jansen et al., 2009). Similarly, Hansen et al. (2019) suggest knowledge exchange as an important exploration-exploitation integration mechanism and that exploratory units typically complement the development of new distinct capabilities by leveraging existing capabilities in e.g. marketing and manufacturing from operational units. While the employment of such *"exploratory-complementary linking"* may both increase the likelihood of successful commercialization of radical innovation and allow firms to achieve synergies through resource

sharing, it entails the risk of cross-contamination through transferring of the exploitative culture and knowledge oriented towards the current organizational trajectory (Hansen et al., 2019).

Yet another article highlighting resource-linking through competence exchange as a key integration mechanism is Gassman et al. (2012), who instead primarily focus on the strategic positioning of integration-facilitating boundary spanners through job rotation. Instead of placing the focal point on the individuals' expertise, the authors emphasize the ability of individuals within the operational unit to facilitate integration through innovation championing. By temporarily recruiting potential innovation champions from within the business units into the new venture unit, and then returning them to their previous roles, these individuals are equipped with an ambidextrous mindset that can be leveraged to promote new venture projects from the exploratory unit, facilitate explorative initiatives in gaining better access to operational expertise, and foster general acceptance for radical innovation. According to Gassman et al. (2012), such mechanisms may support exploratory units in overcoming the *"Not Invented Here"* (NIH) syndrome and foster conditions favorable for successful transfer of radical innovation.

Likewise, Hansen et al. (2019) suggest the transfer of personnel through job rotation as an integration mechanism that adds value by facilitating the transfer of radical innovation with their ambidextrous mindset once the job rotation has been finalized. They further highlight additional benefits in terms of access to expertise from the operational units and resource efficiency, as exploratory units may then be partially staffed with business unit personnel rather than employing the competence in question themselves. Nonetheless, the authors stress that such mechanisms, similarly to *"exploratory-complementary linking"*, entail the risk of carrying over practices from the exploitative unit to the exploratory unit, potentially resulting in cross-contamination.

Liaison Personnel

Yet another integration mechanism that can be employed for enhancing the conditions for a successful transfer of radical innovation involves the utilization of dedicated liaison personnel concerned with facilitating coordination and communication between the differentiated units. Jansen et al. (2012) suggest that establishment of such official cross-functional interfaces responsible for resolving differences across operational and exploratory units represents another important link that may increase the likelihood of a successful transfer by enabling the units in overcoming disagreements and decreasing ambiguity in organizational goals. Instigating such liaison roles may further enable knowledge exchange across the organization and foster identification of synergies (Fang et al., 2010).

Acceptance Building

To successfully fold back previously differentiated new venture projects into operational units, there must be sufficient buy-in and support from these structures, as a lack thereof is a common source of failure in transferring radical innovation successfully (Chen & Kannan-Narasimhan, 2015). Gassman et al. (2012) identifies two main integration mechanisms aimed at enabling the transition process through the establishment of legitimacy: *"innovation showcasing"* and *"exter-*

nal validation". Innovation showcasing refers to various measures exploratory units may take to translate abstract radical innovation concepts into tangible artifacts. By rendering intangible knowledge tangible, innovation showcasing facilitates communication of radical innovation and enhances its internal dissemination. This contributes to enhancing the transition process by emotionalizing radical innovation and increasing its general acceptance throughout the organization (Gassman et al., 2012).

External validating, on the other hand, refers to the leveraging of external actors to build legitimacy towards explorative initiatives (Gassman et al., 2012). Exploratory units may, for instance, involve high-profile customers or consultants to signal customer demand and solution-based information, or engage in collaborative development with innovation partners. External validating may help exploratory units overcome potential perceived lack of adequate market or technological know-how, and to reduce technical or market uncertainties (Gassman et al., 2012). Hansen et al. (2019) similarly highlight external and internal legitimacy seeking as integration mechanisms that enhance the transfer or radical innovation by informing, inspiring, and preparing the operational units, as well as legitimizing new venture initiatives. Building legitimacy through such mechanisms may, however, give rise to expectations within the operational unit that are challenging to detach, which may potentially lead to delays or constraints in decision-making regarding the discontinuation of certain projects and thus impose inhibiting effects on the explorative efforts (Hansen et al., 2019).

Decision-Making and Advisory Boards

Another formal top-level integration mechanism highlighted by Chen and Kannan-Narasimhan (2015) involves the establishment of advisory boards or committees, composed of executives of various managerial levels from the core business units tasked with advising or supervising new venture activities. Such boards may make funding decisions and/or provide the explorative projects with advice on the projects deemed to require most attention, and vary in terms of their degree of involvement in the details of the incubation process. While employing such mechanisms might enhance the likelihood of successful integration of explorative initiatives, extensive involvement of a board with strong bottom-line mentality may impede the radicality of new ventures by favoring less risky projects and disfavoring projects potentially challenging the interest of core business units (Chen & Kannan-Narasimhan, 2015). Similarly, Gassman et al. (2012) suggest different types of involvement of personnel from the operational business into collaborative decision making regarding radical innovation projects as an early-stage integration mechanism. Examples of such integrative innovation planning include involvement of the operational business in steering committees of radical innovation, and advisory groups where executives from various business units discuss and influence radical innovation agendas. According to the authors, this early incorporation of the operational business in the transition process fosters a sense of ownership over radical innovation projects and reduces organizational uncertainties, thereby improving the conditions for a successful transfer. However, Gassman et al. (2012) also raise concerns that employment of such mechanisms may reduce the radicality of new ventures, as operational employees may favor initiatives aligned with current businesses and disfavor such

that pose potential threats to current product lines.

Shared Ownership and Responsibility

A related integration mechanism described in Chen and Kannan-Narasimhan (2015) involves administrative ownership and accountability. This mechanism refers to the formal joint ownership and shared responsibilities for developing radical innovation projects between operational and new venture units, and can be implemented at various stages in the transition process. Business units may, for instance, be responsible for the very initiation of the radical innovation projects and leverage new venture units for incubation, or they may completely lack administrative responsibility over the initiatives until the radical innovations have reached sufficient maturity to withstand the established business context. A timely employment of this mechanism enhances the likelihood of a successful transfer by motivating operational units to engage in the development of radical innovation projects (Chen & Kannan-Narasimhan, 2015), as will be described further in Chapter 2.5.3. Early ownership by operational units may, however, simultaneously hinder the company's radical innovation endeavors, potentially resulting in the prioritization of short-term new venture projects and the overlooking of radical innovation opportunities.

2.5.2 Informal Integration Mechanisms

Moreover, as previously mentioned, informal integration mechanisms also play an important part in enabling a successful transition of radical innovation (Hansen et al., 2019; Jansen et al., 2009). While formal integration mechanisms focus on pre-established interfaces and mechanisms for coordination, informal integration mechanisms emphasize emergent social properties and the establishment of social ties among individuals at various levels within the organization (Jansen et al., 2009).

Network Building and Connectedness

At the organizational level, Jansen et al. (2009), present *"connectedness"* as an informal integration mechanism, referring to the density of the organization's social network. This mechanism is fundamental for providing a common base enabling individuals with diverse knowledge and backgrounds to exchange and integrate ideas in novel ways (Hansen, 2002). The existence of a dense social network further mitigates polarization across the differentiated units, promotes conflict resolution, and enhances members' ability and motivation to integrate and combine knowledge (Jansen et al., 2009). However, the actors included within the network may, according to Simon and Tellier (2011), constrain the direction of the innovative efforts and the individuals of the exploratory unit must therefore adapt their networks to accurately address the needs of the development. If they experience difficulties in accessing contacts which can provide them with the required resources to enable continuation of the explorative project, the objectives of the project might consequently be reframed to better fit the available resources and by such become more exploitative in nature.

Similarly, Gassman et al. (2012) propose measures for establishing social ties and informal networks between members of exploratory and exploitative units at various levels as an important integration mechanism to facilitate the transition of radical innovation. According to Gassman et al. (2012), network building may be facilitated through consciously created social platforms, such as e.g. *"capability shows"* where the different units showcase ongoing projects and the latest technologies. Direct communication is deemed essential for establishing personal linkages among members. The created personal ties can then be used to further spread explorative innovation within the organization and to identify and interact with innovation champions and internal stakeholders (Gassman et al., 2012).

SENIOR-MANAGEMENT SOCIAL INTEGRATION

Moreover, Jansen et al. (2009) further emphasize the significance of social integration at the level of senior management, as it fosters collaboration and problem solving across exploratory and exploitative units. Senior teams that are socially integrated are more likely to leverage and integrate organizational capabilities across differentiated units, facilitating for possible re-combination of knowledge (Jansen et al., 2009). Gassman et al. (2012) likewise underscore the significance of social integration among senior management, while also stressing its importance among middle management.

2.5.3 The Temporal Aspect

Several ambidexterity scholars further notably stress the importance of the temporal aspect in employing the integration mechanisms. Raisch et al. (2009), for example, conclude that the optimal balance between separation and integration likely varies across tasks, and over time, and that managing the tension therefore is an imperative dynamic capability for sustained performance. Hansen et al. (2019) delve deeper into the temporality of the integration and describe how various phases of the integration process are associated with the employment of different integration mechanisms. Prior to the transfer, mechanisms that enable loose coupling are predominant, facilitating knowledge transfer across the differentiated units while maintaining distinctive processes within each. In contrast, later stages, according to the authors, require reintegration mechanisms that allow explorative projects to be folded back into the core business, thus leveraging capabilities for commercialization.

Moreover, Chen and Kannan-Narasimhan (2015) offer a distinct perspective to the importance of temporality in the integration, in regards to administrative ownership and accountability, and highlight the timing of operational units' involvement as a key factor in successful transfer of explorative projects. From their analysis, four integration archetypes emerge that enable the integration of projects originating from the exploratory unit, and which differ based on the timing of involvement and initiating party. The first archetype involves early involvement of the operational units and is the only one out of the four where the core business initiates the projects in the exploratory unit. Consequently, it entails close collaboration from early on and the sharing of ownership and responsibility between the differentiated units. The business unit's share of the funding

is further increased as the project progresses and reaches predetermined milestones to increase buy-in and allow for project continuation. Although this approach allows the core business to leverage key competencies and knowledge from the exploratory unit, it encourages prioritization of short-term projects as operational units tend to disregard radical innovation opportunities which depart from current business areas (Chen & Kannan-Narasimhan, 2015). In the second archetype, the exploratory unit initiates their own projects but stakeholders from the core business still retains the power to terminate and direct the initiative. Seeing as more responsibility resides within the exploratory unit, there is increased significance on securing resource commitments to increase buy-in and probability of project survival (Chen & Kannan-Narasimhan, 2015). Thus, like the first archetype, the projects are typically closely aligned with current business to ensure resource allocation and priority. The third archetype instead involves a mid-stage, gradual involvement of operational units and is, according to the authors, more typical of uncertain projects which lack clear alignment to immediate business areas. The operational units' unwillingness to invest in such projects require the exploratory unit to gradually involve the core business, both resource-, ownership-, and influence-wise, as the projects start to develop towards a stage of more certain financial viability. The third archetype is therefore suitable for uncertain projects which differ from current businesses, as the gradual integration enables the operational units to familiarize with the projects and assess the associated risks (Chen & Kannan-Narasimhan, 2015). The final archetype exercises late involvement of operational units and is employed for projects that have outgrown the exploratory unit but are too undeveloped to successfully transition into the core business. In such occasions, a transitional unit may be established to house the project until it is ready to be folded back into the core business. This archetype minimizes collaboration between the explorative and operational units, who instead are encouraged to integrate explorative projects based on reduced uncertainty surrounding financial viability. However, according to the authors, there exists a risk that projects will become overly mature outside the core business, potentially giving rise to issues such as cultural clashes and duplication of resources once finally integrated. Chen and Kannan-Narasimhan (2015) further explain that the same company may employ different archetypes depending on the project characteristics, but that each project only may follow one, since the temporal dimension makes them mutually exclusive.

Considering the above mentioned case aspects together with the presented theoretical framework, the research questions that our study aims to examine are the following:

- How can innovative, established companies with ambidextrous ambitions organize and manage the integration of structurally separated units for explorative innovation with the core operational business?
- What major challenges do these companies encounter in balancing separation and integration?

3 Method

This chapter outlines the methodology used in this study. It begins by explaining the rationale for selecting a qualitative research strategy, followed by an overview of the research design, data collection methods, and data analysis technique. Additionally, the chapter includes a discussion on the quality of the study and concludes with descriptions of the selected case companies.

3.1 Research Strategy

In determining the research strategy underlying a study and describing the general orientation of how the research is conducted, Bell et al. (2015, p.35) delineate two distinct approaches: qualitative and quantitative. While quantitative approaches are concerned with quantification and testing of theories, qualitative methods place greater emphasis on words and are focused on generating new theory (Bell et al., 2015, p.35). According to Hammarberg et al. (2016), quantitative approaches are considered appropriate when the problem under investigation is well-defined and clear, whereas qualitative research is more suitable when the problem is not thoroughly understood, directing the focus towards theory development and refinement (Bacharach, 1989). Based on the nature of the problem under investigation, a qualitative research strategy was therefore chosen for this study. While the concept of ambidexterity has received considerable attention from both researchers and practitioners since its emergence following the seminal work of March (1991), the specific focus of this study - how firms can effectively organize exploration-exploitation integration and the associated challenges - remains relatively unexplored, as highlighted by recent literature (Hansen et al., 2019; Cubero et al., 2021). Given that the aim of this study is to develop theory and contribute to closing the research-practice gap highlighted by Cubero et al. (2021), a qualitative approach was therefore deemed appropriate. The complexity associated with firms achieving ambidexterity (Papachroni & Heracleous, 2020) provides further motivation for the qualitative approach adopted, as it allows for the provision of rich descriptions and deeper insights into complex phenomena (Sofaer, 1999).

Due to limited prior research on the exploration-exploitation integration in practice described above, a deductive approach, in which the study aims to test a hypothesis deduced from existing theory (Bell et al., 2022, p.20), was deemed inappropriate for the context of this study. Constructing a framework solely based on existing domain knowledge to analyze the collected data was considered too restrictive to adequately address the research questions, as it would limit the exploration of the unique contexts and perspectives of the included cases. While the study's goal was to develop theory due to the novelty and complexity of the subject, an inductive approach - which involves generating new theory exclusively from the experiences of participants (Azungah, 2018) - could have been aligned with this objective. However, since differing settings compromise the possibility of drawing broad conclusions from a specific study (Bell et al., 2022, p.52), the unique nature of each organization led to the conclusion that a purely inductive approach was likewise inappropriate. Instead, an abductive approach was chosen as it allows for iterating between literature and the social world as an empirical source for theoretical ideas to find the most suitable explanation among alternative interpretations (Bell et al., 2022, p. 24). The study

followed the research process recommended by Bell et al. (2022, p. 358) for qualitative research, as visualized in Figure 3.1.

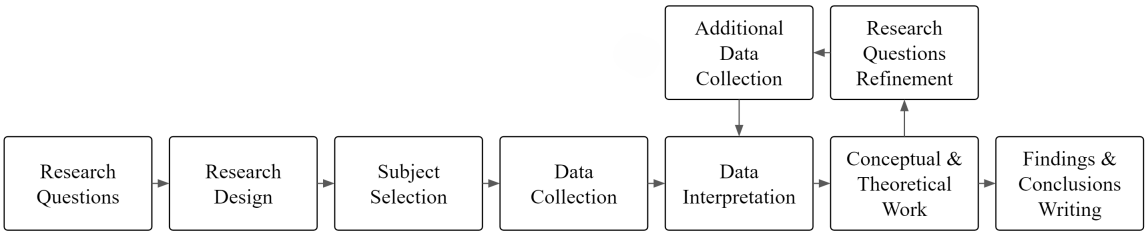


Figure 3.1: Visual representation of the research process, adopted from Bell et al. (2022).

3.2 Research Design

Following the selection of a research strategy to define the study's overarching direction, the next crucial step involves crafting a research design to provide the underlying structure for data collection and analysis (Dannels, 2018). In this study, a multiple-case study design has been employed, which is a variant of the traditional single-case study. Case studies constitute a research design where the focus lies on in-depth examination of the complexity and particular nature of a bounded situation or system (Bell et al., 2022, p.63), in this case the organization, and are appropriate for research that aim to offer extensive and in-depth descriptions of social phenomena (Yin, 2009, p.4). The case study design was deemed appropriate for this study since the research questions revolve around the organization of a complex process, i.e., the exploration-exploitation integration process, which was expected to unfold in a distributed manner across the organization, calling for a more comprehensive examination to obtain a clear understanding of the process and its associated challenges from diverse perspectives.

The choice of the multiple-case study variant over the single-case was motivated by its capacity not only to allow for the analysis of the individual cases and their unique contexts, but also to facilitate the comparison of the findings from the cases and to develop insights regarding similarities and differences (Bell et al., 2022, p. 67; Gustafsson, 2017). By adopting the multiple-case variant, the study aims to provide a richer contribution of insights into the organization of the exploration-exploitation integration process in practice.

The sample selection process for our study predominantly adhered to a purposive sampling approach, guided by criteria related to ambidexterity. Drawing upon Gassman et al.'s (2012) research, companies were identified as ambidextrous if they demonstrated an intent to conduct both long-term and short-term innovation initiatives, along with the presence of a distinct organizational unit dedicated to radical innovation. The initial outreach to the majority of the chosen companies was facilitated through the networks of employees within the Emerging Technology unit at Volvo Group Trucks Technology, incorporating an element of convenience sampling to enhance accessibility. The remaining companies were approached via the authors' direct and indi-

rect network relationships. Due to confidentiality agreements, the names of the four organizations that ultimately granted us research access are not disclosed. The responding companies span a variety of industries.

3.3 Data Collection

When conducting research, selecting the right data collection technique is critical for achieving the study's aims, as it must provide the information required to effectively address the research questions (Opoku et al., 2016). The selection of the method should consider a range of factors, including the research goal, the scope of the study, and resource-related aspects such as cost and time (Mwita, 2022). In this study, the data collection has primarily relied on semi-structured interviews with key stakeholders, namely employees from the participating companies.

The primary data collection method was selected as it allows for the openness and flexibility to explore emerging concepts and issues, while ensuring alignment with the research questions (Bell et al., 2022, p.11-12) and a certain level of cross-case comparability (Bell et al., 2022, p.438). The interviews focused on gathering data on ambidexterity and the related exploration-exploitation transition process, and were conducted with employees of various backgrounds within each company included in the study. This approach aimed to capture diverse perspectives enabling a more nuanced understanding of the organizational context and eventual challenges, with the purpose of enhancing the effectiveness in addressing the research questions.

To enable a diverse range of perspectives in the data collection, the selection of interview participants was conducted with careful consideration. The selection process followed the snowball sampling technique, wherein initial contact is made with one or a few participants relevant to the research topic, who are then used to establish further contact with others (Bell et al., 2022, p.395). The initial contacts were deliberately chosen based on their positions or backgrounds, which suggested that they could offer valuable insights on the subjects. They were then invited to refer other potential participants who could provide valuable additional contributions on the issue. This approach was chosen as it facilitates the identification of individuals who are difficult to access (Baltar & Brunet, 2012), which was beneficial in this study as individuals with relevant perspectives could be expected to be hard-to-reach for external actors. In total, four interviews were conducted at Company A, six at Company B, five at Company C, and five at Company D. See Table 3.1 for further details about the interview participants of the study.

3.3.1 Semi-Structured Interviews

The semi-structured interviews were conducted to generate insights into how the organizations orchestrate the integration of radical innovation units and operational units, as well as the ambidextrous challenges experienced. The interview guideline was developed based on existing theory on ambidexterity and related concepts and primarily consisted of open-ended questions, allowing for the provision of rich responses and facilitating discussions on relevant topics. To increase

Table 3.1: Schematic overview of the participating interviewees accompanied by company belonging and role.

Interviewee	**Company**	**Role**
Interviewee A1	Company A	CEO, Exploratory Unit
Interviewee A2	Company A	Deputy Head, Exploratory Unit
Interviewee A3	Company A	Engineering Manager, Exploratory Unit
Interviewee A4	Company A	Head of Procurement, Operational Structure
Interviewee B1	Company B	CEO, Exploratory Unit
Interviewee B2	Company B	Executive Director, Exploratory Unit
Interviewee B3	Company B	Director Operation, Exploratory Unit
Interviewee B4	Company B	CEO, Company in Innovation Hub
Interviewee B5	Company B	CEO, Company in Innovation Hub
Interviewee B6	Company B	Senior Director, Operational Structure
Interviewee C1	Company C	Director, Exploratory Unit
Interviewee C2	Company C	Head of Innovation, Exploratory Unit
Interviewee C3	Company C	Innovation Manager, Exploratory Unit
Interviewee C4	Company C	Innovation Manager, Company Accelerator
Interviewee C5	Company C	Manager, Operational Structure
Interviewee D1	Company D	Director, Exploratory Unit
Interviewee D2	Company D	Employee, Exploratory Unit
Interviewee D3	Company D	CEO, Startup Collaborating via Exploratory Unit
Interviewee D4	Company D	Vice President, Operational Structure
Interviewee D5	Company D	Global Director, Operational Structure

insight while ensuring comparability, the interview guide was somewhat adapted according to the specific contexts of the different cases and the role of the interviewee, along with the progression of the study. See Appendix A for the final version of the interview guides.

Due to the geographically dispersed locations and varying availability of the participants, the majority of the interviews were conducted via online video communication. This approach was chosen primarily due to the associated benefits in terms of time and cost savings, as well as its flexibility for last-minute scheduling adjustments (Bell et al., 2022, p.453). Interview durations ranged from 30 to 80 minutes, and all except for one were audio recorded and transcribed with permission from the interviewees, as this allows interviewers to be fully engaged and ensures accurate capturing of the responses in the interviewees's own terms (Bell et al., 2022, p.440).

3.4 Data Analysis

Thematic analysis, which entails the identification of themes or patterns within the data (Ryan & Bernard, 2003), was employed to interpret the data collected from the conducted interviews. This

approach is, according to Bell et al. (2022, p. 520), widely used in qualitative research due to its flexibility and adaptability to diverse types of qualitative data. More specifically, our analysis follows the six-step thematic analysis method proposed by Braun and Clarke (2006), which emphasizes the iterative nature of the process. This dynamic approach allows for continual refinement of the identified themes, enabling a comprehensive analysis of the nuances and complexities in the studied environments. Following their method for data analysis, as depicted in Figure 3.2, the following themes related to integration mechanisms were identified: *Resource Linking*; *Acceptance Building*; *Decision-Making*, *Resource Allocation and Support*; *Physical Proximity*; *Networks*; and *The Role of the Individual*. Additionally, the following themes in connection to challenges were identified: *Process and Governance Incompatibility*, *Deprioritization*, and *Lack of Clarity*.

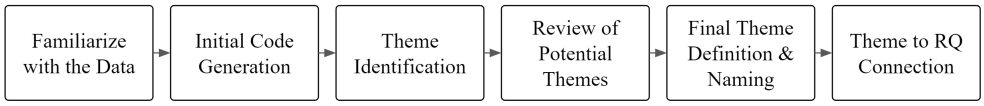


Figure 3.2: Visual representation of the six-step thematic analysis method used, adopted from Braun and Clarke (2006).

3.5 Research Quality

In order to ensure the study's quality, several strategies were employed in line with what is presented in Bell et al. (2022, p. 362-266) as suitable alternatives for assessing the quality of qualitative research. As explained by the authors, there exists debate among qualitative researchers regarding the relevance of traditional criteria such as validity and reliability, originally developed for evaluating quantitative research. In response to this, an adapted version of the two criteria of validity and reliability, proposed by LeCompte and Goetz for qualitative research (1982), was employed.

3.5.1 Reliability

Reliability concerns the stability and consistency of the findings, indicating the extent to which the results would remain consistent if the study were to be replicated under similar conditions (Bell et al., 2022, p. 46). In adapting reliability for qualitative research, LeCompte and Goetz (1982) underscore the significance of external and internal reliability. External reliability, which refers to the extent to which the study can be reproduced, poses challenges in qualitative research due to the dynamic nature of social settings. Instead, the authors argue for a detailed explanation of the researcher's role to enable replicators to assume a similar social role, and thereby attain comparable information. In our study, we assumed the role of student researchers conducting interviews within the context of Chalmers University of Technology. Our access to interviewees was in turn facilitated by our contacts at the Emerging Technology team at Volvo Group Trucks Technology who, in the majority of the cases, initiated contact with a respondent at the participating companies.

This role granted us access to gather data and insights relevant to our study and research questions.

Internal reliability, within the context of qualitative research, focuses on internal consistency and agreement among different researchers (LeCompte & Goetz, 1982). To ensure this, both researchers were present at all interviews except three, to ensure exposure to the same data and firsthand experience. Further, all interviews besides one were audio recorded, and careful documentation was maintained for the one not recorded, serving as a reference point for both researchers during the analysis. During the analysis of the transcriptions the same analytical approach was followed to ensure consistency in theme identification and to minimize personal biases, and all transcriptions were further coded and supplemented by both researchers. Moreover, any disagreements in interpretations were openly discussed throughout the process to ensure alignment in understanding of the findings.

3.5.2 Validity

Conversely, validity concerns the accuracy of findings and the integrity of derived conclusions, assessing whether or not the study measures what it intends to measure (Bell et al., 2022, p. 46). Out of the main types of validity, internal validity and external validity are the most critical for evaluating qualitative research according to LeCompte and Goetz (1982). Internal validity, within the context of qualitative research, evaluates the coherence and consistency between collected data and interpretations or developed theoretical concepts (LeCompte & Goetz, 1982). It is considered a strength of qualitative research, according to the authors, as direct engagement and observation within the studied environment can enhance congruence. The limited observation periods within each company in our study somewhat constrain the internal validity, as more time would have allowed for a stronger alignment. However, measures were still taken to improve the internal validity. Besides ensuring that the described research methods and procedures were followed, respondent validation, as recommended by Lincoln and Guba (1985), was performed where the research findings were submitted for validation to the interviewees to ensure accurate understanding of the integration processes and corresponding mechanisms.

External validity refers to the extent to which results may be generalized to other social settings beyond the study's specific context (Bell et al., 2022, p. 47). This criteria is, according to LeCompte and Goetz (1982), harder to achieve in qualitative research as case-studies and small samples often are employed. Even though our study employs a multiple-case study design, the relatively small sample size of four companies restricts the generalizability of the findings beyond the contexts of the study. However, the aim of the study is rather to provide rich and in-depth descriptions of the different companies' integration processes and related mechanisms, thereby facilitating for decisions of possible *transferability* (see Lincoln & Guba, 1985 for description) to other contexts.

3.6 Case Companies

In the following chapter, descriptions of the cases included in the study will be presented. The companies selected operate within varying industries but share commonalities in that they are all large, multinational, established and well-renowned manufacturing firms with a long history of success, and have explicit ambidextrous aspirations to innovate for the present as well as the future. The exploratory units within these organizations differ in that they constitute different types of innovation structures, where some rely on more external collaboration and are more venture-oriented, while others are more focused on internal development. However, a common characteristic among them is the presence of a structurally separated unit dedicated to explorative, more radical, innovation that resides beyond or outside of the current businesses of the core organization, which is intended, at least partially, to be integrated into the operational structures of the company. These units will be referred to as *"exploratory units"* throughout the study.

3.6.1 Company A

Company A is an organization concerned with the development and manufacturing of products sold on a highly regulated and international market. In recent years, the company has established a separate unit exclusively dedicated to the innovation of exploratory and transformative solutions with a more distant development horizon. The innovation in the unit is performed through internal projects, driven by the personnel of the exploratory unit, and may involve collaborations with external partners such as existing and potential suppliers. While the outcomes of the exploratory unit are primarily intended to be integrated into the existing operational structures, they may also extend into new domains aligned with the company's strategic direction to form new divisions within the organization. The exploratory unit is structurally situated within a department dedicated to the exploration of long-term product development trajectories, extending beyond the more incremental development performed across the other departments, within which it is described as a radical outlier. As of the time when this study was conducted, the first project of the exploratory unit was in a pre-transfer stage, and the unit had therefore not yet completed an integration of an innovation into the core structure.

3.6.2 Company B

Similarly, Company B operates within a highly regulated industry environment and is engaged in development and manufacturing of products for the global market. Over the past decade, the corporation has established an innovation hub structurally separated from the core organization where scale-ups, partners, and academic groups are invited to leverage the company's extensive expertise and vast infrastructure. The purpose of the innovation hub is to serve as a platform where the core business and the entities within the system can mutually benefit and learn from one another. Notably, Company B does not necessarily acquire any ownership in the participating entities. The innovation that occurs in the innovation hub is meant to focus on explorative and future technologies and act as a complement to the more exploitative focus of the core business units. The innovation hub differs from the other examined exploratory units due to its historical reliance on external, governmental sources for the majority of its funding. This has allowed the

unit's mission to extend beyond serving solely the company's internal objectives, but rather to foster innovation and collaboration within the industry as a whole. However, as of the time when this study was conducted, a strategic shift had been made to internalize future funding. This change will, according to the CEO of the unit, influence the selection of participating entities towards a greater emphasis on mutual value creation for both Company B and the scale-ups.

3.6.3 Company C

Company C is likewise a manufacturing organization operating on the global market. The company enjoys a long history of conducting both incremental and more radical innovation and is currently engaged in various approaches to pursuing development extending beyond current product lines. One of the means through which the company pursues more radical innovation is an exploratory unit, situated within a corporate business unit that is responsible for a significant share of the R&D conducted within the company. The unit is described to perform the most radical form of innovation in the organization with the primary purpose to explore *"gap areas"*, i.e. areas residing outside the responsibilities of the company's current product owners. Outcomes stemming from the exploratory unit are intended to be implemented into the core organization, either into current structures or through the establishment of new units. Currently, the exploratory unit is undergoing a redefinition of their responsibilities, transitioning from a predominantly passive role, with the main objective to provide product owners with access to external knowledge upon request, towards assuming a more proactive role in the long-term innovation strategy of the company. The exploratory projects are now initiated and driven internally by employees of the exploratory unit, mainly by composing temporary networks consisting of internal competencies from the operational parts of the company and external expertise. The unit may further utilize other innovation means available within the organization, such as the company accelerator, which was also included in this study as it is part of one of the possible integration chains that an explorative project may follow. While the main purpose of the exploratory unit is to focus on technologies residing outside current operations, the accelerator's mission is to connect external scaleups with internal needs currently existing throughout the company. The accelerator has recently established an incubation function for external early-stage startups where the demand for a currently existing need is reduced.

3.6.4 Company D

In accordance with the other cases included in this study, Company D is a well-established, international organization with a long history in the development and manufacturing of products. Stemming from an initially temporary effort to explore areas outside of the current businesses of the company, the exploratory unit of Company D was established in recent years to continuously conduct exploration and development of solutions transcending the trajectories of the firm's current core markets and product lines. According to the director of the exploratory unit, they characterize themselves as a *"venture builder or studio"*, actively exploring opportunity spaces wherein they initiate and lead projects either in collaboration with startups or independently utilizing internal expertise. The outcomes of successful projects can either be integrated into the

existing operational structures of Company D, or serve as the foundation for the establishment of a completely new unit within the firm. The exploratory unit is structurally separated from other units, reporting directly to the top management of the business area of which they are part. At the time when the study was conducted, the exploratory unit had multiple ongoing projects and had begun integrating two initiatives into the core structures of the company.

4 Results and Analysis

In the following chapter, findings from the interviews are presented according to the key themes that emerged across the examined cases during the thematic analysis. As visualized in Figure 4.1, six key themes were identified in relation to research question one: Resource Linking; Acceptance Building; Decision-Making, Resource Allocation, and Support; Physical Proximity; Networks; and the Role of the Individual. Additionally, four of these themes include sub-themes, depicted as white boxes in the figure. Regarding research question two, which addresses the challenges experienced in relation to this integration, three key themes were identified: Process and Governance Incompatibility, Deprioritization, and Lack of Clarity.

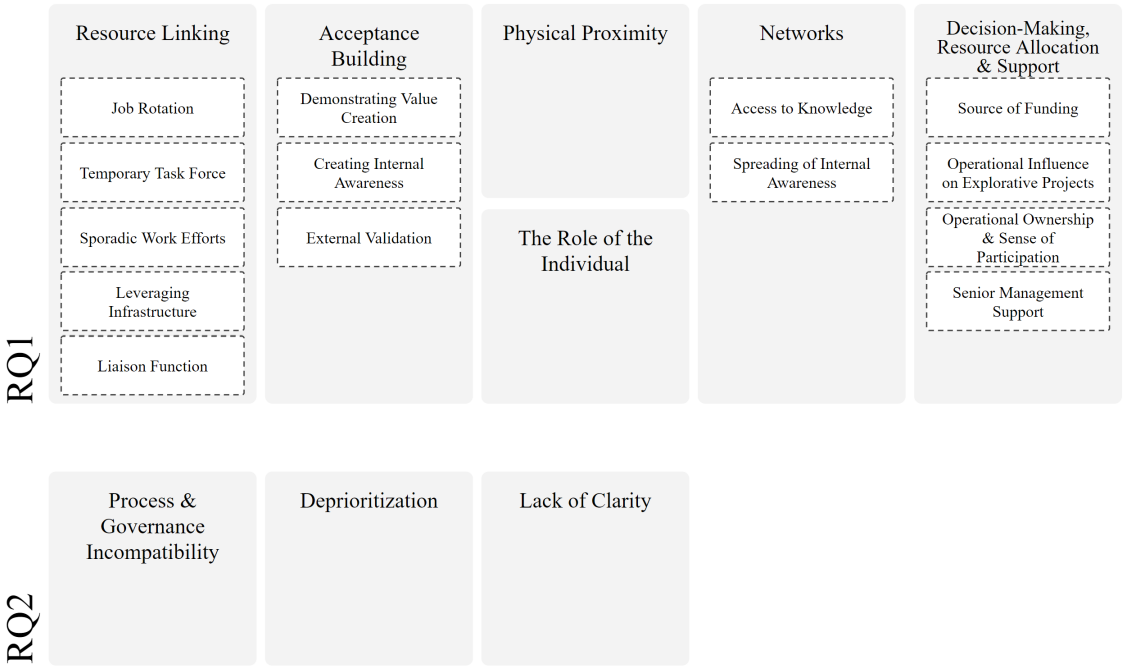


Figure 4.1: Visual representation of the selected themes and sub-themes, sorted against their related research question.

4.1 Integration Mechanisms

This sub-chapter will present the findings pertaining to research question one, organized into the key themes identified. Findings related to sub-themes will be presented as sections contained within the respective key theme to which they belong.

4.1.1 Resource Linking

One of the more prominent themes that has emerged in all of the studied cases is the integration through the sharing and transfer of resources between the exploratory unit and the operational structures of the companies. Linked to this overarching integration mechanism, which will be referred to as *Resource Linking*, five sub-themes have been identified that represent different

modes to integrate the explorative and the exploitative structures through resource transfer. These sub-themes consist of: *Job Rotation*, *Temporary Task Force*, *Sporadic Work Efforts*, *Leveraging Infrastructure*, and *Liaison Function*.

JOB ROTATION

The first sub-theme related to resource linking concerns the temporary transfer of employees from the operational structures into the exploratory units of the companies, i.e. job rotation, and has been identified as a means to connect the explorative and operational parts in Company A, B, and C.

In Company A, all interviewees describe that they utilize job rotations of employees from the operational units to temporarily staff the exploratory unit in addition to those who constitute the permanent core team working full-time in the unit. According to Interviewee A1, such job rotators, or *"gig workers"*, currently constitute about 25% of the unit's staffing and range in occupation rate from part-time to full-time. Interviewee A2 describes that the duration of each job rotator may vary from shorter periods to extended periods, and vary in the type of competency: *"We have a number of gig workers [...] that work a certain percentage with us. Either over a longer period or shorter. Procurement is one such example [...] and we also have people who have [industry-specific domain] competency, for instance, or [other industry-specific] competency, and that type of specific competencies you need during a limited amount of time."*

Interviewee A1 explains the purpose behind the job rotations in Company A to be multi-faceted, involving both a bi-directed flow of knowledge and an intended increase of operational acceptance for the exploratory unit: *"There are three purposes, really. The first is [...] to incorporate expertise that we lack, and thereby reducing the necessity for all experts to be here. [...] Number two is to facilitate smaller technical spin-in from [the exploratory unit] into [the company]. They bring smart ideas that we might come up with here and bring it more directly into, say, products that we have in [the company]. And third, maybe the most important, is to build acceptance long-term for [the exploratory unit], and to get everyone in [the core company] to feel that [the exploratory unit] belongs to us and contributes to our advancement so it becomes less 'us and them' in the culture work."* Interviewee A3 also expresses two of these purposes when prompted about the rationale behind the job rotations: *"The thought behind the information exchange in large is actually based primarily on that we need help, and then you rotate someone in [...] [But] it's a double-edged sword. They get to see how we work, hopefully get inspired, and bring our processes to [the core company] and maybe implement parts of it there."* While Interviewee A3 describes that they have not noticed such an effect stemming from a job rotation, Interviewee A4, who is currently performing such a job rotation, experiences such an effect: *"I absolutely believe people outside of [the explorative] unit bring stuff back. [...] You start testing your own limits as well. You get somewhat more innovative, it's a bit contagious."*

According to Interviewee B1, B2, and B3, the exploratory unit in Company B also engages job rotators from the operational parts of the company into the scale-ups within the exploratory

innovation hub. Interviewee B1 described one such example of a *"secondment"* that involved an operational employee working half-time in one of the companies for half a year, with the purpose both to provide the company with key expertise and to spin-back knowledge into the core of Company B: *"We'll give you a person that will help you perform these experiments during six months and then we want the right to use the knowledge we've learned. But it's a different way to think, right, because they never planned to make money on their method development."* Interviewee B2 similarly points to a two-directional knowledge flow stemming from such job rotations and notes that they may contribute with different types of competencies: *"We have a few that have not only worked operatively, but on a strategic level. So we have [core company]-employees in the boards of a couple of companies too. It's really a combination of it being developing for that individual, but it's also of course about contributing to that organization, whether it's an operative role or a board assignment."* While neither the interviewees from the hub companies nor the interviewee from the operational organization has noticed such a secondment, Interviewee B5, CEO of one of the hub companies, reports direct experience of more permanent staffing from the operational structure: *"A very important part for us has been that our board chairman is from [the company][...] It's incredibly good. Partly to come from outside and from their 'world', so to say, that they know how it works in a large company, how it works within [the industry], since we have many dialogues with other [industry]-companies as well, for instance."*

While Interviewee C1 and C3 state that the exploratory unit in Company C has not engaged in job rotations between the unit and the operational parts of the company, Interviewee C4 expresses that the accelerator has engaged in such activities. The main purpose of those rotations, according to Interviewee C4, has been to facilitate future transfer of solutions into the operational unit once the rotation has been terminated: *"We think it's a really good way to sort of spread the message of [the accelerator] through the rest of the company. To let someone work here for three or six months and then go back to their organization [...] it's a really good way of integrating. So ideally we have... we just finished one, which was someone from [the operational unit]. And he's going to be, you know, the champion of [the accelerator] in [the operational unit], then from that point onwards, because he's been working with us for three to six months. So that's the ideal way to create these, sort of, integrating champions. But it's a bit of a long-term game."*

Temporary Task Force

In Company C and D, another sub-theme related to resource linking has surfaced as an integration mechanism connecting the exploratory units with the operational structures. The second sub-theme, temporary task force, revolves around the establishment of a temporary organization dedicated to exploring a specific innovation project.

In Company C, where they are in the process of setting up a new operating model for the exploratory unit, Interviewee C1, C2, and C3 describe how they plan to set up such more or less temporary innovation structures around certain technologies that are deemed as high-potential areas, combining competencies from internal operational units with external expertise from academia and other industries. Interviewee C1 illustrates the initiation of such a structure: *"We*

have various types of workshops. For instance with [a research institute], where we talk about, like, 'OK, we are interested in [a specific area]'. Then we set up a workshop with [area] experts from [operational units] here and their top researchers in the field from [the research institute], and we have a workshop where we discuss, 'OK, what do we see for the future? What are our future needs?' [...] And then we consider, like, 'OK, can we start an interesting project around this?'" Interviewee C1, C2, and C3 emphasize how such structures formulated to explore specific high-potential technologies will be composed of a combination of various expertise from within the core parts of the organization as well as external expertise spanning a variety of industries. As described by Interviewee C1: *"Then we build an innovation hub around these technologies and arenas where we actively won't exclusively focus on [their industry] arenas, but we'll also explore other arenas to ensure that we consider different perspectives on it. We bring them together. And then the idea is that we also bring in external speakers and provide training and ask questions. These will form the basis to the product ownership in the future and ensure we incorporate it into these various roadmaps."*

In Company D, Interviewee D3 and D5 describe how the exploratory unit arranged an innovation competition where they formulated multiple temporary structures consisting of a selection of relevant startups, personnel from the operational structures, and external expertise focused on developing the ideas and businesses of each startup. Interviewee D5, one of the directors who participated in the competition from the operational structures, recalls: *"It was called a 'hackathon', basically. They invited a few startups, like 10, and what they did is they brought the startups in and they paired them with colleagues [from the core business] from various functions, you know, marketing, communication like myself, innovation, and so on."* The temporary team that the director was involved in became one of the winning teams in the event, which then extended beyond the termination of the contest, as the prize consisted of funding for a six-month pilot, according to the interviewee. Interviewee D5 continues: *"I was really, really involved in the project that we won the pitch for. I would say I invested more than the allocated time that I promised, the 20% time allocation for three months. I think I invested 20% for the whole year."*

However, according to Interviewee D3, the CEO of the startup around which the task force was constructed, the task force dissolved when the pilot had been completed, apart from the director included in the study. Interviewee D3 recalls: *"In [the city of the startup competition], we were kind of allocated a squad. [...] But what I came to understand was that once that pilot was done, they're kind of not really involved. [...] So the reason why [Interviewee D5] has been the constant if you like, is because [Interviewee D5] is actually the brand manager for, or director or whatever for [a specific brand], which is the brand I'm working with. The others well, they have different job roles. I think I'd be correct in saying, for them it was kind of a project that they were working on that was quite fun. You know that they went to the [startup competition]-thing and then they were involved in this project and then it was finished and then they were done."*

Sporadic Work Efforts

The third sub-theme identified concerning resource linking pertains to the general integration

of knowledge and competence, extending beyond the specific forms of job rotation and temporary task forces. It encompasses sporadic, needs-based work efforts or knowledge transfers primarily directed from operational employees towards the exploratory unit, but also involves knowledge flows directed from the exploratory unit toward the operational structures. This general exploration-exploitation knowledge linking has emerged as an integration mechanism connecting the exploratory units and operational structures across all studied cases.

Interviewee A2 highlights that the exploratory unit in Company A possesses a wide range of competencies necessary for conducting its explorative activities. In addition to the expertise within the permanent core team and the knowledge acquired through job rotations, the exploratory unit in Company A also leverages the expertise existing within the operational structures when specific needs arise. As described by Interviewee A1: *"We feel that we can, a bit more ad-hoc when there is a need, ask for help from the ones we need. [...] We leverage [the core company] for all support functions such as HR, finance, invoicing, security, cleaning, and such."* The benefits of being able to utilize knowledge on a needs-basis from the core company are underscored by Interviewee A2 and A3, who highlight access to this competency as a significant advantage compared to a smaller company such as a startup. Interviewee A3 suggests that this is particularly important given the advanced technology employed in the industry, stating: *"We still work with [the core company] with a lot of cutting-edge technology, which I believe for a smaller company... It takes a long time before you can enter that industry and find people who are experts. And I often experience that with us, everything is just a phone call away.[...] So, I believe that having expertise at arm's length is... That's probably the key."*

In Company B, such a mutual exchange of knowledge between the companies in the innovation hub and the core structure is also highlighted by Interviewee B1, B3, and B4. While the majority of knowledge exchange reported in the interviews concerns a flow from the operational divisions of Company B to the companies in the innovation hub, as elaborated in the section Liaison Function, Interviewee B1 underscores examples of knowledge transfer from the hub companies into the operational structure. One such instance involved a company that had developed a new process for a specific type of activity: *"The company was going to develop a [product]. That was their business idea, so we said - well, maybe we can learn this method and save a lot of money on it. Well, how do we solve that? We'll give you a person that will help you perform these experiments during six months and then we want the right to use the knowledge we've learned."*

Furthermore, Interviewee B4, CEO of a scale-up in the innovation hub, acknowledges that while the primary knowledge exchange they engage in occurs among the entities within the hub, there is also a bidirectional exchange of knowledge between them and the operational structures: *"It's a lot about knowledge exchange. I mean, we also run into roadblocks when we don't know how to handle a certain issue, and it goes both ways, that we help [the core company] of course, which participates in discussions and provides suggestions or ideas. But above all, it's the other companies in the hub that we can share our knowledge and thoughts with, whether it's about building companies or if you're going to conduct a study of some kind where we can provide input*

because we've done things before and seen many different studies."

While the knowledge linking that the exploratory unit of Company C primarily engages in appears to focus on the innovation structures described in the section Temporary Task Forces, the data collected suggests that the approach to knowledge exchange varies more within the accelerator. According to Interviewee C4, the knowledge flows from the operational structures to the startups range from minimal to more extensive forms, which could be likened to temporary innovation structures or job rotations: *"That depends really on the project. I mean some projects are really straightforward like we just want to buy your product and test it and then we test it. [...] And we've had projects where they really almost co-designed the solution. And then obviously there's a lot of back and forth between the engineers. [...] But it really depends on the problem and on the people, how much there is exchange."* Regarding the nature of the knowledge provided by the operational structures, Interviewee C4 describes that this also varies from legal, or HR functions, to engineering knowledge, depending on the issue at hand.

In Company D, Interviewee D2 also states that the nature and timing of the knowledge exchange between the exploratory unit and the operational units vary between projects, but that they typically leverage expertise from the operational structure when a problem area has been selected and potential startups related to the area have been identified. Interviewee D2 elaborates on the knowledge flow at this point: *"Somewhere around here, we usually also want to bring in some input from branding. Because they have a lot of knowledge, for instance, when it comes to [a certain business area], where they often have a sense of the consumer and similar aspects, as well as the scalability of the issue."*

Interviewee D1, director of the exploratory unit of Company D, further describes how the exploratory unit may leverage diverse types of knowledge for different projects on a needs-basis: *"Basically, we have our business partners who we keep sort of in contact with regularly and we share what we're doing. Or we are starting a new sprint and then we discuss - 'Hey, you know, we might be happy to have a few people from you in here with the knowledge from consumer insights or whatever'. And they say - 'Yes sure'. We do a sprint and then they join us for three days on this workshop sprint."*

Leveraging Infrastructure

Another sub-theme identified connected to resource linking pertains to the exploratory units' leveraging of existing infrastructure in the exploitative structures. This mechanism has been identified in three of the studied cases: Company B, C, and D.

In Company B, this mechanism was highlighted by all interviewees in various ways. Interviewee B3, B4, B5, and B6 describe that the leveraging of physical infrastructure, such as facilities and expensive industry-specific equipment, has been a key advantage for the scale-ups in the innovation hub. As described by Interviewee B3: *"What we do is that we open up our fantastic site, all the infrastructure. [...] We have everything needed to run a business and if you think of*

it as a small actor - ensuring that everything works in a [industry-specific word] environment - there's so much that needs to align and here we have everything in place. [...] You step into an environment that is both sustainability-adapted but also functional." Interviewee B4, CEO of a scale-up in the innovation hub, confirms the advantages of leveraging the physical infrastructure of the established company and emphasizes it as one of the key benefits achieved through the collaboration: *"There's an infrastructure here that is difficult to access anywhere else when you're such a [industry-specific word]-intensive company like we are, with so much [industry-specific word] equipment and regulatory systems to deal with. [...] It's highly regulated what you can do and what you can't do, how you should do things. [...] There's sort of an infrastructure here for [industry-specific word] production that we benefit greatly from because it makes it easier for us to run our operations. That's the absolutely most important thing."*

In addition to the physical infrastructure, Interviewee B1 points to the benefits related to the scale-ups in the innovation hub's utilization of permits required to operate in the industry that can be difficult for a smaller company to acquire. The respondent explains: *"If you're a small company and you don't need to go to [an authority] to obtain your permits? You save money on that and above all, it's a damn hassle. We've got those permits, you can use ours."*

In Company C, Interviewee C4 describes that the accelerator has provided the startups housed in the incubator of the unit with access to the infrastructure of the established unit and points to the rarity of such integration: *"I did sort of a tour, as well, digitally through Europe, like, 'OK, who's doing this?' And I couldn't find anyone that really said 'OK, we opened the doors and they just, you know, worked side by side with our engineers and they use our labs, they use our...'. No one. So that's quite unique actually I think."*

Also in Company D, Interviewee D2 describes how the leveraging of the digital infrastructure and data of the operational organization has provided benefits for the exploratory unit: *"If we want to use, for instance, the platforms of the company brands when we're doing a pilot. For us, it's fantastic to use established structures that already exist when we, for example, are going to do pilots because then there's like a database or different programs or similar that we can make use of."*

Liaison Function

The final sub-theme identified connected to resource linking concerns the utilization of liaison functions to facilitate the coordination and communication between the exploratory unit and the exploitative organization, typically directed from the former to the latter. This sub-theme was identified in three of the studied cases: Company B, C, and D.

In Company B, Interviewee B1 and B3 both emphasize the role of the personnel in the innovation hub to facilitate the interaction between the scale-ups in the explorative innovation hub and the employees in the operational organization, by connecting them with adequate operational competence to solve various challenges. As explained by Interviewee B1: *"We function as a link to the capabilities available within [Company B]. So we help identify individuals or teams or resources,*

call it what you want, that can assist the company." In addition to connecting the companies in the innovation hub to competencies in the operational organization, Interviewee B3 elaborates the role of the hub personnel from an integration-facilitating perspective to include the identification of opportunities for collaboration and mediating this contact. Interviewee B3 describes: *"We are here as an opportunity to match-make and make sure they meet. [...] We support the companies in this environment with [...] getting in contact with [operational] employees and their knowledge. I have a parallel colleague [...] whose job is to find collaborations, really, or to inspire - 'Can this product be interesting for you in this unit, or there?'"*

This integration facilitating role conveyed by hub personnel was confirmed by the interviewees both from the scale-ups in the innovation hub as well as the interviewee from the operational organization. Interviewee B4, CEO of a scale-up in the innovation hub, spoke appreciatively about the coordinative service provided by the hub personnel: *"They've surely worked hard. I mean, if you ask them a question and say 'We have this issue, could we do something about it?' Then they search with a light and lantern to find someone who knows something in that field."* The CEO of another innovation hub scale-up that engages in a collaboration with a unit from the core structure of Company B, Interviewee B5, recalls how the collaboration was initiated by the hub personnel who had identified a collaboration opportunity: *"It was through the hub personnel. So they could point out who I should contact, and then when I contacted him. He could then point out additional people for me to speak with."*

The interviewee from the operational structure of Company B, Interviewee B6, further describes how the role of the hub personnel as facilitating the integration between the companies in the hub and the operational structures extends beyond the mediation of the contact: *"They are really important, you know, because they are the ones who are essentially responsible for [the innovation hub], so to speak. They manage agreements and contracts between... That, I don't see anything of, you know. They somehow mediate this... practical, everyday stuff, they handle that."*

In the accelerator of Company C, a similar function related to the role of the personnel in the unit mediating the contact between the startups and the operational structure was identified. Interviewee C4, senior innovation manager in the exploratory unit, explains how they facilitate the development of the projects in the unit by connecting them with the right individuals: *"So what we just try is that, you know, they can have conversations with each other. And there is mutual benefit in that. It's really hard to gather a meeting with a [Company C]-person. You cannot just... My email address is not on the Internet. My phone number is not on the Internet. You know, I'm a senior innovation manager. You would have no idea what I'm actually doing if you would look me up and that is the same for every full [Company C]-engineer. And they're all just called, like, senior engineer or something. So just getting them connected is already valuable."*

A similar coordinative and facilitating function has been identified in the role held by the exploratory unit in Company D, where Interviewee D1, director of the exploratory unit of the organization, depicts this as the primary purpose of the unit: *"So we are more like sort of a facili-*

tator, an enabler in the company, rather than owning the topics." Interviewee D1 concretizes this role with the example of when they organized an event where startups and selected participants from the operational unit were matched in a competition around the solutions of the startups: *"We were initiating and facilitating that. So we designed the whole thing and made sure it was well-organized. We screened the startups, invited them, and all that. We brought in facilitators and funnel methodology masters and design thinking. We facilitated those teams."*

The integration facilitating role held by the employees within the exploratory unit both during, and outside, the event was confirmed by Interviewee D5, director in an operational unit currently participating in a project that was initiated via the event. Interviewee D5 describes their role during the innovation event: *"So then basically [the exploratory unit] managed the whole process of how that would be rolled out from a pilot perspective, they did all the project management."* This perspective is further confirmed by the CEO of the startup involved in the project in question, Interviewee D3, who states that this role has extended beyond the termination of the competition: *"In a way they are the ones that are pushing the project from one phase to another, ensuring that we're moving forward, right, and we don't get comfortable and waste time. So they have been along the journey with us.[...] They handle the legal, they handle the NDA, they handle the contract, they sort of oversee it."*

4.1.2 Acceptance Building

A consistent theme observed across all examined cases is the concerted effort by exploratory units to foster acceptance within the operational units towards the exploratory units and the activities undertaken therein. Through the analysis, three primary sub-themes have surfaced, representing the modes employed by the companies to pursue this objective: *Demonstrating Value Creation*, *Creating Internal Awareness*, and *External Validation*.

DEMONSTRATING VALUE CREATION

The first sub-theme, *Demonstrating Value Creation*, has been identified as a means to build acceptance across all examined cases, and concerns how companies work to demonstrate the outcomes generated by the exploratory units, such as partial project accomplishments or successful innovation transfers, towards employees within the operational units.

At Company A, Interviewee A1 explains that the exploratory unit, in addition to sharing outcomes via articles and videos published on intranet channels, orchestrates events such as open houses, inviting operational employees to visit their facilities and gain insight into the work and outcomes of the unit. Interviewee A4 additionally describes that the progress and results of the exploratory units are displayed to the operational structures in regular review meetings, where employees across all units of Company A partake, as well as via regular check-in meetings with senior management. Both Interviewee A1 and A2 note that employees outside the exploratory unit acknowledge the value generated by it, despite no project having transitioned into the operational structure as of yet. As expressed by Interviewee A1: *"Now I feel that things are flowing quite well, and I believe people are starting to see the synergies in a different way. [...] People see that*

new types of networks are being created that are beneficial for us."

Interviewee A2 further describes that the operational employees' acknowledgment of the value generated by the exploratory unit has facilitated the ongoing work in the unit: *"Ever since we actually started developing, we've contributed with value to [the company], and it's been clear from the beginning that we've done so. [...] We believe that if we would need more budget, there would be no big problems. I believe it has been a huge success factor that we've been able to show that we generate value as we go along."*

In Company B, regular seminars are conducted where the outcomes of the exploratory unit are presented to employees across different units throughout the organization. Interviewee B5 additionally describes how the exploratory unit engages in events where results from the explorative activities are showcased and employees throughout the organization are encouraged to interact with representatives of the scale-ups in the innovation hub. Interviewee B6 elaborates that these events also feature employees from core divisions of Company B who are engaged in collaborations with companies in the innovation hub, sharing success stories of collaborations stemming from the unit.

Similar to Company A, Interviewee B1 and B2 at Company B emphasize the importance of demonstrating the value generated in the exploratory unit to foster acceptance, and stress the significance of presenting concrete outcomes of the explorative work. As Interviewee B2 describes: *"In a business case-driven world, everything starts with 'This is what we've done'. That creates some type of 'OK, they're not just talking, they can actually deliver.' Then you can take the next thing - 'Now we have this on the radar too'. And since we've done it before, we expect that we have built some form of credibility to get that ashore too."* According to Interviewee B1, concrete metrics that may be utilized to demonstrate the outcomes of the explorative activities include quantifications of the collaborations between companies in the exploratory innovation hub and the operational units of Company B, as well as outcomes stemming from those collaborations. Interviewee B1 exemplifies one such metric from a recent collaboration: *"We have been able to show that the downtime for our [industry-specific term] has reduced by 40%. That's a number you can convert to money. So all such metrics are very important. Otherwise, it's really difficult to measure the impact.[...] It's about being able to show to [the company] that this is worth continuing investing in."*

In Company C, the accelerator similarly engages in regular meetings where successful projects are presented to a group consisting of operational innovation leaders throughout the various business areas of the organization, according to Interviewee C4. In addition to these meetings, which occur on a bi-weekly basis, Interviewee C4 further describes that they also organize digital events that are open for the entire company: *"I think like six times a year or something, we broadcast a sharing session where we discuss three or four cases.[...] It's open for all of [the company]. We have about 200 people joining that call and we record it and share it online, and then people can learn from that."*

In accordance with Company A and B, Interviewee C1 at Company C likewise emphasizes the importance of displaying the value derived from the exploratory unit in order to garner support and obtain access to important resources: *"In such a big company, it might be that you may need something and [that you need] to actually show the value of it in order to get people on board. It's usually better to come and say 'Now we've done this and anchored it with the right people', and then we show what it can give. Then people usually want to join and prioritize money. [...] Instead of saying 'I had a thought we could do this, can you give me money or resources?' It's usually no, then."*

Likewise, the exploratory unit at Company D also engages in demonstrating progress and outcomes of the explorative activities to the operational structures. Interviewee D1 describes how they engage in meetings on a regular basis with key employees in operational units to present ongoing projects: *"Basically, we have our business partners who we keep in contact with regularly, and [to whom] we share what we are doing."*

Creating Internal Awareness

The second sub-theme that has emerged within all cases relates to the act of building awareness about the exploratory unit, its purpose, and the activities performed therein, throughout the rest of the organization, i.e. *to create internal awareness*.

In Company A, Interviewee A1 and A4 describe transparency as a central aspect in how the exploratory unit works to build acceptance towards the explorative structure. As described by Interviewee A1: *"I believe that acceptance largely is about transparency, basically. [...] That people understand what we are and that we don't want to do anything that radically threatens specifically their work and is a complott against them. Because that's how people think sometimes. So acceptance from the transparency part."* Interviewee A3 similarly expresses transparency as an important component in building acceptance towards the way in which activities are conducted in the exploratory unit: *"We do get questioned. [...] It's very much about building acceptance and explaining why we're doing it this way. It's a very different way of thinking. We've made very different choices for completely different reasons."* Interviewee A1 and A3 further describe that the exploratory unit utilizes the intranet for spreading information about the explorative activities and that they arrange open house events, where operational employees are invited to their facilities to gain insight into their work. Despite this, Interviewee A4 expresses that a widespread internal awareness about the exploratory unit is lacking: *"I think many don't know about [the exploratory unit], or know very little about them. They have invited [the organization] to open houses where you can come visit and they want to spread what they're doing. But I experience that many don't know what they're doing."*

Further, Interviewee A3 describes that the exploratory unit is engaged in spreading awareness by participating in meetings or town halls within the operational structures: *"We might come and present about how we work and purely with information exchange during about one hour or two."* Interviewee A3 additionally describes how they also work on an ongoing basis with

individual interactions to increase the understanding of the rationale behind the way of working in the exploratory unit: *"You just explain your line of thought. Preferably again and again and again. And then when you've gone through it a couple of times, they start saying 'Yes, OK, but this does seem to work. How far did you say you've come in that time? What, you've gotten that far?'"*

Similar to Company A, the exploratory unit in Company B organizes open house events to cultivate acceptance by enhancing internal awareness of the explorative activities. As described by Interviewee B5: *"...then they also regularly have exhibitions where we from the [innovation hub] get to showcase our company, and where other [core company] personnel come to look and talk."*

At Company C, the internal dissemination of information about the exploratory unit is regarded as crucial for garnering acceptance within the organization. An essential aspect highlighted by Interviewee C2 regarding the internal awareness is the necessity to differentiate the activities and innovations undertaken within the unit from those occurring elsewhere in the company. Interviewee C2 elaborates: *"If you go around asking product owners in this organization, there isn't anyone who raises their hand and says, 'No, I don't have any emerging technology in my product plan.' No one. There also isn't anyone who says they don't work with innovation."* Interviewee C2 indicates not encountering skepticism within the operational structures toward the exploratory unit, but rather incomprehension, and states, *"We must position ourselves against all other functions that do what others may perceive as the same thing. And then communication becomes crucial, both internally and externally. Perhaps above all internally."*

Interviewee C1 and C3 describe that a crucial aspect of how the exploratory unit at Company C plans to reach out and build internal awareness throughout the organization is through a network the unit has constructed with key managers and other personnel across the organization. Interviewee C3 elaborates that the exploratory unit regularly organizes meetings for the newly established network to disseminate information widely throughout the organization: *"It's called [network name] and it's a meeting that takes place every fourth month or something like that, where we completely own the agenda. And there, all the CTO's of the different business areas and other technical experts, I think, are also present to some extent. But yes, simply put, the higher executives. They sort of get a sense of what this is about. And then we sort of raise our agenda a bit."*

At Company D, efforts are made to disseminate knowledge about the exploratory unit through various means, according to Interviewee D2 and D5. Interviewee D2 notes that they must actively work with spreading awareness since they perceive a lack of understanding within the organization regarding the explorative activities: *"I believe that many think like that, that we just do a lot of workshops and play around. So, there we also need to build what purpose we can contribute with and where we can come in.[...] Sometimes we have to prove what we do and why we do it and*

how it can contribute in the long run."

Similar to the approaches adopted by Company A and B, Interviewee D2 described that Company D is on the verge of commencing the organization of events where employees from the operational structures may familiarize themselves with the exploratory unit: *"Now we're going to start sending out a general message to the organization saying that today, [the exploratory unit] is on the 5th floor. If you have any questions, thoughts, or ideas, feel free to stop by and just socialize with us. So, we're trying to get a bit more of a flow going in our general socialization because it can also be very difficult to reach out to people when everyone has so much on their plate."*

In addition, similarly to Company C, Company D has also developed a stakeholder network, to which they organize regular share-out meetings for information dissemination. As expressed by Interviewee D2: *"We're constantly trying to maintain... Those who may be of interest to us are part of a network, a social network within the company. We strive to provide continuous updates [to them], typically through a share-out every month."* Moreover, Interviewee D2 notes their active involvement in and presentations at update meetings aimed at the broader organization as part of their strategy to foster acceptance of the exploratory unit: *"It can be like quarterly update meetings, for example. Where, for instance, [specific employee] might be on stage and talk about what we're doing and provide evidence of how we work in that way."* Interviewee D2 indicates that they also participate in smaller meetings and events throughout the company, where they share information about how they operate: *"If we are asked by various brands or business units to present, for example, we always do. [...] Sometimes they hold workshops within different brands where they discuss product innovation, for instance. [...] Participating in such workshops can also be important for us to have a voice and talk about what we do and provide another perspective on it. Because then we know we will be top-of-mind if they start similar projects. So yes, a lot of building credibility like that."*

External Validation

The third sub-theme identified regarding acceptance-building involves utilizing expertise external to the focal company or the market to validate the activities of the exploratory unit within the operational organization. This process, which will be referred to as *external validation*, was observed in Company A, C, and D.

In Company A, Interviewee A1 discusses their use of feedback from early customer interactions to foster internal acceptance of the exploratory unit: *"We continuously strive to build business cases, and since it's disruptive by nature, doing so is challenging based on historical data or by trying to assess the size of any market type. Instead, it becomes more about indications from positive potential customer reactions."*

In Company C, Interviewee C3 explains the following when prompted about whether the exploratory unit leverages external expertise to legitimize specific projects toward the operational organization: *"Yes, a bit like that. So it becomes informative about what's happening in this area,*

but it also becomes like, 'Look at this, this could be interesting.' And then we show interesting proposals or real use cases for the technology and so on."

Interviewees D1 and D2 in Company D emphasize the pivotal role of market indicators in legitimizing individual projects, as customer feedback garnered from market testing frequently serves as the determining factor for advancing a project beyond a certain stage. As articulated by Interviewee D1: *"So until we've come to a point where we can say that we have collected enough evidence with the MVP's to go to the board and say 'Now we are at a point where we want to get kind of the seed funding.' [...] Because at that point we have proven that this is actually a scalable business model which makes a financial contribution to our company."* Interviewee D2 similarly states the following regarding the utilization of indications from the market for legitimizing projects to key decision makers outside the exploratory unit: *"Primarily, I would say that we use the raw data we obtain from the tests. If we build a landing page on a prototype and then test it. If we receive very poor results from it, we will present that, and then they will likely say this is probably not for us. But if we conduct several interviews and clearly see patterns within a certain topic and we see that it received a rating of 4.8/5 in all ratings, then we present that. So we show the data we actually obtain on the project, and that's what we validate to move forward."*

While market indicators are presented as a central aspect in building acceptance for specific projects conducted within the exploratory unit, Interviewee D2 also mentions the utilization of external expertise to foster acceptance. Interviewee D2 states: *"We may bring in external expertise if we want to conduct a landscape mapping on a problem area, for example, that we are completely new to. Then we gladly bring in the expert and say that this is an expert that we have brought in [and] maybe even financially supported in that part of the project. [An expert] that we then bring in for the brand to build credibility in that way."*

4.1.3 Decision-Making, Resource Allocation and Support

Across all examined cases, a consistent theme has emerged regarding the integration which concerns the governance of the exploratory units, specifically who holds decision-making and resource allocation authority. This is closely related to the role of senior management support and its influence on how explorative projects are integrated and prioritized. The findings gathered surrounding these topics have been collected under this theme where the following sub-themes have been identified: *Source of Funding*, *Operational Influence on Explorative Projects*, *Operational Sense of Ownership and Participation*, and *Senior Management Support*.

SOURCE OF FUNDING

One point of interaction between the exploratory unit and the core business which has emerged as significant across the cases is the source of funding for the activities in the exploratory unit. The examined companies notably vary in regards to whether they receive their own designated budget or if they have to approach the operational structure to acquire the main part of the funding for

their projects.

At Company A, all interview respondents state that the exploratory unit receives a designated budget from the business unit to which they belong. Interviewee A1 further emphasizes the practical arrangement of the funding: *"In practice, the funding is an agreement allocated directly from the head of our business area and our CEO. And I think that's a crucial thing in this, if it's going to work, that the funding for such an operation is taken directly, first of all, before money is distributed to everything else in the company."* According to the respondent, the relatively low degree of interaction with internal stakeholders regarding funding decisions significantly improves the autonomy and flexibility of the exploratory unit. This view is shared by the other respondents from the company's exploratory unit, Interviewee A2 and A3. As noted by interviewee A2: *"We receive a budget and then we have quite a bit of freedom to manage that budget to make progress."* Further, Interviewee A4, an employee at the core business, largely shares this view and agrees that the unit is to be autonomous but notes that there exist opinions surrounding to which degree as there still exists regulatory processes which hinder complete freedom: *"There are regulations regarding how we release the budget they have received, which must be approved by various people. [The exploratory unit] views this as somewhat challenging because they have a budget, but others still need to approve it before they can make purchases for a certain amount, or someone needs to sign the contract."* The practical difficulties created by this are highlighted by Interviewee A2: *"Those who have the best understanding of what we're going to do here and why we want to proceed with this purchase are us who are here, and then we have dialogues with our management and so on and justify it. But then, you still have to sit in a forum, for example, where there are many other people who really aren't involved at all in what we are doing. And then it becomes very difficult to make progress."*

The funding of the innovation hub at Company B diverts from the other examined cases due to its differing purpose and as the unit has historically mainly been funded by governmental sources. Because of this, questions regarding the source of funding have been answered in a different setting. However, according to Interviewee B1, there seems to currently exist a separate budget that is received directly from top management to maintain the innovation hub and foster the creation of linkages and collaboration. The respondent further describes that if a collaboration project is initiated where an integration will take place between a function at the core company and one of the scale-ups in the hub, the funding for that specific project is provided by the function involved.

Conversely, at Company C, Interviewee C1 and C2 state that the exploratory unit operates without a dedicated budget but instead needs to interact with, and get their funding approved from, somewhere in the core business structure. There exist two possible approaches according to Interviewee C2: *"I know that I don't have a budget, which means I have to convince someone else to do something. Who this someone is, I don't know at the moment, but in practice, there are only two ways. One is upward within my own management structure. That's one way, and the other is existing product owners who have a dedicated budget for development today."* The

respondent views both routes as somewhat challenging and explains that if they are to completely depart from the current areas of the product owners and instead be financed from their own management structure, there exists a risk that the solutions will be judged as too forward-looking and thereby deprioritized: *"In [the company's] complex structure, this means working with very, very long time perspectives on very, very uncertain technologies, and there I have a bit of difficulty determining what willingness there is to finance those kinds of moonshot projects."* If they instead choose to receive their financing via the product owners budget, the respondent believes that their work will be limited in the sense that they will only be able to research future technologies that align with those of the current product owners, as the incentive for financing technology that potentially could render their technology obsolete is very low. Interviewee C1 somewhat shares this view, but deems the route via the management structure as less problematic: *"We currently don't have our own budget, but it's very clear from my boss and top management that depending on the gap, we can receive specific budgets for it. That is, if we want to buy a company, there are no product owners in the world who have that kind of money, so then it would ultimately be a board decision. [...] If we instead enter areas where we want to use academia and research and we are to start a public project, then there's a different approach to that. And it could also be that we find areas when we want to start our own projects, then we can get funding centrally."* Moreover, the main part of the funding for the projects in the company's accelerator is, according to Interviewee C4, also supposed to come via the core structure, specifically from the product owners. However, the respondent conveys a differing view on this relationship, in regards to projects in the accelerator: *"The goal is to get as many projects [as possible] from explore to exploit, right? How can we get emerging technology into the organization? And the chances that that will happen is so much higher if the resources and the money is coming from that exploit box and not from the explore box."*

Similarly, the exploratory unit at Company D receives the majority of their funding via the corporate structure. According to Interviewee D1, the unit receives a base funding for doing initial exploratory work, which then must be supplemented by additional approvals as projects advance. Where the additional funding then comes from, according to the respondent, depends on where the interest lies within the organization and is dependent on the case itself. However, according to Interviewee D2 it is most commonly decided upon by the management of the business unit of which they are part of.

Operational Influence on Explorative Projects

Within this broader theme, another aspect of the integration identified in the cases studied involves the influence of operational units on the activities carried out within the exploratory unit. During the interviews, this influence emerged in various forms, such as operational stakeholders and boards with direct decision-making authority, or advisory boards possessing a more consultative role.

Similarly to the source of funding, autonomy and freedom is what permeates the decision-making in the exploratory unit at Company A, according to all of the interviewed respondents. As stated

by Interviewee A1: *"We have been given a position that is very autonomous where there is a great deal of trust [. . .] For example, we don't have a steering group. I have a dialogue with my boss and we try to give back as much as we can. But there are no others who really make decisions besides ourselves."* The experienced autonomy has further, according to Interviewee A1 and A3, resulted in a partial mitigation from inhibiting processes normally executed in the core business. As noted by Interviewee A3: *"If you have a good idea, then you can go ahead with it. There are essentially no stops."* Despite this, the exploratory unit does need to receive some form of a *"go ahead"* from top management in order to initiate an innovation project, according to Interviewee A4 from the core business. This is further confirmed by Interviewee A1 who explains that they have gotten an approval on the project they are currently working on. The respondents' experience since that point, however, is that there has not been any attempts to get involved in the decision-making regarding their activities: *"I like to think that we have quite a bit of autonomy ourselves. So if I decide that we should completely change direction, I would be able to push that through. Of course, I would need to discuss it with my boss and his boss as well, but it's not like they push things on us."* Thus indicating a high degree of self-governance within the exploratory unit, which is complemented by a close relationship and dialogue between the CEO of the exploratory unit and the top management of the company, where management assumes more of an advisory role.

At Company B, the core structure's influence on decision-making regarding the exploratory unit is largely limited to the selection of entities to include within the innovation hub, according to Interviewee B1 and B2. The influence seems to be of a more advisory nature based on what is expressed by the same respondents, as noted by Interviewee B2: *"When a case comes up about a new organization that wants to become a part of the [innovation hub], our team conducts the initial review to see if it's even relevant. If it passes that filter, the case is then sent out to the network, which consists of carefully selected representatives from the various functions [within the core business], who can then signal if they find it interesting, to verify that it has some strategic relevance for [the company]."* When prompted about whether the board possesses decision-making authority Interviewee B1 responds: *"Well, it's both yes and no because they are decision-makers at a later stage - Should the function invest in this. But they are not the decision-makers about whether to bring a company into the [innovation hub]."* Thus indicating that the exploratory unit has the final say in the selection. This view seems to be largely shared with Interviewee B6, who is a member of the reference board. The respondent recalls approximately one year ago, the people in charge of the exploratory unit gathered senior leaders within the organization and sought their advice on which type of scale-ups to bring into the innovation hub. Interviewee B6 further recollects additional times when they have been asked to be involved as an advisor for potential candidates, most notably one time when they suggested a company that later on was included.

Seeing as the exploratory unit at Company C does not receive a dedicated budget, but instead has to seek funding either via top management or the product owners, the two groups possess a certain degree of decision-making authority regarding which projects are to be continued and

ultimately transferred to the operational business. According to Interviewee C1, the idea is that the exploratory unit develops a strategy for future technologies they believe to be of importance for the company. These are then disclosed for, and anchored with, the CTO network, consisting of all of the CTOs from the different units within the company, who then have a say in which areas should be further pursued. During the course of the project, this network will be looped in iteratively to make decisions regarding further advancements within the areas. The respondent views this process as instrumental for embedding the new technology at different levels within the company and notes: *"We will conduct analyses and look at what is happening out there. But it's also very important that we find a grounding in reality within the organization to get this rolling so that it becomes an iterative process. Part of this is that we test our strategy against them [the CTO network]. But it's also about educating our managers about what's happening in the market, so it turns into a dialogue. [...] Because they need to buy into the strategy and implement it in their areas."* The respondent thereby suggests that anchoring the technology within the CTO network will allow it to spread throughout the organization. Interviewee C5, manager within the operational structure, underscores the significance of anchoring the new technologies with the core structure, specifically the product owners, for a successful transition, but points to a more direct approach: *"You can't really tell the product owners which technologies to select, the selection has to be done together with them. They need to be involved in leading the change because they have the full responsibility of the product. Product owners will need support in finding the technologies of tomorrow and get the input - 'Yes, this is a good idea to look into'. It might be that they are so busy that they don't have time. Then we have a problem. But still, I think the first approach shall be to try to integrate [the new technology] into the product."*

The exploratory unit at Company D is similarly required to iteratively interact and get approval from top management to advance the projects past particular phases, as described by Interviewee D1 and D2. Interviewee D2 further describes that top management initiates opportunity spaces, which align with the company's business areas, where they then begin to look for possible opportunities and explains the process that follows as *"We update management, so the presidents of the different units, every three to four months. We present progress and how far we have come based on the promises we made last time. It might be that we just give an update or we ask them for a green light on something, or a decision on e.g. financing, or 'Can we start these talks with these companies'. So it's a constant conversation all the time. Within this, we also choose a bit 'Who are the key stakeholders and key decision makers for us to move forward [in this specific project]'."* Moreover, Interviewee D1 emphasizes that besides the need for top management approval to progress through certain stages, they experience greater autonomy within their projects than they would have as part of the core business. As noted by the respondent: *"When we have come to this point we have created our own legal entity which is kind of like a startup founding their own limited, which is maybe a bit, let's say free of all the corporate processes. So the red tape and the structures and the governance has more freedom."*

Operational Ownership and Sense of Participation

Tightly linked to the former sub-theme is the third, *Operational Ownership and Sense of Par-*

ticipation. This theme has been identified across all cases and concerns not only who holds actual ownership over the explorative projects, but also means to foster a sense of ownership and participation among the operational units regarding activities conducted in the exploratory units. The topic was not emphasized as much during the interviews with the respondents of the exploratory units of Company A, and B. However, the interviews with the members from the core business of the respective companies still contribute with findings surrounding how they view their own participation in the exploratory unit projects.

Interviewee A4 at Company A, for example, explains that their role as a part-time job rotator at the exploratory unit has enabled an increased sense of participation, and further notes: *"We, at my business unit, feel ownership for the activities executed at [the exploratory unit] because they are a part of our business unit. So their goals are part of ours, they are aligned with ours."* Thus indicating that organizational affiliation and the existence of aligned goals mitigates the sense of structural separation. Regarding when the official ownership of the explorative project transfers to the operational units, Interviewee A2 notes that their answer is speculative seeing as no project has actually transferred, and then continues: *"We usually say that it should be a fairly mature product, there should be a plan for how it can be adjusted, it should be built so that it can be produced and maintained when it's handed over. Then, of course, there will be certain things left, it will have to be productized on the other side. But it should be prepared and there should be an initial plan for how it will come together - 'This is the type of project that should be carried out, these are the type of customers and maybe you already have a first contact.' We don't want to end up in... It's so easy when you're working with innovation that you come up with a concept and then do it and it turns out great, and then not much more happens. Because you hadn't really thought about these other aspects: Is this even producible? Is there a market for this product? So that's part of the holistic approach we wanted to take, where it doesn't just become a concept, but we have to achieve some type of maturity level."* Thus indicating that the level of maturity impacts whether or not the project will be prioritized once transitioned to the core business.

At Company B, Interviewee B6 from the core business, similarly to Interviewee A4 at Company A, indicates that they themselves experience a sense of ownership over the activities in the innovation hub due to personal engagement, but that the sense of ownership among operational employees overall should be improved.

As previously mentioned in the section Operational Influence on Radical Projects, the exploratory unit at Company C works in several ways to embed the technology throughout the organization, according to Interviewee C1. The respondent further explains, however, that the actual ownership of the project will vary according to what area the technology spans. If it is clear that the technology covers an entirely new area, where the company lacks prior experience, ownership will reside within the exploratory unit until it has been properly embedded within the operational parts. Interviewee C1 describes the transition of ownership as: *"[A specific technology] is one area that my group has been managing, but we are gradually letting go more and more because it is moving forward, and there is a good momentum in the core business regarding these issues, and ownership*

is being transferred to the more operational side, and it is working well." If the area instead lies close to a current product owner, the governance will, according to the respondent, take on a more decentralized form where the concerned product owner will partake in the navigation of the project and possess the official ownership of the project. In regards to the projects within the company's accelerator, Interviewee C4 instead describes that the ownership clearly resides with the product owner, who also initiates the project in the accelerator, and explains how this is integral for the continued implementation of the projects within the core business. As noted by Interviewee C4: *"The goal is to actually learn from the projects and to get them into [the company's product] and the chances that that will happen are so much higher when people feel like they own the project. When they, you know, bleed a little for their own project. So giving them ownership of the whole process and just us acting as support I think is one of the strongest points."*

At Company D, Interviewee D2 describes how they at the exploratory unit, despite possessing official ownership from project initiation, work actively with engaging the operational parts of the business early on to create a more seamless integration between the units: *"Generally, they [people from the core business] are involved from a very early stage to ensure that the whole transition process, if it is to be integrated, does not become a bottleneck. Otherwise, there would be a fuss if we were to come to a [business unit] and say 'I've been working on this for a year - now you take over.' I think that if we were to come as an external party, internal but external in the sense that we are not part of that business unit, their response would be 'Why should I take your product? We have our own things to take care of.'"* Thus indicating that creating a sense of participation and ownership amongst operational employees mitigates deprioritization after transfer. The respondent further describes how being in alignment with the core business contributes to a greater engagement from the operational members: *"Generally, we receive a very positive response from the units when we present what we have done because they see the value in it and feel that we have listened to where they are in their development and how it can be integrated from the beginning."* The view that people from the operational units, where the explorative project ultimately will take residence, should be involved early on is shared with Interviewee D5 from the core business: *"You can't activate an idea in the market in isolation because it's going to be part of the same brand, right. You need to link it to all of your activities wherever it makes sense."* As to when ownership of the explorative projects officially passes to the operational parts, Interviewee D1 describes a gradual passing: *"Now [a specific project] moves more towards market integration, so we are kind of phasing out. At the beginning when it's more of a venture type and nobody knows where to go, we give more guidance. But then at the point where the decision is taken and it's clear, then the ownership is officially kind of taken over. But it's a phasing process. We still kind of try to push it forward and help the colleagues to the right steps, in terms of setting the right goals, measuring their success, etc. So we support like a gateway model."*

Senior Management Support

Moreover, the final sub-theme, *Senior Management Support*, has been recognized across all examined cases and regards positive integrative effects stemming from support expressed by top

management towards the exploratory unit and its activities.

All of the interviewed respondents at Company A notably stress the fact that senior management has shown open and pronounced support for the exploratory unit and its activities since the start. When prompted about challenges connected to the integration Interviewee A2, for example, responds: *"It works well. I feel that yes, we have a lot of trust from our management. Mainly, it's something that they have dared to invest in, but also generally from management, I would say."*, indicating that the support from management has played a role in mitigating possible challenges. Interviewee A1 and A2 also further highlight the support as a facilitating factor for the ease of gaining funding for the exploratory work.

Interviewee B3 at Company B likewise underscores the significance that senior management support has had in enabling the activities of the exploratory unit and the integration with the core business. When prompted about what has worked well with the integration, Interviewee B3 responds: *"One of the most important things is that there exists support from the top, so that the people who want to engage with the companies in the innovation hub have the support to do so, that this is something they should focus on. So the support, and that the right people exist to drive the collaboration. [. . .] There must be support from management, and there must be both time and money left for this."*

The notion that senior management support plays a significant role in the integration is likewise voiced by the majority of the respondents from Company C. Both Interviewee C1 and C2, for example, explain how the experienced interest from senior management, within an area they are currently exploring, has contributed to their choice to pursue the technology. Interviewee C1 for example states: *"We know that [the technology] is an area where our CTO is interested. And we know that it's an immature area that has extreme potential and risk associated with it. That's why we started with it, because it's very low-hanging fruit since everyone agrees that this is an emerging technology that we need to get a handle on."*, indicating that senior management support justifies exploration within the area. Similarly, Interviewee C2 states: *"If I return to [the specific technology], there is a declared ambition and expectation from top management that we must be on the ball, and of course that makes my life much easier when I come with a request to a man out in production to join our new expert network. Then it's simply hard to say no."*

Interviewee D2 from Company D's exploratory unit raises similar notions to the impact of senior management support and declares that their unit has very strong support which overall legitimizes the unit's activities to the rest of the company, thereby facilitating the integration. As stated by the respondent: *"I think the management is incredibly supportive in the work we do and we know that we as [the exploratory unit] are high up on the agenda generally for [the business unit they are part of]. So, [Company D] as a company believes very strongly in innovation and this long-term interaction with finding, well, new growth models and business models that can become a part of [Company D]. And I think that without that, it would probably have been tricky."*

4.1.4 Physical Proximity

Another common theme that emerged as an emphasized integration mechanism spanning two of the studied cases is the physical separation, or non-separation, of the exploratory unit from the operational structures of the organization.The first company where the physical location was identified as an important medium for integration was Company A. In this firm, the exploratory unit is reported to be physically separated from the rest of the organization, which Interviewee A1 suggests as a symbolization of the unit's relatively higher operational openness to the external environment. As Interviewee A1 describes: *"I usually say that we are inside but yet outside the fence here in [the city]. So we are on Company B's site in [the city], but we are in a house that is actually... We are actually literally on the fence that surrounds all other houses. So, we have one entrance outside of the fence and one entrance inside the fence."*

Interviewee A3 states that the environment in the exploratory unit's premises distinctly differs from the rest of the organization, an aspect that both Interviewee A1 and A3 express contributes to stimulating activities that differ from the activities performed in the operational parts of the company. Interviewee A1 explains: *"I think that things happen when people are put in a new context with different colors on the wall and with the task to think radically different, with a clear vision about something new."*

While employees from the operational parts of Company A are described to be encouraged to book meeting rooms and hold conferences in the facilities of the exploratory unit, as well as participate in open house events as described in Chapter 4.1.2, Interviewee A4 notes that it is not entirely open for employees outside the exploratory unit to freely utilize the location for unrelated work. Interviewee A4, who is one of the part-time job rotators from the operational unit dividing office time between explorative and operational facilities, explains: *"Gig workers are allowed to sit there and work. You are allowed to borrow conference rooms [in the exploratory unit's facilities] if you want an 'away day' where they talk about what they do. But it's not like you can come and sit there and work however you want. You should be someone who contributes to their operations."* Since the exploratory unit also has partially separate digital infrastructure, Interviewee A4 further believes that physical co-location is key for the job rotations to run smoothly, and states: *"My view of integration, shared with my procurement colleagues, is that it works well when you are on-site and can have direct dialogue. The exploratory unit works in a completely different IT environment than we do, which poses challenges for sharing information [...] But when we are there, we can look at the same computer. To sit together as they do, focused, it's really key."*

At Company B, all interviewees instead underscore the physical non-separation of the exploratory unit from the operational structures as key to both the activities of the exploratory unit and the integration between the structures. Interviewee B2 explains: *"Yes, we sit together. No, physically, there is no separation [...] Because we are fully convinced that to innovate and solve complex problems, it's a contact sport, and it wouldn't work to put someone in a shed across the street."* Both Interviewee B1 and B2 emphasize the ability of physical co-location to foster spontaneous interactions between employees from different scale-ups within the innovation hub, and between

these individuals and employees in the operational organization, as a key factor in connecting different perspectives and thereby driving innovation activities within the exploratory unit. Interviewee B2 elaborates: *"We deeply believe that innovation is a contact sport and you and I don't meet every day but - 'OK, that was a good idea. I hadn't thought of that.' [...] And that's why we've built our workplace here in such a way that you actually meet and encounter individuals you don't always meet. We talk about what we call unintended collisions."*

In addition to the exchange of ideas described as enhancing the innovation performed within the exploratory innovation hub, enabled by the physical proximity, co-location is also reported to be important for other integration aspects between the exploratory unit and the rest of Company B. Interviewee B4, CEO of one of the companies in the hub, notes that the physical co-location has contributed to increasing the transition of services to Company B: *"We have received more requests and projects to do because we meet in the corridor, because we are on-site,"* as well as to other companies within the innovation hub: *"Part of it is proximity to customers, of course, then for the other companies that are in the hub and [the core company], of course, but mainly the other companies here have a need for our services, so it is important for us to get assignments to do."* Furthermore, Interviewee B5, CEO of another company in the innovation hub, states that the physical co-location was a factor behind the adoption of an operational manager from Company B onto the board and that this has been important in facilitating the transition of their technology both to Company B and to other similar external clients. Regarding whether physical co-location was a factor in the uptake of the operational manager, Interviewee B5 remarks: *"Yes, I would say that. If we hadn't been sitting here, I don't think I would have asked him. It might have been a thought anyways, but it's much closer at hand when we're sitting here, so I would say it's a major determining factor, actually."*

4.1.5 Networks

Another recurring theme identified across all companies examined in the study is the exploratory units' use of networks in enabling the integration with the operational units. Across the cases, two main sub-themes have emerged representing different ways in which these networks are leveraged to facilitate the integration: *Access to Knowledge* and *Spreading of Internal Awareness*.

Access to Knowledge

One aspect that has been recognized within this broader theme is the exploratory units' employment of personal networks for identifying and gaining access to the necessary competence.

At Company A, Interviewee A2 explains their process, at the exploratory unit, for gaining job rotators from the core business as: *"Up until recently, I would say that we have used our network extensively. Like 'This person, if they are interested, they would probably be a good fit to come here and do a job rotation.' But now, there's also a formal process for that, if you want some type of expertise you can advertise it and then you can pick people you might not have had in your existing network. So now we might do some of that, but until quite recently, it has been about*

the network." The employee thus conveys a past and continued importance of the exploratory employees' personal networks, surpassing the recently instituted formalized procedure, both for locating required competence and for gaining access to it. The view of the personal network as a central component in integrating with, and gaining access to knowledge from, the operational parts of the business is shared by Interviewee A3, who states: *"Almost everyone here [at the exploratory unit] has worked in the core business before, so there is already a large network to talk to. I think it would have been difficult otherwise, actually. I just walk in to [the core business offices], or maybe send an email beforehand. Tomorrow for example, I could just go up to that building, go inside and have a chat with them."* Regarding the ease of interaction with the core business for acquiring knowledge, Interviewee A3 adds: *"My experience is mostly with people I already know. But my feeling every time I do this is that it works well because we know each other from before. If I were to go the official route [...] it becomes a lot of paperwork. I can't say for sure, but I get the feeling that if we hadn't known each other from before, then it would have been a complete stop."* The interviewee from the exploratory unit thus indicates that the personal networks have a mitigating effect on the obstructing impact of a potential process mismatch between the separated units.

At Company B, several interviewees similarly emphasize the importance of network building in integrating and gaining access to knowledge across the differentiated units. However, the primary focus is instead described by Interviewee B2 and B3 to reside upon the innovation hub as a base for establishing linkages between companies, both between the core business and the scale-ups in the innovation hub, as well as between the scale-ups themselves. They both further stress the role of physical proximity in the creation of linkages, as noted by Interviewee B3: *"Ultimately, when you live here and share the same roof, you get to know new people and you can drive your own networks."* This view is further shared by Interviewee B4 and B5, both CEOs of scaleups within the innovation hub. As stated by Interviewee B4 *"You are more or less forced to participate in various activities to create a group, an exchange, a dialogue. Because you can't stay here unless you also participate in the activities that take place. You are dragged, enticed, and pushed there and that's the only way there is, I think, to create the dynamic. Otherwise, people will just sit in their own offices."* This collective view underscores physical proximity as critical for network building between the companies.

Likewise, at Company C, multiple interviewees emphasize the significance of personal networks in the integration with the core business, particularly in accessing the required competencies. Interviewee C1 and C2 particularly underscore the role of personal networks in facilitating the selection of individuals from operational units to involve in their temporary project innovation structures. As explained by Interviewee C1: *"It's all about networking. Making sure to dig your way through to it. It could be that you go via the senior vice president levels and downwards, and then get referred to [other] people. [...] We have a tremendous number of colleagues so you find your way through."* Further, Interviewee C3 describes network building as especially significant considering the comparatively small size of the exploratory unit, and states: *"We try to work a lot with networking. For example, inviting others to our teams-meetings, or going to*

those of others. Given our size, networking internally becomes very important. It's something we notice is very crucial here in order to be able to push our projects through, knowing who to talk to and having the right contacts. So that's definitely something we try to do a lot." Yet again, highlighting its significance in guiding the exploratory unit in the search for specific competence within the operational structure.

Interviewee D2 at Company D similarly stresses personal networks as significant for integrating knowledge from operational structures into the initiatives of the exploratory unit. When prompted about how the exploratory unit locates the right competence, Interviewee D2 explains: *"I would say that internally, it very much depends on what you know that people work with. We are not the only unit within the company that drives innovation in terms of creating new revenue from different types of products. So, I would say that there is an internal network there."*

Spreading of Internal Awareness

The second sub-theme related to network building, spreading of internal awareness, concerns the ways in which the exploratory units employ personal networks to effectively disseminate internal awareness and facilitate communication about their projects across the core business.

At Company A, Interviewee A1 describes how the exploratory unit actively engages with operational parts to foster the creation of social ties and enhance awareness of their activities: *"One way through which we try to create social ties with the core company is by keeping part of our office open for meetings and such. Because then it becomes quite natural for people to say 'Can't you talk a bit about [the exploratory unit] for 20 minutes or so, while we're already here? Yes, absolutely, glad you asked', and then a connection starts to form."* The statement indicates that physical proximity and direct communication may facilitate the creation of linkages and the spreading of awareness. Further insights from Interviewee A2 and A3 reveal how personal networks established during their employment at the core business aid in communicating the activities of the exploratory unit. Interviewee A2 notes: *"Those who have previously worked at [the core business] have their network, so they spread a bit about what we do through that."* Similarly Interviewee A3 comments, *"Our old departments often want to hear a bit about 'Where did our employees go?' - sort of thing, so they reach out to us."* Both respondents thereby emphasize the significance of leveraging pre-existing networks for communicating their present activities in the exploratory unit.

Similarly, Interviewee B1 from Company B accentuates the importance of pre-established networks in disseminating awareness about the activities within the innovation hub, as well as in securing essential resources: *"We have something called a 'reference board' with people from across the company globally, who are the right 'phenotypes' - curious individuals with the ability to think outside of the box and have enough authority to say, on behalf of the function, that this is something we are willing to allocate resources to. So we have a sounding board that we work with continuously, and then, those of us who work in my team are all quite senior, so we have a huge network in the core company and outside the firm."*

Furthermore, at Company C, Interviewee C1 emphasizes the significance of network building in effectively communicating the exploratory unit's activities to operational employees, and ultimately embedding it into the future plans of the core business: *"Let's take [a specific technology] again, where we are trying to create a network, a grouping, with key personnel out in the operations who are anchored in the roadmaps of the product owners and in how they operate, so that we can find a good interface between us, where we can benefit from each other. We can see how it fits into reality that way. Because that's essentially our goal - to find ways to take this technology and ensure it is well-integrated into the operations, so we can release it. We network a lot to build precisely those connections."* Thereby indicating that the establishment of networks with operational units is crucial for the effective adoption and implementation of new technological advancements initiated within the exploratory unit.

4.1.6 The Role of the Individual

A consistent theme identified across the majority of the examined cases is the individual's role in facilitating the integration of explorative and exploitative parts of the organization. Within this theme, particular emphasis was placed on the importance of key members within the receiving operational unit possessing an explorative mindset. As noted by several of the respondents from the exploratory units across cases, explorative work requires a curious and open way of viewing new opportunities. For example, Interviewee A2 at Company A states *"What we are doing is not suitable for some personality types"*, underscoring the need for a different mindset. Similarly Interviewee B2 from Company B notes *"Individuals who are naturally curious and comfortable with the unknown are drawn to that environment [explorative work], whereas those who prefer a lot of order and organization do not seek out such environments."* The mindset of operational unit members with a key role in the integration therefore seemingly is of great importance in achieving a successful integration and this notion was particularly voiced by members from Company B and C.

At Company B, Interviewee B1 explains how they, at the exploratory unit, carefully select individuals from the core business who are suitable to collaborate with the scale-ups in their innovation hub and states: *"Not everyone here is suitable for contact with such companies... We can't just take a rigid-process type person and say, 'This is how you should do it,' because that doesn't work in a small company. So, we have go-to people, if you put it that way, who we know work well with these companies."* More specifically, the ideal scenario, according to the respondent, involves finding individuals who are not only committed to supporting the scale-up, but also personally motivated and driven to advance the project. Interviewee B3 likewise underscores the importance of finding the right individuals from the core business and comments: *"I think it's especially important to find the right people who have this need [for a solution], but also have the energy and passion to want to improve and change. I believe that. It's about people, so it works really well when you have that."*

The significance of internal drive and a curious mindset was also voiced by several members from Company C. When prompted about which individuals from the operational units should partake in their innovation project task forces, Interviewee C2 explains: *"I set no limits, but on a more meta level, those who have an interest and a damn drive. I'm more interested in personality than experience and competence. So your organizational affiliation is uninteresting, but your passion and enthusiasm are very important."* The respondent further suggests a selection approach that instead relies on self-selection where the exploratory unit depicts a destination and through this appeals to individuals' passion and drive, enabling them to voluntarily partake or not. However, the interviewee concludes by adding: *"This is a very difficult question, perhaps the hardest one that I've wrestled with when it comes to this type of activity - 'How do I find the right individuals in a large organization?' The individual is much, much more important than any title you have or position you hold or what function you are in."* Interviewee C4 voices similar thoughts regarding which operational product owners should interact with the startups in the corporate accelerator, and describes how the fact that the product owners are the ones who initiate the projects in the accelerator has mitigated the risk of encountering product owners with restrictive mindsets: *"I think we fixed like 90% of that by, you know, the product need [that the product owner needs to approach the accelerator for a project to start]. So that person that comes to us - that's an explorative person. That person is open for these kinds of solutions already."* Yet again stressing the fact that individuals with a certain mindset are better suited for interacting with more explorative initiatives.

Furthermore, while specific personality traits of operational employees involved in explorative activities are not extensively discussed by the interviewees from the exploratory unit at Company A, Interviewee A3 expresses encountering situations where individuals' inability to cognitively shift between exploitation and exploration has imposed collaboration challenges to a moderate extent. Examples of such occasions include situations where operational employees tasked with providing cutting-edge knowledge experience difficulties in grasping the logic of the explorative activities, attempting to apply old frameworks to make sense of the explorative activities.

4.2 Challenges

In the following sub-chapter, the results related to research question two are presented according to the key themes identified during the thematic analysis.

4.2.1 Process and Governance Incompatibilities

One consistent integration challenge that has emerged across all studied cases involves a mismatch in processes between the differentiated units when the exploratory unit interacts with those of the operational structure, a lack of smooth processes for facilitating the interaction, or incentive structures incompatible with the explorative activities.

Although all of the employees interviewed in Company A acknowledge that the exploratory unit operates with a high degree of autonomy and largely conducts processes distinct from the main structure, all of the respondents agree that certain processes and company procedures from the

operational structure constrain the activities of the exploratory unit during their interactions. As described by Interviewee A2: *"Some processes we haven't really been able to detach ourselves from, sometimes they resurface, and then you have to have that discussion again. Some processes may be more suited for these traditional organizations. Sometimes it's difficult for the rest of the organization to dare to let go a little bit. It's then easier to say, 'No, but this is the process that exists and that we should follow,' and then we are also drawn into that."* The perception that interactions with processes within the operational structure impede the pace of the exploratory unit's activities, which are described by Interviewee A3 as typically high-paced, is affirmed by Interviewee A1. Interviewee A1 exemplifies this challenge in the context of the process for financial approvals: *"There are processes here and there that clutter with approvals [...] which makes it a bit more slow-moving than we would have wanted."* The interviewee, however, indicated that these challenges were not of an all too severe nature: *"There haven't been any 'show stoppers' so far. It's only made us lose one day here, a week there, some hours there."*

Interviewee A3 highlights similar challenges related to decision-making processes and governance within the context of technical development. When prompted about the greatest challenges faced by the exploratory unit in conducting its operations, Interviewee A3 expressed the following: *"Rules. Without a doubt. People who love rules, they have an incredibly hard time adapting to... It's usually those who make these decisions in the end. I fully understand that safety must be ensured. There's no question about that, but [...] you can't really write the perfect paragraph. We work a lot on just understanding why a certain paragraph was written and how we can fulfill what it really aims to solve. And I can tell you, you can argue for years with the person who wrote that and they'll just insist, 'It must be like that'. [...] So rules, that's what throws a wrench in the works."*

The difficulties articulated by the interviewees from the exploratory unit regarding operational processes that are incompatible with the exploratory unit's activities are confirmed by the interviewee from the operational unit i Company A, Interviewee A4. The respondent describes the interaction with the exploratory structure as a balance between enabling the exploratory unit in their way of working while adhering to the governance of the core organization: *"It's about being as flexible as possible to meet their requirements within the regulatory framework of [the core company]. Everything should move quickly and their goal is to test, take risks and fail, which isn't quite how things work in [this industry] with its high safety standards. Finding the balance is a big challenge. [...] They think we take too long when they involve us, and I understand that. I'm torn between wanting to accommodate their way of working and working like them, but my job is also to ensure that we stay on the right side of the line. It's always a bit tough. 'We can't work that way', and then you feel so dull."*

Although the existence of similar challenges related to incompatible processes between the explorative and the exploitative units appears less prominent in Company B, Interviewee B6 reports another type of issue related to processes inhibiting the integration. During the discussion on how the demanding schedules of operational employees hinder collaboration, as elaborated in Chapter 4.2.2, Interviewee B6 describes a lack of processes facilitating the collaboration from a

legal perspective: *"If it becomes too difficult to get legal support, then I give up. It's not worth it, because it's not like I don't have plenty of other things to do. So I don't think it's easy enough to collaborate. Then more would do as I do."* The interviewee elaborated on the challenges experienced on the issue: *"What hinders me the most in this is getting the legal support. Getting the support needed to collaborate. [...] I have difficulty getting attention from the lawyers to help write an NDA or a CDA to get started. To the extent that I daily ask myself, 'is it really worth it, can I manage to cooperate?' It's too difficult. We have a lot to do to solve it."*

While no particular challenges have been identified related to processes in particular in Company C, Interviewee C4 highlights issues regarding the governance of the innovation projects overall, which the interviewee describes as inhibiting the integration of technologies outside the competencies of the core organization. Interviewee C4, who works within the accelerator at Company C, indicates limited possibilities for transferring solutions involving technologies outside the existing capabilities of the operational company: *"The weak point is that we need to have a product owner to do something. Which means that there are certain areas where we just cannot do anything, and I think we're losing opportunities there."* Interviewee C4 elaborates: *"So that transfer moment from, let's say exploring to sort of incubating, that can only happen when we actually have people within [the core company]. If you're a [specific technology] fan, you can just dress up a quite big [specific technology] project. But you will never get it over the next barrier, right? Or at least bringing it over the next barrier would require you to convince people that they should hire [specific technology] engineers."*

Meanwhile, the interviewee also contends that while the structure may present obstacles to the exploration of emerging technologies, it simultaneously facilitates project integration: *"But I think the core strong point is that we work with these people from that exploit walk, right. And we let them make the decisions, let them spend money. [...] If you would just go in and say 'I'm going to start an incubator, not really sure about what will happen, but hopefully we'll get a result in five years' time', someone will close it down after three years. But if you start this and say 'I'm going to work with your product engineers and their money, and I will save you on your own R&D, and I will have results in 12 months', that's much more, sort of fitting the corporate way of working."*

Interviewee C1, a manager in the exploratory unit, confirms that the governance structure entails challenges related to the breadth of areas being explored. Regarding the challenges perceived in conducting radical innovation within the company, Interviewee C1 describes the following: *"If you look at what we're doing innovation-wise, it's very much based on the product owners' problems here and now, and that it should be solved within a maximum of 3 years. [...] The downside of the strong product ownership is that it's very easy to end up in the here and now."* The interviewee further explains that the structure imposes pressure on individual employees within the core organization to balance the dual imperative of addressing current organizational needs while developing for the future, as further elaborated in Chapter 4.2.2.

In Company D, similar integration challenges related to a mismatch in the pace of the activities in the exploratory unit and the core parts of the organization are reported. Interviewee D5, a director from an operational unit with experience of collaborating with a start-up in the exploratory unit, explains: *"We consume a lot of time and energy and that can frustrate of course the startups who act fast, you know, make quick decisions and we are like the Titanic, right? We need time to move left and right."* This view is confirmed by the CEO of one of the startups in the exploratory unit currently in the process of being integrated into the operational structure, Interviewee D3. The interviewee states that despite the generally positive experience working with the operational employees of Company D: *"It's a way of working, and this isn't a criticism of [the company], it's simply the reality of dealing with a big company versus a small one. So in a company the size of mine [...] everything's online, we move very quickly. When you run a small company as well, from a financial point of view, you make decisions and move quickly. If something isn't working, you change it fast, you know. So it's kind of, whereas a company the size of [the company] is obviously the polar opposite to that."*

The challenges related to a mismatch in the processes of the different structures is further expressed by Interviewee D1, director of the exploratory unit, who describes that the decision making process for securing funding for individual projects at times inhibits the speed of the explorative activities: *"Normally we work in ways where we have yearly innovation plans in the company. You do the annual planning and the budgeting and so on, and we don't work like that. We have new ideas every day, we sprint, test them and so it's like a seamless process which doesn't follow the annual planning cycles [...] Sometimes it's a bit difficult when you ask for money, right? Sort of 'Is this a new year or last year?' So that's kind of sometimes a bit of a friction point."*

4.2.2 Deprioritization

Another challenge which has emerged across all examined cases is the tendency among operational units to deprioritize projects originating from the exploratory unit. This particular challenge was not as prominent during the interviews with the respondents from Company A as with other examined cases, although some tendency amongst the operational units to deprioritize the explorative project was still voiced by Interviewee A3. When prompted about the most significant challenges in the interaction with the core business, the interviewee responds: *"One challenge is a lack of resources. Now we've been lucky, usually, that someone might have a little time, but I think it's... Like the big [a specific project] inside [the company] has a higher priority than what we have, so then it might be that people say 'No, we can't come, we don't have time to talk to you.' 'Not even for an hour ?' 'No.' According to someone from a strange higher place, that hour is absolutely vital. And then it kind of becomes nothing."*

Interviewee B1, at Company B, similarly describes prioritization to be a challenge, and specifically highlights peoples' tendency to say *"no"* rather than *"yes"* to more uncertain projects, such as the ones developed outside of the core business in the exploratory unit: *"In the end it's always a question of... At all levels you have to prioritize and it's very easy to... It's very safe to*

say no because then you're not making a mistake. And in this, different functions, and different people, have a diverging tolerance for risk, but it's always easier to say no. But what we need to do is to be able to say yes more often and find a way to dare to say yes." Thereby suggesting that a less risk-prone mindset midst key operational stakeholders will lead to a deprioritization of explorative projects. Interviewee B1 further indicates how the short-term bias of operational employees may be mitigated by enabling them to understand the possibilities entailed in the explorative work: *"It's never going to be a priority, right. It is much more important to get us to deliver a new [specific product] to the market than it is to explore this [specific explorative innovation opportunity]. It goes without saying. So it's very much a question of getting people to believe in, and see possibilities in, the research offered here."* This view corresponds well with that of Interviewee B6, from the core business, who stresses that the experienced lack of resources and time demands the individuals from the operational units to realize the potential of integrating with the scale-ups from the exploratory unit for collaborations to occur. As noted by Interviewee B6: *"I think that everyone at [the company] knows that [the exploratory unit] exists. There are activities and things to engage in, but if you look at a workday, a workweek, or a work month with us, no one has time for anything extra. And that's where the problem lies. If you don't realize that you need to open up and work with others, and especially if you believe you can do everything better by yourself, then it's quite difficult to prioritize cooperating with [the scale-ups in the innovation hub]."* When prompted about whether anyone from their unit has engaged in job rotation at the exploratory unit, the respondent further states: *"I'm not aware of any cases where we've had job rotation there. I think that… I might sound negative, but I believe it's about this issue of 'Why is it more important than what we do, that is on our scorecards to fulfill by the end of the year?'"* Thereby indicating a bias towards prioritizing operational issues rather than engaging within projects from the exploratory unit.

At company C, all interviewees from the exploratory unit notably emphasize short-term bias, and the related deprioritization of explorative projects, as a significant challenge for the integration of explorative projects into the core business. Interviewee C1 for example states: *"The biggest challenge is how… We [as a company] have so much going on, today and tomorrow and what we need to deliver. So it's about getting people on board with the long-term perspective and then when [the operational units] take over something. Even if they find it very important, interesting, fun, and engaging. It's still firefighting today that takes priority."* The same respondents all agree that the willingness to explore and innovate exists within the core business but that in reality, the short-term focus takes president. As noted by Interviewee C3: *"What works well is that the [individuals from the operational units] are interested, they want to partake, and they are committed if we, for example, invite them to a workshop regarding [a specific project]. It's afterwards that becomes difficult, that's my feeling. Actually having those projects prioritized when it really comes down to it, that is, when they have their deadlines and everything. To actually allocate resources, budget, and everything to more explorative projects."*

Interviewee C2 further voices similar concerns as the ones raised in Company B regarding the operational units' lack of resources and distancing to uncertainty. However, in order to attend

to this, the respondent adds that the existence of sufficient competence and capabilities within the organization is vital to encourage adoption: *"In order for a product owner to dare to take over [their project] we need to create a sense of security that the right capabilities are accessible organizationally, whether internally or externally. Because they operate with such a tight budget, both time and financial wise, to deliver. So they do not have the time, energy, or strength to work with uncertainties. So I consider that to be the biggest challenge we have. The willingness is there, but I know that when we come with a [specific technology], the resources and competencies will be critical for them to be able to accept."*

Furthermore, both Interviewee C1 and C2 raise concerns regarding the fact that the operational product owners are tasked with ensuring both current and future performance within their product area, and question whether the conflicting logics can be properly balanced within the frames of the same individual. As noted by Interviewee C1: *"I feel that we [as a company] lack a certain structure around innovation. That there is a very strong belief that every individual and every product owner should be able to handle everything from today's deliveries and quality issues, to a very long-term view into the future, because after all, they are only human. That is what I believe we need to complement in our operation today."* Furthemore, Interviewee C5, manager from the core business, notably stresses customer demand as a criteria for which projects to prioritize within the operational units: *"But what I'm really after is that everything has to be linked to customer scenarios. We need to have a customer focus in the development of new technologies. So just because there is a promising technology we still need to place it in a customer context - 'How will our customers benefit from it?'"* Thus indicating that more uncertain projects which lack a clear application of customer value, may be deprioritized within the operational units.

The challenge of deprioritization was not mentioned as frequently during the interviews with the exploratory unit members at Company D. However, it was voiced as inhibiting the integration of an explorative project by Interviewee D3, CEO of the involved startup, and Interviewee D5, director from the operational organization who has been actively engaged in the startup collaboration since initiation. Interviewee D5, for example, expresses how a lack of clear processes and incentivizing structures for projects originating from the exploratory unit lead to a deprioritization: *"There is an element of size. If you have a business of [the company in a specific region] that is, let's say €100 million, and then you have this startup idea that on paper, the pilot of it, has a value of half a million. You, the people that are managing this pilot in the local market, I'm gonna focus on the 100 million and not necessarily on the half a million. So that is misaligned incentives [. . .] At the end of the day these people will be responsible to deliver their 100 million, to deliver the brand objectives, to deliver the brand goal. And maybe not so much to deliver on the pilot goal."* The respondent further states that they believe it to be necessary to instate some form of top-down rules regarding how the operational members should divide their time between their regular day-to-day activities and the more radical projects originating from the exploratory unit, to mitigate the experienced short-term bias. Interviewee D3 agrees with the portrayed situation and describes how the lack of alignment between the exploratory unit and the core business results in viewing the exploratory unit as operating in *"a bit of a bubble"* and consequently not necessarily

part of, or properly prioritized in, the rest of the company. As noted by the respondent: *"But then what you've got is a situation where you're then introducing this silo into a brand team with a whole bunch of other plans and strategies and objectives and targets, and they're supposed to just kind of fit that in. I think the level of priority is quite confused. Because it's kind of 'What even is this', like 'We have nothing to do with this'."*

4.2.3 Lack of clarity

Furthermore, an aspect that has been recognized across two of the cases is challenges connected to a lack of clarity in how the integration of explorative projects should be organized. At Company C, respondents from the exploratory unit express uncertainty about what exactly is included in their mission and consequently how they should integrate their explorative projects within the core business. The unclarity, according to Interviewee C2 and C3, concerns whether they should look for new opportunities in areas where there exists gaps in regards to current company activities, or in areas where there already exists product owners and thereby support these with future technologies. This issue is closely related to the question of from where to source their funding (see Chapter 4.1.3, section *Source of Funding* for more detailed explanation in regards to the funding aspect). The two diverging focuses further require different ways of integrating their projects into the operational structure, as Interviewee C2 explains: *"I come back a bit to the issue of the ambiguity in the mission, because if we are to be true to [the unit's CTO]'s definition of what we are supposed to do, then there is no product owner to hand the project over to [because it is a gap]. Instead, we would need to create that product owner, and this is really an organizational issue that probably lies on top-management level. So, that is one type of handover. We have never tried it, but it will present a certain challenge, I must say. And the other scenario is, if we do what [the CTO] says we should not do, that is, work with a technology within an existing product owner structure, well, then that is another type of handover to the product owner."* The view of the integration as somewhat unclear is shared by Interviewee C5, manager from the core business: *"We might not have a completely clear workflow right now..."*

A lack of clarity regarding the integration of explorative projects is likewise expressed in Company D, although not from members of the exploratory unit. Instead, the concern is raised by Interviewee D5, director from the operational organization involved in the startup project, and Interviewee D3, CEO of the start-up involved. Both respondents express that they have enjoyed working with the exploratory unit on the start-up project, and that they believe in the concept as such, but request clearer procedures as to how the explorative project is to be integrated into the organizational framework of the company. As stated by Interviewee D5: *"I think you need to find a way, once you have an idea coming in from [the exploratory unit], there is a process and a way of working to inject it and include it into the operations of the business. I don't feel like there is a specific process and maybe because that's the whole idea, right, that you cannot really define a process for something that is completely new and different to the business [...] But it feels to me that we find the startup or the idea, we see that there is a potential there, but then taking it to the next level seems more hard work than it should be and we consume a lot of time and energy*

and that can frustrate the startups who act fast. So I think you know, bridging that gap will be important moving forward to integrate that idea quickly." The respondent further elaborates on the lack of clarity experienced in the specific startup project as uncertainty regarding governance and ownership once it was integrated into the operational unit: *"I think it was very unclear who drives what and who has the ownership. Is it [the exploratory unit]? Is it me coming from [a specific function]? Is it the local team who own the P&L? And who will be making, I guess, more of the investment decisions? So that governance has not been very transparent from the beginning and everybody's trying to figure out who has the authority here. Who is making the decisions."* Interviewee D3 likewise expresses a lack of clarity surrounding how it is to be integrated into the plans and agendas of the core business. Further, when prompted about reasons for why the project may not have been prioritized in the agendas of the core business, the interviewee responds: *"I think the bottom line is that I don't know because obviously there are multitudes of meetings, and conversations, that I have nothing to do with. [...] You know, as the startup working with the corporate, you're very much sort of out, on the outside. So I have no idea what agendas, priorities, resources, budgets. No idea."*

5 Discussion

In this chapter, the results of this study will be connected to, and discussed in light of, the theory presented in Chapter 2. The chapter is divided into four subchapters, one in which formal integration mechanisms are discussed, a second in which informal mechanisms are addressed, a third in which prominent challenges are examined, and lastly a fourth in which a concluding discussion is presented surrounding possible implications of employing the identified integration mechanisms. As two of the integrative aspects identified in the analysis was found to primarily support other integration mechanisms, those have been included as parts under the chapters on integration mechanisms to which they appeared to be strongly linked. Namely, Senior Management Support is included under Chapter 5.1.2 and Chapter 5.3.2, and Physical Proximity is discussed in Chapter 5.2.1.

5.1 Formal Integration Mechanisms

5.1.1 Resource Linking

A more prominent integration mechanism that surfaced across all examined cases in various forms is the sharing and transfer of resources between the exploratory unit and the operational structures of the company. In all companies, resource sharing, particularly from operational structures into exploratory units, has been described as a pivotal mechanism for the overall success of the explorative activities, and each exploratory unit is expressed to sporadically leverage distinct competencies from the operational business in addressing specific challenges or needs as they arise. For instance, the exploratory unit in Company A reports a more frequent utilization of support functions, such as purchasing and human resource management, as well as the leveraging of distinct cutting-edge expertise on a less frequent needs basis, enabling the maintenance of a leaner organization. This integration pattern aligns with one of the formal integration mechanisms

Table 5.1: Identified integration mechanisms within each case company, with bold symbolizing a relatively stronger prevalence and parentheses a weaker. Asterix in Company C's column symbolizes identified occurrences in the company's accelerator.

Identified Integration Mechanism Occurrences				
Formal	*Company A*	*Company B*	*Company C*	*Company D*
Resource Linking: Job Rotation	**X**	X	X*	
Resource Linking: Temporary Task Force			**X**	X
Resource Linking: Sporadic Work Efforts	X	X	X, X*	X
Resource Linking: Leveraging Infrastructure		**X**	X*	X
Resource Linking: Liaison Function		**X**	X*	**X**
Acceptance Building: Demonstrating Value Creation	X	**X**	X,X*	X
Acceptance Building: Creating Internal Awareness	**X**	X	X	X
Acceptance Building: External Validation	X		X	**X**
Source of Funding (Lack of Designated Budget)			X, X*	X
Operational Influence on Explorative Projects	(X)	(X)	**X, X***	**X**
Operational Ownership & Sense of Participation (Early)	(X)		X, **X***	X
Senior Management Support	**X**	X	**X**	X
Physical Proximity	X	**X**		
Informal				
Networks: Access to Knowledge	**X**	**X**	**X**	X
Networks: Spreading of Internal Awareness	**X**	X	X	
The Role of the Individual	(X)	X	X, X*	

that concern the reallocation and transfer of resources highlighted in structural ambidexterity theory (*"cross-functional interfaces"* in Jansen et al., 2009; *"exploratory-complementary linking"* in Hansen et al., 2019).

In addition to a more sporadic flow of knowledge from operational structures into exploratory units, all companies participating in this study employ at least one specific form of resource linking, as described in the literature. Three of the examined cases utilize job rotations, where operational employees are temporarily employed in the exploratory unit before returning to their original roles. This resource linking mechanism, identified by Gassman et al. (2012) and Hansen et al. (2019), is described to enable the leveraging of synergies associated with expertise as well as facilitating future radical innovation transfers. However, while the majority of the companies employ this same type of mechanism, the motives behind the employment vary slightly across the firms. In Company A, job rotations are employed for varying durations to address specific

tasks or expertise gaps within the exploratory unit, aiming to provide with lacking competencies, but also to foster the transfer of novel ideas and knowledge back into the operational structure. Similarly, in Company B, the motivation is driven by a bidirectional knowledge flow. However, unlike Company A, where the flow from the operational to the exploratory structure appears to be the primary concern, a bidirectional flow is described as a prerequisite for the initiation of job rotations in Company B. In the direction from the operational to the explorative structure, this flow may be related to extensive industry experience valuable to the less mature hub scaleups, while the opposite direction may involve e.g. novel, non-traditional development methods. The extent to which this specific practice is employed in Company B, however, remains unclear, as several interviewees were unaware of its prevalence at present. Meanwhile, in Company C, the primary concern of the accelerator employing a similar mechanism is described to be the strategic equipping of operational employees with an ambidextrous mindset, rather than solely providing the unit with lacking expertise. This effect is further elaborated in Chapter 5.1.3 *"Acceptance Building"*.

Another specific form of resource linking described in ambidexterity literature that has been identified, to some extent, in two of the companies is the temporary task force, which refers to a temporary structure assembled to execute a specific project and dissolved upon its completion (Jansen et al., 2009). In the case of Company C, efforts are underway to develop structures around specific high-potential technologies spanning a variety of industries, bridging expertise not only residing within the exploratory and operational structures of the company, but also aimed at exploring how this particular type of emerging technology fits within the broader industry context. Company D instead utilized a variety of temporary structures around individual explorative initiatives aimed at developing startup innovations in significantly shorter bursts of innovation and development, that were then dissolved upon the termination of the competition or within a period thereafter.

An aspect of resource linking that has been observed in several companies, but notably significant in one, is the practice of sharing resources in the form of infrastructure. In Company B, the utilization of operational infrastructure by the exploratory unit is reported to be a key aspect in the leveraging of synergies between the structures. While radical innovation literature indeed emphasize the importance of sharing or reallocating resources for succeeding with radical innovation (Van Looy et al., 2005; Raisch & Tushman, 2016), the focus rather seems to be on resources in terms of expertise or funding, which then differs from the primary emphasis of Company B.

Further, in the majority of the companies examined in this study, a liaison function was identified, aimed at facilitating interaction between individuals in the exploratory and operational structures within the organization. This function shares similarities with one of the integration mechanisms described by Jansen et al. (2012), which pertains to the utilization of liaison personnel to enable integration between differentiated exploratory and exploitative structures. However, unlike the integration-focused liaison personnel described by Jansen et al. (2012), who primarily address conflict resolution and goal ambiguity between the structures, the identified liaison functions

seem to be primarily embodied by personnel within the exploratory unit itself rather than by entities external to the explorative structure. These functions appear to be mainly concerned with facilitating communication and coordination, predominantly by enabling the flow of knowledge from the operational structure into the exploratory structure. Company B, Company D, and the accelerator in Company C, wherein this function was identified, differ from Company A, where this integration mechanism was not identified. This difference may stem from their more direct involvement in integrating external entities (i.e. the startups, scaleups, or other) into the exploratory unit to pursue radical innovation. In such cases, the presence of personnel in the exploratory unit might serve as a link to connect these external actors with the necessary knowledge within the operational structure. This primary function of the liaison function, enabling knowledge flow between structures, aligns with the role of liaison personnel described by Fang et al. (2010) in facilitating knowledge exchange across the organization. Further, in Company B, personnel within the exploratory structure are described to be concerned with the identification of opportunities for collaboration between the companies in the hub and the operational structures. This finding is consistent with Fang et al.'s (2010) description of how liaison roles can foster the identification of synergies.

5.1.2 Acceptance Building

The findings show that the exploratory units across all studied cases engage in various types of activities to build acceptance for the exploratory unit and its operations within the operational structure. The companies' employment of such measures aligns well with Chen and Kannan-Narasimhan (2015), who emphasize the importance of accumulating sufficient support and buy-in from the operational structures of the organization, as a lack thereof is a common source of failure in the successful transfer of radical innovation. While this mechanism can largely be regarded as formal, given that it involves explicit, pre-established means, it can also be considered informal in the sense that it seeks to generate an integration-facilitating feeling among operational employees that, in turn, can be considered an informal mechanism. However, as the results and theory mainly concerns the formal aspects of the mechanism, the primary focus will reside upon this formal perspective.

One measure for fostering acceptance, observed across all exploratory units examined, involves the demonstration of outcomes, or progress, of activities conducted within these units to the core organizations. These activities closely align with the integration mechanism described by Gassman et al. (2012), termed *"showcasing innovation"*, which encompasses measures aimed at concretizing tacit knowledge and abstract innovation concepts into tangible artifacts. The artifacts are then distributed throughout the organization and are described to facilitate the dissemination of radical innovation outcomes, serving to stimulate curiosity, evoke emotional engagement with radical innovation, and ultimately enhance its acceptance throughout the organization. While the activities employed in the cases resemble the mechanism described by Gassman et al. (2012), in that they concern the demonstration of concrete outcomes of explorative activities to the operational structures, the authors in their description focus more on the concretization and dissemination of early-stage innovation ideas. Conversely, the majority of the exploratory units

in the study appear to prioritize the communication of innovation projects that are further along in their development, either in a relatively mature stage or having already been successfully transferred. This prioritization appears aimed at legitimizing their operations within the core structure and enhance the willingness of operational members to engage in future explorative activities.

Additionally, within the exploratory unit of Company A, the importance of demonstrating value generation in a broader sense, beyond specific innovation projects, as a means to increase acceptance of explorative activities is highlighted. The findings suggest how such positive effects have been realized through the distribution of learnings regarding the possibility to employ a certain production method in a novel manner. While the aforementioned demonstration of value seems to extend beyond the definition provided by Gassman et al. (2012), which primarily focuses on the concretization of abstract innovation ideas, it aligns with the description provided by Hansen et al. (2019). The authors define innovation showcasing in a broader sense as the distribution of exploration results to legitimize the exploratory unit.

Another related means of fostering acceptance towards the exploratory unit described in the literature that has been identified in the majority of cases is *"external validation"*. This mechanism, outlined by Gassman et al. (2012) and Hansen et al. (2019), involves the leveraging of external actors to internally signal sufficient market-based or technological expertise to the core structures of the company, thereby reducing technology or market related uncertainties. This form of acceptance building has been identified in two different forms in the cases studied. In two of the companies, Company A and D, the exploratory unit is described to utilize market indicators in relation to particular initiatives, obtained through direct interactions with potential customers, as a means to mitigate market uncertainty. These indicators are subsequently leveraged in interactions with the operational segments of the company to validate the individual projects. In an equal number of companies, Company C and D, the exploratory unit is reported to employ external means instead in the form of expertise from academia or other industries to supplement the capabilities of the exploratory unit. This external competency is leveraged in interactions with the operational side to validate exploration in specific areas or to enhance the credibility of exploratory initiatives through collaboration on various research components.

In addition to the two abovementioned acceptance-building mechanisms described in Gassman et al. (2012) and Hansen et al. (2019), another type of integration mechanism aimed at fostering acceptance for the exploratory unit has been identified across all of the studied cases. This mechanism involves the dissemination of awareness about the exploratory unit, its purpose, and its operations, with three of the companies (A, B and C) explicitly expressing the aim of garnering acceptance. While this form of acceptance-building bears similarities to *"innovation showcasing"*, in that it involves communicating information related to the internal activities of the exploratory unit, it differs in that it does not directly focus on concretizing only the outcomes of the exploratory initiatives. Instead, the focus resides upon, in a more general sense, spreading in-

formation about the exploratory unit to create a widespread understanding of its work and purpose.

In addition to these more prominent activities aimed at fostering acceptance for the exploratory unit, two other integration mechanisms have emerged as factors influencing the acceptance towards the explorative activities and, thus, according to Chen and Kannan-Narasimhan (2015), ultimately the success of radical innovation transfers: *the Support of Senior Mmanagement* and *Job Rotations*. Across all cases, interviewees portray the support of senior leaders as a critical enabler for the ongoing work and success of the exploratory unit, facilitating the interaction with the operational structure. The findings suggest that this support facilitates access to resources within the operational organization, for instance by making it difficult for operational employees to deprioritize providing expertise or funding to the exploratory structure (Company C), or by affirming operational personnel interested in engaging in radical innovation projects (Company B). While no prevalent literature has been discovered explicitly discussing the role of senior management support in enabling resource linking between exploratory and operational structures, top management team support has generally been depicted as a critical enabler for radical innovation (Gilley et al., 2002).

Furthermore, the utilization of job rotation mechanisms by companies has proven to serve not only as a means of resource provision but also, notably for Company A and Company C, as a mechanism aimed at fostering acceptance. While fostering cohesion, and thereby enhancing acceptance towards the exploratory unit, is described as a key factor behind the job rotations in Company A, similar motives are expressed in Company C. In the latter, job rotations within the accelerator are described as partially strategically orchestrated to place individuals within operational units who can subsequently raise awareness and serve as integration champions in future integrations of explorative projects. This reasoning aligns well with the integrating effects Gassman et al. (2012) and Hansen et al. (2019) highlight in relation to job rotations, namely the strategic placement of ambidextrous mindsets within the operational structures to facilitate access to operational expertise and garnering general acceptance for radical innovation.

5.1.3 Operational Decision-Making and Advisory Boards

The findings further provide valuable insights into the formal top-level integration mechanism of operational influence and decision-making authority presented by Chen and Kannan-Narasimhan (2015), and its impact on the integration of projects originating from exploratory units. The extent to which operational units influence the direction of the explorative projects has varied significantly between the cases, both in regards to source of funding and who holds decision-making authority regarding project initiation and continuation.

As presented in the findings, most of the companies employ advisory boards, which in line with what is presented in Chen and Kannan-Narasimhan (2015) consists of key stakeholders from the core business who possess the authority to influence the activities within the exploratory units. Similarly to what is presented by the authors, the advisory boards of the case companies vary in terms of which role they assume, advising or supervising, and the amount of decision

making power they exert. For example, the exploratory units of both Company C and Company D experience an earlier involvement of operational executive boards who have the authority to both terminate and influence the direction of the explorative projects. They further do not receive a designated research budget that covers the majority of the project costs and therefore must approach the board or other operational stakeholders in order to secure funding to progress their projects. As explained by Chen and Kannan-Narasimhan (2015), this kind of early involvement, typical of projects resembling what the authors refer to as *Archetype 1* or *Archetype 2* in regards to decision-making authority, could facilitate the integration but may also restrict the radicality as more explorative projects, characterized by uncertain, long-term opportunities that are not clearly aligned with, or threatening to, current business (March, 1991), may be disfavored. The findings from Company D might indicate such a restriction in radicality, considering that the executive board are responsible for providing the opportunity spaces for the exploratory unit's activities and that these are selected, at least partially, based on alignment with existing business areas. Additionally, the data display that market indicators greatly shape decisions regarding project progression, which could, according to (Miles et al. 2017), potentially lead to a prioritization of projects with more predictable returns, commonly associated with less radical, short-term innovations.

Moreover, the data reveals that the exploratory unit at Company C experiences more autonomy in exploring which technological areas to pursue. However, the unit still requires the CTO-network, or the concerned product owner, to approve project advancement, which similarly could impact the radicality of the projects in line with what is described by Chen and Kannan-Narasimhan (2015). This is somewhat supported by the findings regarding the exploratory unit's funding, where concerns are raised that the lack of a designated budget will result in deprioritization of projects that are more uncertain, or which do not align with the technologies of the current product owners as these may threaten their own technologies existence. The anchoring of the technology within the CTO-network is however presented within the findings as key to enabling an integration of the explorative technology within the company. Thereby, aligning with Chen and Kannan-Narasimhan's (2015) observations regarding an early involvement's coherence with ease of integration. Regarding the company's accelerator, the findings similarly suggest the funding to be provided via the core structures, i.e. from the concerned operational product owner. However, the accelerator's senior innovation manager seems to possess a different perspective on the effects of this arrangement in relation to the accelerator's projects. The data reveal that the respondent perceives the need to access funding and resources from the product owners to greatly enhance the probability of a successful integration. Thereby, yet again supporting what is presented in Chen and Kannan-Narasimhan (2015).

The findings further reveal that Company B also engages an advisory board in decision-making regarding which companies to include in the innovation hub, although adopting what seems to be more of an advisory role. The fact that the board still possesses influence as to which companies to include may however lead to a prioritization of companies more closely aligned with current business areas, which in line with what is presented in Chen and Kannan-Narasimhan (2015)

could restrict the radicality of the explorative ventures.

Furthermore, based on the findings from Company A, the project executed within the exploratory unit seems to be more representative of what Chen and Kannan-Narasimhan (2015) refer to as *Archetype 3*, in regards to decisions-making authority, as they experience a significantly larger autonomy in regards to funding and governance. The direct allocation of a designated budget to the exploratory unit seems to be significant to how flexible and autonomous they regard themselves to be, which resonates with Chen and Kannan-Narasimhan (2015) suggestions that projects of *Archetype 3* are less restricted in terms of aligning with current business. The fact that the exploratory unit require an approval from top-management in order to initiate the projects however deviates from how *Archetype 3* projects are described by Chen and Kannan-Narasimhan (2015), and may result in prioritization of less uncertain projects which align with current business, more similar to those of *Archetype 1* and *Archetype 2*.

5.1.4 Ownership and Sense of Participation

Closely related to operational influence and decision-making authority is the issue of who possesses the formal administrative ownership of the explorative projects and when, or if, it passes to the core business. The findings in our study contribute to the understanding of how administrative ownership affects the integration, largely aligning with the observations presented by Chen and Kannan-Narasimhan (2015) and Gassman et al. (2012).

As explained by Chen and Kannan-Narasimhan (2015) the transfer of ownership of projects originating from the exploratory unit needs to be employed in a timely manner to enhance the probability of a successful integration. The findings from Company A illustrate how the ownership of the explorative project is intended to pass over to the core business once the project has reached a degree of sufficient maturity, characterized by a clear plan for advancements and initial commercialization decisions taken. The data reveal that the reasoning behind this strategy is dependent on a fear of deprioritization if the project were to transition too undeveloped, which resonates well with ambidexterity research underscoring companies tendency to prioritize exploitation above exploration due to its inherent unpredictability and distant returns (March 1991; O'Reilly & Tushman, 2008; Baum et al., 2000). This further aligns with the *"acceleration"* component of a company's radical innovation capability, described by O'Connor and Ayers (2005) as essential for succeeding with radical innovation. The component concerns the need for firms to accelerate the emerging business proposition before transfer, until it is able to survive independently among the current activities of the core business. Thus suggesting that explorative projects need to be nurtured into a stage of less uncertainty before they transition, for a successful integration to occur. In addition, the findings resonate with Chen and Kannan-Narasimhan's (2015) descriptions of *Archetype 3* projects with regards to how ownership is gradually transferred once the project reaches a stage of less uncertain returns, due to the unwillingness of operational units to invest resources into uncertain, unaligned initiatives.

Despite the earlier described similarities between Company D's explorative projects and *Archetype 1* och *Archetype 2* with regards to decision-making authority, the data illustrate similar traits to Company A concerning the passing of administrative ownership. The findings suggest a gradual passing where the official ownership is transferred at the point of market integration. Thus somewhat departing from Chen and Kannan-Narasimhan's (2015) description of *Archetype 1* and *Archetype 2* in regards to administrative ownership.

The findings from Company C display a similar passing of administrative ownership if the explorative project encompasses a technological area where the company lacks prior experience. In this case a gradual passing is suggested to be executed where ownership will not be transferred until the technology has been thoroughly embedded within the core business, similar to what is described by Chen and Kannan-Narasimhan (2015) as associated with *Archetype 3* projects. However, in the case that the technological opportunity is clearly aligned with the expertise of a current product owner, the ownership and governance is explained to become decentralized and the concerned product owner will possess the official ownership from project initiation. Thus illustrating a more dynamic approach where the specific project determines the type of transfer. This aligns with Chen and Kannan-Narasimhan's (2015) observation that the same company may utilize varying modes depending on the characteristics of the concerned project. Conversely, in regards to projects residing within the company's accelerator, the data reveal that the concerned product owner clearly possesses the formal ownership from initiation in all venture projects. The findings suggest this to significantly facilitate the integration into the operational units, as the accelerator's senior innovation manager underscores that the probability of successful transfer and further implementation into the final product significantly increases as a direct effect of their ownership.

Additionally, the data reveal that most of the exploratory units actively try to foster a sense of ownership and participation among operational members to facilitate the transition of explorative projects into the core business. Thereby aligning with Gassman et al. (2012), who suggest that early involvement of operational employees may ease the transition by creating a sense of ownership and reducing organizational uncertainties. While administrative ownership is regarded as a formal mechanism, sense of ownership constitutes a more informal take on ownership where the intention is to generate a feeling of participation among operational personnel.

For instance, the results from Company C and D suggest that their exploratory units believe early involvement of operational personnel to be integral for a successful transition to take place. Specifically, the exploratory unit at Company C uses iterative anchoring with the CTO-network to embed new technologies within the organization. The intended establishment of temporary task forces and innovation structures surrounding the new technologies further serves as a way to engage operational members and integrate the new technologies into their strategic roadmaps. This approach, focused on establishing a foundation for the technology within the organization, is described as crucial for effective integration and transition of explorative technologies. The findings from the interview with the operational employee further support the need for early

involvement of operational employees and for fostering a sense of participation, as the respondent strongly emphasizes the importance of anchoring the new technologies with the operational product owners for successful transition.

Similarly, the data collected from interviewees from the exploratory unit at Company D reveal that early involvement fosters a sense of participation amongst operational members, likewise aligning with what is presented in Gassman et al. (2012). The findings further suggest the sense of participation to mitigate resistance and deprioritization during and after transfer of explorative projects, ultimately enhancing the probability of a successful integration. Furthermore, the data reveals that aligning the explorative projects, from initiation, with the current activities of operational business units in a way that enables their understanding of how those can be integrated within their businesses, contributes to a greater engagement from operational personnel. Thereby aligning with the descriptions of Gassman et al. (2012) and Chen and Kannan-Narasimhan (2015) regarding how aligned projects are easier to transfer.

Moreover, interviewees from the core business at Company A and B emphasize the fact that their personal involvement significantly increased their sense of ownership in the activities of the exploratory units. Thereby further supporting Gassman et al.'s (2012) assertion that the involvement of personnel from operational structures contributes to fostering a sense of participation and ownership.

5.2 Informal Integration Mechanisms

5.2.1 Networks and Connectedness

The findings further provide many examples of the significance of networks and network building in facilitating the integration between the exploratory unit and the operational structure. This is also confirmed by theory as both Jansen (2009) and Gassman et al. (2012) present the creation of social ties within the company as a significant informal integration mechanism for successful transition of explorative projects. The data illustrate how the exploratory units, in all the case companies, utilize these networks in different ways, as it is described to be employed both for accessing knowledge and identifying the right competencies, as well as for spreading internal awareness of the exploratory unit's activities.

The data reveal that interviewees from the exploratory unit at both Company C and Company D regard informal networks as vital for the identification of and access to adequate knowledge within the core structure. Specifically, findings from Company C suggest personal networks to be integral for identifying and involving the right operational members in their temporary task forces focused on new technologies. The fact that personal networks are expressed to facilitate the sharing of knowledge across units aligns with Jansen et al. (2009), who describe that dense personal networks enhance employees' ability and motivation to integrate their knowledge. Additionally, the findings reveal that the networks aid in spreading awareness about the exploratory unit's activities and integrating new technologies within operational units. This supports Gassman

et al.'s (2012) observation that personal ties can be used to spread explorative ventures throughout an organization and thereby facilitate their adoption.

The findings from the interviews with the members of the exploratory units at Company A and B further confirm the importance of personal networks for identifying and accessing the right competencies, as well as for spreading internal awareness about explorative activities. However, the data collected from these companies also highlight the significant role of pre-established networks in facilitating this integration. Notably, an interviewee from Company A mentioned that their pre-existing networks, formed during their employment within the core business, greatly enhance the ease of interaction with operational units, as it allows them to circumvent protracted processes which could have severely delayed the explorative research.

Moreover, the findings suggest that physical proximity has enhanced networking opportunities at Company A and Company B. This complements what is presented by Gassman et al. (2012) concerning how direct communication is essential for establishing personal ties between employees. Even though the data reveal that the two companies exercise different degrees of physical separation, where the exploratory unit at Company A are located in a separate building and the one at Company B is described to be physically co-located with the core business, both highlight physical proximity as an enabler for creating linkages to operational personnel. Specifically, findings from interviewees at Company A describe how hosting meetings and conferences for core business members in their offices fosters informal social integration, allowing the exploratory unit to spread awareness about their activities. The data from interviewees at Company B instead suggest a more central role of physical proximity where it is viewed as instrumental for creating networks among members of the innovation hub and the core business, and through this promote knowledge exchange and collaborations. This is exemplified by the instance where one of the companies within the innovation hub adopted an operational manager from the core structure, an event described as unlikely to have occurred without the physical co-location. Moreover, the findings illustrate that physical co-location can enable spontaneous interactions to occur between these members, which are further suggested by the findings as fundamental for merging diverse perspectives and driving innovation within the exploratory unit.

5.2.2 The Role of the Individual

An aspect that has emerged from the findings across two of the companies is the significance of individual employees' characteristics as an integrative mechanism between explorative and operational units. In Company C, for instance, it is noted that personal traits, rather than solely experience and expertise alone, primarily determine which operational employees are selected to participate in the groups formed for exploring certain technologies. Although within slightly different contexts, both emphasize the importance of a higher degree of openness and enthusiasm or curiosity among the individuals from operational structures involved to enable the success of the collaboration. The emphasis on the personal character of the operational employees engaged in the innovation process, as revealed in the interviews, aligns well with the literature on innovation

champions. This literature not only stresses the significance of innovation advocates throughout the company in enabling specific radical innovation projects at various stages (Howell & Higgins, 1990; Jenssen & Jørgensen, 2004), but also highlights specific characteristics typically associated with such individuals. According to Jenssen & Jørgensen (2004), a high level of energy and drive are key qualities of innovation champions, who not seldom must advocate for the innovation over extended periods. This resonates well with the openness and enthusiasm sought in the operational employees that the exploratory units aim to involve in radical innovation projects.

While not all companies explicitly state that the operational employees involved in radical innovation projects are intended to act as innovation champions within the operational structures, one interviewee at Company A clearly expresses this as one of the motives behind employing job rotations. In Company C, this is similarly cited as one of the primary purposes behind utilizing job rotations, to purposefully situate individuals with explorative mindsets. The use of job rotations for such purposes aligns well with the integrative effects of job rotations described by Gassman et al. (2012) and Hansen et al. (2019). The authors similarly describe how this resource-linking mechanism can be leveraged to strategically position ambidextrous mindsets among operational employees across companies, facilitating the integration of future radical innovation projects.

The importance of individual employees' ability to balance both exploration and exploitation, across the organization, to enable the success of radical innovation within the company is also emphasized in the literature on individual ambidexterity (Birkinshaw & Gupta, 2013; O'Reilly & Tushman, 2013). This perspective further supports the perception shared by interviewees in Company C that some individuals naturally lean towards, or against, enacting ambidextrous behavior, especially when describing the specific types of people involved in radical innovation projects within operational structures. Tempelaar and Rosenkranz (2019) describe how certain individuals may struggle to transition into the explorative context without bringing along old thought patterns that may inhibit innovation in that specific phase, a challenge also expressed in Company A regarding the involvement of certain cutting-edge knowledge from the operational structures. However, while the authors support the idea that exposing individuals to new reference frames through assigning them an exploratory role via job rotations may enhance their ambidextrous ability, they argue that achieving such an effect ultimately depends upon how the individual subsequently integrates, or separates, these different perspectives in various situations. This suggests that job rotations may only be effective if the individuals selected for such roles possess integrating characteristics.

5.3 Challenges

5.3.1 Process and Governance Incompatibility

Across all companies included in this study, an evident pursuit of an ambidextrous strategy partly characterized by the structural separation of explorative and exploitative activities into separate units has been identified. This strategic approach aligns well with the prevalent stream of ambidex-

trous literature advocating for a structural approach to ambidexterity to enable the simultaneous existence of conflicting managerial practices adequate for the respective type of activity (e.g. Tushman & O'Reilly, 1996; Raisch & Birkinshaw, 2008; Chen, 2017). While the study cannot definitively establish the extent to which the practices of the exploratory units diverge from those within the core structures, employees across all companies express, in line with the structural ambidexterity literature, a clear distinction between the practices within the exploratory unit and those of the operational structure.

However, despite the exploratory units' reported autonomy and distinct processes from the core organization, instances, such as observed in Company A, reveal regular utilization of certain support functions within the operational business. While this practice aligns with Van Looy et al.'s (2005) emphasis on ambidextrous organizations' leveraging of synergizing between exploration and exploitation as a necessity for outperforming focused companies, Raisch et al. (2009) raise certain risks with such integrative efforts. The authors argue that a combination of structural differentiation with tactical integration may counteract the separation shielding the explorative activities from inertial forces within the operational structure. This concern finds resonance in at least one company (Company A), where an observed incompatibility between the support processes of the operational structure and those of the exploratory unit has somewhat, albeit not excessively, hindered the latter's effectiveness. Similarly, the findings suggest the existence of similar challenges in Company D related to a difference in the pace of the activities between the exploratory unit and the core structure. One example of when the inertia of operational processes negatively affects the exploratory unit is in the decision-making process for funding, as the rigid process employed by the executive board is described as restrictive for securing funding for more spontaneous innovation opportunities. While such challenges related to incompatibility in processes have not been prominent in Company B, the findings suggest other process-related challenges concerning a lack of processes facilitating the interaction between the structures, namely a lack of processes enabling the interaction from a legal perspective. The operational employee emphasizes the severity of the challenge, expressing how the lack of such processes may be especially demotivating for operational employees in engaging in such integrative collaborations. Thus underscoring the need to instate such facilitating processes for enabling collaboration, as a lack thereof imposes the risk of deprioritization of integrative efforts.

Moreover, in regards to the exploratory unit's leveraging of operational support functions in Company A, it further becomes apparent that one of the operational employees involved in this interaction has encountered challenges in reconciling differing work approaches between the exploratory unit and operational governance. This tension aligns well with the cognitive stress described to arise when structural separation is combined with tactical integration, and individuals must navigate between distinct 'thought worlds', ultimately potentially hindering the optimization of explorative activities (Dougherty, 1992). A similar challenge associated with the pressure on individual employees to integrate the conflicting roles linked to explorative and exploitative activities has been identified in Company C. The findings reveal that the governance structure for innovation projects conducted in the exploratory unit heavily relies upon the individual ability

of product owners within the operational structure to integrate diverse elements. This reliance on existing expertise may hinder the exploration of new areas residing outside of the company's current competencies, while also placing significant pressure on individuals to simultaneously pursue exploration and exploitation.

5.3.2 Deprioritization

Furthermore, the findings display that a prominent challenge existing across all cases is a tendency among key operational stakeholders to possess a short-term bias, ultimately leading to a deprioritization of the projects originating from the exploratory units. The tendency to overemphasize exploitation over exploration aligns well with what is described in ambidexterity theory as consistent with well-managed established firms, which results in them succeeding with exploiting current business but failing at exploring future opportunities (March, 1991; Tushman & O'Reilley, 1996; O'Connor & Ayers, 2005; Uotila et al., 2009; Chen, 2017). As explained by March (1991), the paradoxical relationship of exploration and exploitation ultimately leads firms, and individuals, to overemphasize one over the other, and the uncertain, distant, and often negative results associated with explorative opportunities encourage them to choose exploitation.

The short-term bias, for example, manifests itself in Company A's case as a lack of resources for the exploratory unit. One interviewee explains how the prioritization of projects originating from the core business results in a reduced knowledge exchange with operational members who experience insufficient time to accommodate both and therefore choose to invest their time in operational activities. A similar lack of resources among operational personnel, leading to a deprioritization of explorative projects, has been identified within the case of Company B and C as well, where the findings also suggest an existing tendency of operational members to deprioritize the projects based on uncertainty. For instance, the operational interviewee from Company C notably underscores the importance of connecting the projects to customer value, thereby indicating that more uncertain projects, that lack clear market applications, may be deprioritized. The findings thus align with what is presented in March (1991) surrounding operational members' orientation to disfavor uncertain projects. Data from both companies further present possible ways to mitigate the experienced short-term bias. Results from Company B indicate that a greater understanding among operational employees about the possibilities, benefits, and synergies available could induce a greater willingness to collaborate and devote resources to the explorative projects. Findings from Company C instead suggest that accessibility to sufficient capabilities surrounding the new technologies could mitigate the deprioritization, as this could instill a sense of security among the operational personnel and thereby reduce the perceived uncertainty of explorative ventures.

Moreover, findings from the exploratory unit at Company C suggest a perceived disbelief in the product owner's assigned role of managing both current and future advancements within their product area. As presented in the results, respondents from the exploratory unit believe that the conflicting logic of the two will encourage them to prioritize one over the other and that the distant nature of explorative returns will result in the choice being current activities. The experienced

disbelief is supported by what is described in March (1991), as the author notes that difficulties in pursuing both exploitation and exploration exist at several levels within the organization, with one being the individual's inability to balance the conflicting demands of the paradoxical logics. As previously noted, the uncertain and distant nature of returns from explorative projects encourages the individual to pursue exploitative activities over explorative ones (March, 1991). The author further explains how positive feedback loops lead the individual's choice to engage in exploitation to become self-reinforcing, potentially further enforcing the disregard of radical projects. The choice of Company C to encompass the responsibility of both current and future advancements within the same role, could therefore potentially restrict the radicality of ventures and the company's overall ambidextrous capabilities. Consequently, the company's long-term performance could be affected, as March (1991) describes these ongoing adaptive processes as possibly self-destructing due to the essentiality of maintaining explorative activities for sustained success.

However, as described in Rogan and Mors (2014), individuals have been observed to display varying levels of individual ambidexterity. If the product owners are to maintain the duality of their mission it might therefore be important to appoint individuals with the cognitive predispositions described by Tempelaar and Rosenkranz (2019) as typical for individuals with ambidextrous qualities. These individuals, according to the authors, tend to demonstrate broader thinking patterns and the ability to both transition back and forth effortlessly between role identities, as well as merge insights from various knowledge sources within the same task. While there seem to exist ways of enhancing the individual's ambidextrous ability, according to Floyd and Lane (2000), through means such as exposure to varying roles with diverging cognitive frames, the result of such actions is ultimately dependent on the individual's ability to integrate and separate the perspectives to tailor to diverse situations. Thereby suggesting that it might be difficult to reprogram a person who exhibits an inclination towards clear and defined roles.

Furthermore, all case companies notably stress the significant role senior management support has had in facilitating the integration. For example, findings from Company A indicate that the support has mitigated possible challenges such as securing access to funding for explorative projects. Similarly, data from Company D reveal the substantial impact of top-management support as an interviewee suggests that it would have been hard to execute the activities within the exploratory unit without the legitimation provided by this support. Further, the data reveal that the exploratory unit at Company C has chosen their current main exploration area partially based on displayed interest from their CTO. The resulting legitimation is further described to facilitate recruitment and knowledge exchange from the operational parts of the business. This perceived facilitating role of senior management support resonates with what is presented in Kelley et al. (2005). The authors similarly highlight the support and involvement of senior management as essential for counteracting deprioritization by legitimizing the explorative activities and their integration into operational parts. It is further, partially supported by Gilley et al. (2002), who advocates for its critical role in enhancing organizational engagement and performance of radical innovation efforts. The collective insight derived from the findings thus reinforces what is presented by

the authors, suggesting senior management support to have a facilitating role in mitigating the challenges associated with the deprioritization of projects originating from the exploratory unit.

5.3.3 Lack of Clarity

Moreover, interview data from two of the case companies suggest that a lack of clarity surrounding the transition process, and the mission of the exploratory unit with relation to the operational units, may create challenges for the integration of projects originating from the exploratory unit.

This is exemplified by the findings from Company D, where the lack of clarity surrounding governance and ownership of the transitioning explorative startup project is suggested to have complicated and significantly slowed down the pace of the transfer. An aspect proposed as especially detrimental in the case of startup collaborations due to the startups' inclination to move fast. Moreover, the lack of clarity is further suggested to have contributed to a deprioritization of the project during integration. To mitigate the experienced short-term bias resulting from this, one respondent proposes the instatement of clear top-down procedures and governance structures for integrating explorative projects into the operational units. The findings related to the perceived lack of clarity, and the resulting deprioritization, align with what is described by Kelley et al. (2005). The authors likewise underscore the significance of clear, unified governance across differentiated activities and explain how the absence of a distinct corporate-level strategy for the integration of radical innovation often leads the receiving business unit responsible for the commercialization to neglect these. Company D might therefore benefit from instating more clearly defined responsibilities for the innovation activities across various levels of the company, as recommended by Kelley et al. (2005).

Findings from Company C, surrounding the same subject, partially align with what is presented above, but two respondents also express a more general challenge originating from a perceived lack of clarity in their mission in relation to the operational units. This seems to mainly be linked to where they should receive their funding from, the management structure or the concerned product owner, and ultimately for what purpose they are innovating for. Consequently, different types of integrations will need to take place in the two separate cases and both seem to entail a perceived fear of deprioritization. Hence, similar to the case presented above, it might be beneficial to instate a clear and unified corporate-level governance strategy for the transition of explorative projects, in line with what is recommended by Kelley et al. (2005).

Conclusively, the paradoxical logics of exploration and exploitation requires the units pursuing them to acquire distinct internal alignments (O'Reilley & Tushman, 2008), where exploration is associated with experimentation and variation, and exploitation with refinement and operational efficiency (March, 1991), requiring the instatement of clear rules and routines (Baum et al., 2000). The integration, thus, ultimately involves the transitioning of a project which has been nurtured in an experimental and flexible environment into a rule-based structure, and the findings, perhaps not surprisingly, suggest that a successful transition between the two requires the instatement of

clearly defined processes and governance structures.

5.4 Concluding Discussion

To succeed with a predominantly structural approach for achieving organizational-level ambidexterity, as employed by all examined cases, scholars of ambidexterity highlight the necessity for organizations to employ a certain degree of integration between the structurally separated exploratory unit and the core structure (O'Reilly and Tushman, 2008; Raisch et al., 2009; Chen, 2017; Gibson & Birkinshaw, 2004; Andriopoulos & Lewis, 2009). Various types of mechanisms for linking the structures and achieving synergetic and transfer-enabling effects have been described in literature (e.g., Hansen et al., 2019; Jansen et al., 2009; Gassman et al., 2012; Chen & Kannan-Narasimhan, 2015), the majority of which have been identified in at least one of the organizations examined. The findings reveal that all companies have employed a variety of formal and informal integration mechanisms for various integrative purposes, which in line with what is described in literature have been instated to facilitate the transition and achieve diverse synergistic effects. However, despite the potential benefits of cross-fertilization, Hansen et al. (2019) argue that the employment of such integration mechanisms always carries the risk of cross-contamination, consequently diminishing the radicality of the explorative activities.

For instance, early involvement of the core business in decision-making regarding explorative projects, as identified in Company C and D, is suggested to have facilitated the integration of explorative activities. Similarly, the data suggest that varying early involvement efforts aimed at fostering a sense of ownership and participation yield similar benefits. However, as previously discussed in Chapter 5.1.3, early involvement may, according to Chen and Kannan-Narasimhan (2015), reduce the degree of radicality of explorative ventures as operational employees may favor the pursuit of projects that are more aligned with current businesses. The concerns presented in the chapter may constitute indications of the presence of such cross-contaminating effects.

Further, the employment of resource-linking mechanisms prior to the transfer of radical innovation, identified in all cases studied, may enable ambidextrous organizations to obtain synergies through the sharing and reallocation of resources to where they are most needed (Jansen et al., 2009), but also carry the risk of cross-contaminating effects. While the findings suggest positive synergistic outcomes akin to those described in literature, Hansen et al. (2019) argue that the employment of such resource-linking mechanisms increases the risk of contaminating explorative activities with the exploitative culture and knowledge oriented toward the current organizational trajectory.

The employment of the mechanisms *"innovation showcasing"* and *"external validating"*, identified across all cases in various forms, may reduce skepticism and enhance the operational structures' willingness to engage in the transfer of radical innovation (Gassman et al., 2012), but entails the risk of generating expectations among individuals within the operational structures that may impose an inhibiting effect on the experimental nature of exploratory efforts (Hansen et

al., 2019).

Moreover, the findings suggest that the existence of dense personal networks, specifically those formed during prior employment in operational units, facilitates the integration of explorative projects by enabling access to, and identification of, adequate competence, as well as by enhancing awareness-spreading of explorative activities. However, according to Simon and Tellier (2011), the actors present within the network may simultaneously affect the direction of the ventures in a way that reframes explorative projects into more exploitative ones. The apparent prevalence of operational personnel within the personal networks of the explorative employees, present in all examined cases, may therefore influence the development path of the explorative projects closer to the company's current business and areas of expertise.

While these instances serve as examples of the trade-offs described as inherent to the utilization of specific types of linkages between exploration and exploitation in practice, Hansen et al. (2019) describe that all types of integrative efforts between these structures entail similar tensions between cross-fertilization and cross-contamination. Although, as previously mentioned, the findings from this study have at most been able to discern potential indications of adverse effects resulting from the companies' employment of these integration mechanisms, the presence, and if so, the cause behind such cross-contaminating effects has not been conclusively determined within the scope of this study.

6 Managerial Implications and Conclusions

The following chapter will present managerial implications derived from the findings and subsequent discussions, as well as provide conclusions drawn from the study.

6.1 Managerial Implications

Based on the results of the study, certain implications for managers seeking to manage the balance between separation and integration of structurally separated units for exploration can be derived. Firstly, the integration mechanisms resource linking and acceptance building have been identified as significant across all case companies, both for enacting synergies between the exploratory unit and the core structures and for facilitating the eventual transfer of radical innovation. The study indicates a possible linkage between the two, as it has emerged that, for example, the employment of resource linking has been used not only to facilitate knowledge flow but also to build operational acceptance towards the exploratory unit. Therefore, it could be beneficial for managers establishing such resource-linking mechanisms, like job rotations, to not only consider competence when selecting operational employees to partake but also to employ a more strategic approach by selecting potential future innovation champions that will exert direct influence on their operational colleagues' acceptance. Selecting the *"right"* individuals is then crucial - those who, in addition to adequate expertise, possess the right characteristics, such as energy, devotion, and an ability to influence others. It may further be advantageous to consider their location within the organization, as early engagement of individuals strategically positioned in areas likely to be significantly impacted by future high-potential emerging technologies may allow them to prepare other employees within their area for radical innovations, facilitating the potential future transfer of these innovations.

Further, it appears that the exploratory units examined which lack a designated budget also demonstrate early involvement of operational employees with influence and decision-making authority regarding explorative projects. Both Company C and D, which receive the majority of their funding through core business activities, exhibit a higher level of involvement of operational employees at an early stage and, overall, appear to demonstrate a lower degree of autonomy. This suggests that managers should not consider and organize these mechanisms - *Source of Funding* and *Operational Influence* - in isolation, but rather establish them simultaneously. Due to this potential relation, managers should also consider more generally whether it is appropriate not to allocate a designated budget for the exploratory unit, as literature describes that early involvement of operational personnel may reduce the radicality of explorative efforts.

A prominent integration mechanism that appears to have an impact on several different mechanisms is networks. Networks have, for example, emerged as central in relation to resource linking, supporting the location and access of knowledge, and acceptance building, aiding in the dissemination of internal awareness about the exploratory unit and its activities. The importance of personal networks is further reinforced by the significance of key stakeholders' personal characteristics for the success of individual integrative efforts, as discussed in Chapter 5.2.2, since

personal relationships may aid in identifying these individuals. Managers may therefore benefit from prioritizing, encouraging, and creating opportunities for the creation of personal ties between exploratory and operational employees. The integral role of networks also has implications for the staffing of exploratory units. While transferring personnel from core structures may pose risks of cross-contamination from the exploitative culture, the significance of pre-established networks, discussed in Chapter 5.2.1, illustrates potential advantages of allocating a mix of newly hired personnel, offering new reference frames, and established operational employees, enabling the leveraging of these networks, in exploratory units.

As there seems to exist relationships between several of the identified integration mechanisms, managers organizing the exploration-exploitation interface with the aspiration of balancing separation and integration to optimize cross-fertilization while mitigating cross-contamination, may benefit from not addressing each in isolation. Rather, employing a more holistic approach to organizing and managing these integration mechanisms might be advantageous, wherein they are examined simultaneously and consideration is taken towards the collective effect of the varying mechanisms.

Lastly, deprioritization of projects originating from exploratory units has emerged as a prominent challenge through the study and the findings further demonstrate that the two remaining challenges may result in the former. A lack of processes facilitating the interaction of the exploratory and operational units may cause frustration and discourage operational employees with high workloads from prioritizing the allocation of time to explorative projects, and a lack of clarity in directives and governance structures for integration of explorative projects may lead operational employees to instead prioritize exploitative projects associated with more certain, and initially higher, returns. This potential connection underscores a possible advantage for managers aiming to tackle issues related to deprioritization of radical innovation projects to also direct efforts towards establishing processes that facilitate interactions, as well as ensuring clarity regarding aspects such as how the integration process is to proceed, who is responsible, and when this responsibility is transferred.

6.2 Conclusions

This study has been conducted with the purpose of exploring how innovative, established firms with explicit ambidextrous ambitions organize the integration of structurally separated units for exploration with the operational structures of the organizations, as well as uncovering major challenges experienced in relation to this integration. To fulfill this purpose, a multiple case study has been conducted involving four firms across a variety of industries. Interviews were conducted with key stakeholders within the integration to address the main research questions of the study: *"How can innovative, established companies with ambidextrous ambitions organize and manage the integration of structurally separated units for explorative innovation with the core operational business?"* and *"What major challenges do these companies encounter in balancing separation and integration?"* Prominent ambidexterity scholars have long emphasized the importance of interface management to succeed with the simultaneous pursuit of exploration and exploitation through structurally separated units (O'Reilly & Tushman, 2008; Van Looy et al., 2005), and recent research has sought to identify mechanisms that may be employed at various organizational levels to enable this pursuit (Jansen et al., 2009; Gassman et al., 2012; Chen & Kannan-Narasimhan., 2015; Hansen et al., 2019). However, extensive research on how firms practically employ such mechanisms to achieve their ambidextrous aspirations is lacking. Thus, in addressing these research questions, the study seeks to contribute insights into how innovative, established companies actually manage the balance of separation and integration of explorative and exploitative innovation processes in practice.

The study has revealed that all companies, having already opted for a certain degree of separation through the structural differentiation of their explorative innovation unit, employ various formal and informal integration mechanisms. As to the formal mechanisms employed, involving pre-established interfaces and measures, all of the companies examined utilize different forms of resource-linking, primarily during the pre-transfer phase of radical innovation. For instance, the majority of the cases employ job rotations between the explorative and operational structures with the aim of fostering a synergistic, bidirectional flow of knowledge and/or strategically positioning ambidextrous mindsets within the operational business to facilitate future transfers of radical innovation.

The examined cases all further utilize various formal means for building acceptance among the operational structure towards the exploratory unit, increasing the former's willingness to engage in explorative activities as well as preparing it for future transfers of radical innovation. In all cases, the exploratory unit actively works to demonstrate the outcomes of the activities conducted within the unit, and to disseminate internal awareness within the core organization. For example, all exploratory units examined engage in various forms of meetings or town hall sessions with the operational organization, where results or progress of specific initiatives are presented and general information about explorative activities is disseminated to operational employees. The majority of the companies also organize or participate in events, such as open houses or hosting booths at company-wide events, providing opportunities for personalized interactions. Further, in most of the studied companies, external means, such as market indicators or external expertise in specific

areas, are leveraged to build legitimacy or acceptance towards individual explorative projects.

The study has further demonstrated that while all examined companies employ various formal mechanisms to exert operational influence on aspects of the explorative projects, such as decision-making, resource allocation, and ownership, the extent of that influence varies distinctly between the cases. Notably, one of the exploratory units experiences greater autonomy in regard to project governance and funding, where specifically the direct allocation of a designated budget appears as significant to their experienced freedom in innovation activity. In contrast, two of the companies' exploratory units are significantly more reliant on their respective executive boards in these aspects. Furthermore, the findings, consistent with previous literature, underscore the beneficial role of early involvement of operational employees in facilitating the integration of explorative projects into the core business. In relation to this, the study reveals how most companies actively try to utilize early involvement of operational personnel to foster a more informal sense of ownership and participation in explorative projects, an aspect suggested to greatly facilitate the transition of projects originating from the exploratory unit. In regards to the official ownership of the explorative projects, the majority of the examined companies seem to exercise a transitioning model where the ownership initially resides within the exploratory unit to then gradually pass over towards the operational structure once the project has reached some sort of pre-established degree of sufficient maturity.

Besides these formal mechanisms, the findings from the study show that all examined companies also employ informal integration mechanisms, involving emergent social practices instead of pre-established measures. One such informal mechanism that has been demonstrated, across all cases, to facilitate the integration of explorative activities within the core structures in various ways is networks. Personal networks are, for instance, utilized both for identifying and accessing adequate knowledge in all examined exploratory units, as well as for disseminating internal awareness about their respective activities. Findings from two of the companies further specifically underscore pre-established networks as a significant facilitator for the above-mentioned utilizations of networks. The same companies highlight the role of physical proximity in enhancing opportunities for networking by enabling the creation of personal ties to operational employees.

In addition to these mechanisms residing at higher organizational levels, the enabling role of individuals' ambidextrous abilities has emerged as a significant informal integration mechanism in half of the companies. In collaborations between the exploratory and core structures, these companies highlight the importance of selecting open, enthusiastic, and/or curious individuals in enabling the success of the interactions, emphasizing their crucial integrative role both during pre-transfer interactions and in enabling future transfers of radical innovations by acting as innovation champions.

Moreover, three prominent challenges identified in at least two of the cases examined related to the integration of the explorative innovation unit and the core structures have been identified. The first challenge observed across the majority of the studied companies concerns an incompatibility

between the explorative activities and the governance and processes within the operational structure, or the absence of processes facilitating interaction. This incompatibility or lack of processes has had an inhibiting impact on the effectiveness of the explorative activities in the interactions with the operational unit. The second challenge, identified across all cases, relates to a prevailing short-term bias among operational personnel, which is suggested to result in a deprioritization of explorative activities, both throughout the development and transfer of projects originating from the exploratory unit. The experienced deprioritization is suggested by the findings to be manifested by a lack of devoted resources, such as time, allocated to the exploratory units' activities. Closely related to the first challenge of incompatibility, the third and final challenge, identified in half of the cases, concerns a lack of clarity, primarily regarding the integration process of innovation originating from the exploratory unit, where a lack of clarity regarding ownership and governance during the process is demonstrated to contribute to the second challenge of deprioritization.

Through the case companies' employment of various formal and informal integration mechanisms, the study has demonstrated the complementing function of integration to structural separation, both for enacting synergies and through its various ways to prepare the innovation and the operational structure for its eventual transfer. However, as described in theory, all integrative efforts bear the risk of cross-contamination. Thus, it is imperative for managers to carefully select, organize, and manage the integration mechanisms between structurally separated units for exploration and the core structures in such a way that allows for cross-fertilization while mitigating the risks of cross-contamination. While this study has explored how companies can employ various integration mechanisms to facilitate the development and transition of explorative innovation, as well as enacting synergies between the differentiated units, future research should examine the correlating relationship between the employment of these mechanisms and eventual cross-contamination restricting the radicality of explorative activities. Further, the findings of this study have indicated potential relations between some of the identified integration mechanisms. A potential avenue for future research could be to investigate the existence of such relations, and to establish the direction and strength of the eventual connections, to further support managers in adopting a more holistic approach to organizing and optimizing the exploration-exploitation interface.

References

Achilladelis, B., Jervis, P., & Robertson, A. (1971). *A Study of Success and Failure in Industrial Innovation: Report on Project SAPPHO to SRC*. University of Sussex.

Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization Science, 20*(4), 696-717.

Arend, R. J., & Chen, Y. (2012). Entrepreneurship as dynamic, complex, disequilibrious: A focus that benefits strategic organization. *Strategic Organization, 10*(1), 85-95.

Atuahene-Gima, K. (2005). Resolving the capability–rigidity paradox in new product innovation. *Journal of Marketing, 69*(4), 61-83.

Azungah, T. (2018). Qualitative research: deductive and inductive approaches to data analysis. *Qualitative Research Journal, 18*(4), 383-400.

Bacharach, S. B. (1989). Organizational theories: Some criteria for evaluation. *Academy of Management Review, 14*(4), 496-515.

Baltar, F., & Brunet, I. (2012). Social research 2.0: virtual snowball sampling method using Facebook. *Internet Research, 22*(1), 57-74.

Baum, J. A., Li, S. X., & Usher, J. M. (2000). Making the next move: How experiential and vicarious learning shape the locations of chains' acquisitions. *Administrative Science Quarterly, 45*(4), 766-801.

Bell, E., Bryman, A., & Harley, B. (2022). *Business Research Methods*. Oxford University Press.

Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review, 28*(2), 238-256.

Besharov, M. L., & Smith, W. K. (2014). Multiple institutional logics in organizations: Explaining their varied nature and implications. *Academy of Management Review, 39*(3), 364-381.

Bierly III, P. E., & Daly, P. S. (2007). Alternative knowledge strategies, competitive environment, and organizational performance in small manufacturing firms. *Entrepreneurship Theory and Practice, 31*(4), 493-516.

Birkinshaw, J., & Gupta, K. (2013). Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives, 27*(4), 287-298.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Burke, P. J., & Reitzes, D. C. (1981). The link between identity and role performance. *Social Psychology Quarterly, 44*(2), 83-92.

Capron, L., & Mitchell, W. (2009). Selection capability: How capability gaps and internal social frictions affect internal and external strategic renewal. *Organization Science, 20*(2), 294-312.

Chen, R. R., & Kannan-Narasimhan, R. P. (2015). Formal integration archetypes in ambidextrous organizations. *RD Management, 45*(3), 267-286.

Chen, Y. (2017). Dynamic ambidexterity: How innovators manage exploration and exploitation. *Business Horizons, 60*(3), 385–394.

Chesbrough, H. (2006). Open innovation: A new paradigm for understanding industrial innovation. *Open Innovation: Researching a New Paradigm, 1-19*.

Christensen, C. M. (1998). *The Innovator's Dilemma*. Harvard Business School Press.

Cooper, G. (1990). Cognitive load theory as an aid for instructional design. *Australasian Journal of Educational Technology, 6*(2).

Cooper, R., Edgett, S., & Kleinschmidt, E. (2001). Portfolio management for new product development: results of an industry practices study. *R&D Management, 31*(4), 361-380.

Cubero, J. N., Gbadegeshin, S. A., & Consolación, C. (2021). Commercialization of disruptive innovations: Literature review and proposal for a process framework. *International Journal of Innovation Studies, 5*(3), 127-144.

Dannels, S. A. (2018). Research design. In *The Reviewer's Guide to Quantitative Methods in the Social Sciences* (pp. 402-416). Routledge.

Durisin, B., & Todorova, G. (2012). A study of the performativity of the "ambidextrous organizations" theory: Neither lost in nor lost before translation. *Journal of Product Innovation Management, 29*, 53-75.

Fang, C., Lee, J., & Schilling, M. A. (2010). Balancing exploration and exploitation through structural design: The isolation of subgroups and organizational learning. *Organization Science, 21*(3), 625-642.

Floyd, S. W., & Lane, P. J. (2000). Strategizing throughout the organization: Managing role conflict in strategic renewal. *Academy of Management Review, 25*(1), 154-177.

Gassmann, O., & Enkel, E. (2004). Towards a theory of open innovation: Three core process archetypes. *Proceedings of the R&D Management Conference, Lisbon, Portugal, July 6–9*.

Gassmann, O., Widenmayer, B., & Zeschky, M. (2012). Implementing radical innovation in the business: The role of transition modes in large firms. *R&D Management, 42*(2), 120-132.

Ghoshal, S., Korine, H., & Szulanski, G. (1994). Interunit communication in multinational corporations. *Management Science, 40*(1), 96-110.

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal, 47*(2), 209–226.

Gilley, M., Walters, B., & Olson, B. (2002). Top management team risk taking propensities and firm performance: Direct and moderating effects. *Journal of Business Strategies, 19*(2), 95-114.

Good, D., & Michel, E. J. (2013). Individual ambidexterity: Exploring and exploiting in dynamic contexts. *The Journal of Psychology, 147*(5), 435-453.

Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal, 49*(4), 693-706.

Gustafsson, J. (2017). Single case studies vs. multiple case studies: A comparative study.

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human reproduction, 31*(3), 498-501.

Hansen, E. G., Wicki, S., & Schaltegger, S. (2019). Structural ambidexterity, transition processes, and integration trade-offs: a longitudinal study of failed exploration. *R&D Management, 49*(4), 484-508.

Hansen, M. T. (2002). Knowledge networks: Explaining effective knowledge sharing in multiunit companies. *Organization science, 13*(3), 232-248.

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization science, 15*(4), 481-494.

Howell, J. M., & Higgins, C. A. (1990). Champions of technological innovation. *Administrative science quarterly*, 317-341.

Jansen, J. J., Tempelaar, M. P., Van den Bosch, F. A., & Volberda, H. W. (2009). Structural differentiation and ambidexterity: The mediating role of integration mechanisms. *Organization science, 20*(4), 797-811.

Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management science, 52*(11), 1661-1674.

Jenssen, J. I., & Jørgensen, G. (2004). How do corporate champions promote innovations?. *International Journal of Innovation Management, 8*(01), 63-86.

Kauppila, O. P. (2010). Creating ambidexterity by integrating and balancing structurally separate interorganizational partnerships. *Strategic organization, 8*(4), 283-312.

Kelley, D., Neck, H. M., O'Connor, G. C., & Paulson, A. (2005). Corporate entrepreneurship through radical innovation: key organization and initiative level mechanisms. In *Corporate entrepreneurship and venturing* (pp. 23-48). Boston, MA: Springer US.

Lavie, D., Stettner, U., & Tushman, M. L. (2010). Exploration and exploitation within and across organizations. *Academy of Management annals, 4*(1), 109-155.

LeCompte, M. D., & Goetz, J. P. (1982). Problems of reliability and validity in ethnographic research. *Review of educational research, 52*(1), 31-60.

Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic management journal, 14*(S2), 95-112.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. *Journal of management, 32*(5), 646-672.

Luger, J., Raisch, S., & Schimmer, M. (2018). Dynamic balancing of exploration and exploitation: The contingent benefits of ambidexterity. *Organization Science, 29*(3), 449-470.

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization science, 2*(1), 71–87.

McKinsey & Company. (2023). The top trends in tech. Retrieved May 18, 2024, from https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-top-trends-in-technew-and-notable

Miles, R. E., Scaringella, L., & Truong, Y. (2017). Customers involvement and firm Absorptive Capacity in radical innovation: The case of technological spin-offs. *Technological Forecasting and Social Change, 120*, 144–162. Available at: https://doi.org/10.1016/j.techfore.2017.01.005

Mwita, K. (2022). Factors to consider when choosing data collection methods. *International Journal of Research in Business and Social Science (2147-4478), 11*(5), 532-538.

Nosella, A., Cantarello, S., & Filippini, R. (2012). The intellectual structure of organizational ambidexterity: A bibliographic investigation into the state of the art. *Strategic Organization, 10*(4), 450-465.

O'Connor, G. C., & Ayers, A. D. (2005). Building a radical innovation competency. *Research Technology Management, 48*(1), 23–31.

Ojha, D., Struckell, E., Acharya, C., & Patel, P. C. (2021). Managing environmental turbulence through innovation speed and operational flexibility in B2B service organizations. *Journal of Business & Industrial Marketing, 36*(9), 1627-1645.

Opoku, A., Ahmed, V., & Akotia, J. (2016). Choosing an appropriate research methodology and method. *Research methodology in the built environment: A selection of case studies, 1*, 30-43.

O'Reilly, C. A., & Tushman, M. L. (2004). The ambidextrous organization. *Harvard business review, 82*(4), 74-83.

O'Reilly III, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in organizational behavior, 28*, 185-206.

O'Reilly III, C. A., & Tushman, M. L. (2011). Organizational ambidexterity in action: How managers explore and exploit. *California management review, 53*(4), 5-22.

O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives, 27*(4), 324-338.

Papachroni, A., & Heracleous, L. (2020). Ambidexterity as practice: Individual ambidexterity through paradoxical practices. *The Journal of Applied Behavioral Science, 56*(2), 143-165.

Raisch, S., & Tushman, M. L. (2016). Growing new corporate businesses: From initiation to graduation. *Organization Science, 27*(5), 1237-1257.

Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization Science, 20*(4), 685–695.

Rogan, M., & Mors, M. L. (2014). A network perspective on individual-level ambidexterity in organizations. *Organization Science, 25*(6), 1860-1877.

Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field methods, 15*(1), 85-109.

Sandberg, B., & Aarikka-Stenroos, L. (2014). What makes it so difficult? A systematic review on barriers to radical innovation. *Industrial Marketing Management, 43*(8), 1293-1305.

Siggelkow, N., & Levinthal, D. A. (2003). Temporarily divide to conquer: Centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. *Organization science, 14*(6), 650-669.

Siggelkow, N., & Rivkin, J. W. (2005). Speed and search: Designing organizations for turbulence and complexity. *Organization science, 16*(2), 101-122.

Simon, F., & Tellier, A. (2011). Reconsidering ambidexterity at the individual level: a social network perspective. In *Project-based organizing and strategic management* (pp. 389-424). Emerald Group Publishing Limited.

Smith, W. K.,
Tushman, M. L. (2005). Managing strategic contradictions: A top management model for managing innovation streams. *Organization science, 16*(5), 522-536.

Sofaer, S. (1999). Qualitative methods: what are they and why use them?. *Health services research, 34*(5 Pt 2), 1101.

Taylor, A., & Helfat, C. E. (2009). Organizational linkages for surviving technological change: Complementary assets, middle management, and ambidexterity. *Organization Science, 20*(4), 718-739.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal, 28*(13), 1319-1350.

Tellis, G. J., Prabhu, J. C., & Chandy, R. K. (2009). Radical innovation across nations: The preeminence of corporate culture. *Journal of marketing, 73*(1), 3-23.

Tempelaar, M. P., & Rosenkranz, N. A. (2019). Switching hats: The effect of role transition on individual ambidexterity. *Journal of Management, 45*(4), 1517-1539.

Tushman, M., & Nadler, D. (1986). Organizing for innovation. *California management review, 28*(3), 74-92.

Tushman, M. L., & O'Reilly III, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California management review, 38*(4), 8-29.

Uotila, J., Maula, M., Keil, T., & Zahra, S. A. (2009). Exploration, exploitation, and financial performance: Analysis of S&P 500 corporations. *Strategic management journal, 30*(2), 221-231.

Van Looy, B., Martens, T., & Debackere, K. (2005). Organizing for continuous innovation: On the sustainability of ambidextrous organizations. *Creativity and innovation management, 14*(3), 208-221.

Wang, T., & Chen, Y. (2018). Capability stretching in product innovation. *Journal of management, 44*(2), 784-810.

Yin, R. K. (2009). *Case study research: Design and methods*

Appendices

Appendix A

Table A.1: Interview guide used as a basis for interviews with members of the exploratory unit.

INTERVIEW GUIDE - EMPLOYEE EXPLORATORY UNIT
FUNCTIONING & STRUCTURE
What is your role at [the company]? Could you tell us about [the explorative unit] - what is your purpose in relation to [the core company]? What distinguishes the work done in [the exploratory unit] from that in [other innovation unit] - and what is the relationship there? In what ways are you separated from the rest of [the core organization]? Why is it set up this way? How does [the exploratory unit] differ from the more operational/core units at [the company]? (processes, culture, strategies, objectives)
RADICAL INNOVATION TRANSITION PROCESS
Can you describe the journey from developing a radical idea to its commercialization? Can you describe a concrete example of a project that has taken this path? Is the process the same for all projects? How do you source ideas? How developed are the ideas when you take them in? How are projects initiated? Who decides to start a project and take it further? Who owns the projects? Who decides if a project is to be terminated? What factors determines whether a project continues or not? Do you involve people from operational units in decision-making regarding exploratory projects in any way? *If so:* How do you do it? Why? Potential associated risks/problems?
INTEGRATION MECHANISMS & CHALLENGES
Do you at [the exploratory unit] interact with the [operational units] or are they kept completely separate? **Pre-Transfer** Is there any kind of knowledge or capacity exchange between these two units? *If yes:* Why do you do it? Does it have the effect you want it to have? Connected challenges? Do you use any *"liaison personnel"* between the different units? *If yes:* Why? Does it have the effect you want it to have? Do you experience any problems with it?

Do you use job rotation between the radical units and core units?
If yes: Why do you do it? Does it have the effect you want it to have? Do you experience any problems with it?
Do you work in any way to create acceptance and build knowledge about the more radical projects within [the core organization]?
If yes: How?
Do you use, for example, customers to demonstrate that there is market interest/demand?
Do you engage in early collaboration with external partners to secure and demonstrate access to the right skills?
Do you use illustrations/prototypes of future radical products to spread information about it throughout the company?
If yes: Why do you do it? Does it have the effect you want it to have? Do you experience any problems with it?

During Transfer

When do you hand over the radical project to the operational part?
What does this look like?
When is a project considered "mature" or ready for transfer? Who decides this?
How do you think this works?

Post-Transfer

When a radical innovation is handed over to the operational structure - is it pushed into existing units and adapted to existing structures, or is a new unit created within the existing structure?
Do you have an example of an innovation that has been handed over to the operational side but has not gone as you wanted?
If yes: Why didn't it? What was the challenge?

GENERAL

Do you actively work to build social networks to create personal connections between people in the exploratory and operational units?
If yes: What level? Purpose? What effects have you seen from it?
Do you work in other ways to get people from the operational parts to feel involved in what is happening in the radical units?
What works well in terms of how you work with radical innovation at [the core organization]?
What do you see as the biggest challenges in conducting radical/explorative innovation at [the core organization]?
What do you think works well with the transition process of radical innovation from you into the operational parts of [the core organization]?
What do you think are the biggest challenges?
What do you see as the biggest challenges related to implementing radical innovation at [the core organization]?
Has anything changed in how you work with this transition process?
If yes: why did you do that, and what effect has it had?

Table A.2: Interview guide used as a basis for interviews with employees from the operational structure.

INTERVIEW GUIDE - EMPLOYEE OPERATIONAL UNIT
FUNCTIONING & STRUCTURE
Can you tell us a bit about your unit and what you do there? What is your relationship to [the explorative unit]? What is your perception of [the explorative unit]? How do you experience [the explorative unit]? What is your perception of how they work and what is done there? What value do you see coming out of [the explorative unit]? What is the general perception of [the explorative unit] and what they do/value here in the operational units of [the core company]? Why do you think that is? Do you feel there is widespread support for [the explorative unit] in the operational parts of [the core company]?
RADICAL INNOVATION TRANSITION PROCESS
What is your influence on what happens in [the explorative unit]? Do you feel involved in what happens there? Who initiates the projects that take place in [the explorative unit]? Who decides to start a project? Takes it forward? Do you have any influence in decision-making regarding the explorative projects in any way? *If yes:* In what way are you involved? Why are you involved? Do you see any risks/problems with that? Do you have influence on decision-making regarding project termination? *If yes:* What determines whether a project should continue or not? Do you feel any ownership over the projects that take place in [the explorative unit]? Are you held accountable in any way for the value that [the explorative unit] generates? Do you feel that what happens in [the explorative unit] aligns with how [the core company's] reality looks?
INTEGRATION MECHANISMS & CHALLENGES
Does [the core company] interact in any way with [the explorative unit] or are you kept completely separate? How involved are you in what happens at [the explorative unit]? **Before the actual handover:** If we go a bit more specifically into where in the process these integration points are - is there any interaction between [the core company] or the rest of [the company] and [the explorative unit] before they hand over the actual project? How have you taken advantage of the knowledge/competence generated by [the explorative unit]'s work? *If yes:* How? Why do you do it? Does it have the effect you want it to have? Do you experience any problems with it?

Do you use any *"liaison-personnel"*, i.e., personnel between you and [the explorative unit]? *If yes:* Why? Does it have the effect you want it to have? Do you experience any problems with it? Do you use job rotation between [the core company] and [the explorative unit]? *If yes:* Why? Does it have the effect you want it to have? Do you feel that [the explorative unit] works in any way to get you in the more "operational" parts of [the core company] to take part in what they are doing? *If yes:* What effect has it had? How could it be improved? **During Transfer:** If we instead look during the actual handover: When is it intended that a radical project should leave [the explorative unit] to become part of the core business? What is this handover intended to look like? When is a project considered "mature" or ready for transfer? Who decides that? What is your influence on this? How do you think this works? **Post-Transfer** When a radical innovation is handed over to the operational structure - is it then intended to be pushed into existing units and adapted to existing structures, or is a new unit created within the existing structure? Do you have an example of an innovation that has been handed over to the operational side but has not gone as you wanted? *If yes:* Why did it not go as planned?
GENERAL
What are the social relations like between people working in [the core company] and [the explorative unit]? How are they established? Do you actively work to build social networks to create social connections between people in the explorative and operational activities? *If yes:* At what level? How? What is the purpose? What effects have you seen from it? Do you feel that people from [the core company] feel involved in what happens in [the exploratory unit] or feel a connection to it? What works well in how you work with radical innovation at [the core company]? What do you see as the biggest challenges in conducting radical/explorative innovation at [the core company]? What do you feel works well with the transition process of radical innovation from the interaction between [the exploratory unit] and the operational parts of [the company]? What do you see as the biggest challenges in the transition of radical innovation from the interaction between [the exploratory unit] and the operational parts of [the core company]? What do you see as the biggest challenges related to implementing radical innovation at [the core company]? Has anything changed in how you work with this transition process and how the interaction looks between [the exploratory unit] and [the core company]? *If yes:* Why did you make this change? What effect has it had?

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF ENTREPRENEURSHIP AND STRATEGY
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden
www.chalmers.se

CHALMERS
UNIVERSITY OF TECHNOLOGY