Organizational Ambidexterity as a Vehicle for Sustainability Innovation

An exploratory case study

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Preface

This master's thesis constitutes the independent work in our masters' degrees in Business Analysis and Performance Management at Norwegian School of Economics (NHH).

The thesis is one of several case studies conducted as part of the research program *RaCE: Radical Technology-driven Change in Established firms,* a collaboration between NHH and Samfunns- og næringslivsforskning – Centre for applied research at NHH (SNF).

First, we would like to thank our supervisor, Professor Inger G. Stensaker, for her help and guidance through this process. Her constructive feedback and encouragement have been essential to the completion of this thesis.

We would also like to thank the participants from the case organization for taking time out of their busy schedules to provide the data for the thesis.

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1.   Introduction

The world is facing major challenges, which dictates an imminent need to find new, more sustainable solutions to how both businesses and individuals lead their lives (Jørgensen & Pedersen, 2018). The pressing time-aspect of UN's Sustainable Development Goals dictate that society has less than a decade left to solve these challenges if we are to reverse the damages inflicted on the environment by human activity. To succeed even remotely, there is need for some serious innovation. However, innovation can be demanding in resources and is often considered risky, creating inertia in many organizations (Jørgensen & Pedersen, 2018). Researchers eagerly promote business model innovation as a solution (Jørgensen & Pedersen, 2018). While this may be a good means to drive radical innovation and disrupt markets, it is not always practically possible, particularly for established firms.

Society cannot entirely rely on entrepreneurs to find the solutions, there is also need for established firms to generate radical innovation. The traditional literature on sustainable business models focuses on creating business models that fundamentally change the business logic, resulting in one way or another slowing, narrowing and closing resource loops (Jørgensen & Pedersen, 2018; Bocken, de Pauw, Bakker, & van der Grinten, 2016). In many industries, however, it is not practically possible to radically the change the business logic as of yet. Additionally, some of the narrative around the sustainability agenda makes it appear as though an "all-or-nothing"-approach is the only acceptable solution. In some industries, however, there is a long way to go before we can remotely talk about concepts such as net-zero carbon and zero waste. The task thus becomes overwhelming and/or unprofitable, which ultimately results in complete inertia.

The link between sustainability and innovation seems to be clear. Nevertheless, there is little emphasis in the literature on sustainable business models on how established organizations can achieve capacity for innovation to promote the sustainability agenda, while still remain profitable. Organizational ambidexterity is one solution to how organizations can achieve innovation capacity. While being a well-known solution to the dilemma established firms often face of balancing optimization and innovation efforts, it is typically associated with digital technology innovation, prompted by the ambition to retain market share and remain profitable. However, the core principle of the ambidextrous solution is that it contributes to securing long-

term competitiveness through *parallelly engaging in evolutionary and revolutionary innovation* (O'Reilly & Tushman, 2013). The desire to drive innovation for sustainability should not exclusively demand drastically new business models. Nor should the rationale for applying the ambidextrous solution primarily have to be myopic in terms of a singular focus on the profitability and competitiveness of the firm in question. As such, the ambidextrous solution could prove to be an appropriate method for established firms to promote sustainability innovation without drastically changing their business logic and compromising profitability in the short term. Rather, it can allow space for exploring and developing new solutions without disturbing core operations, and gradually implementing radical innovation at the rate that it is proven successful.

Succeeding with the ambidextrous solution is, however, not straight-forward. Although it may well be a criterion to determine the degree to which one has succeeded with the solution, collaboration between units often proves troublesome. Yet, existing literature focuses mainly on separation of units as a necessary step to achieve strategic renewal. Examining the need for collaboration has thus not been a focus area in the literature within organizational ambidexterity, and it remains debated how the units can develop and maintain a successful collaboration. Another aspect of organizational ambidexterity to which the literature pays little attention, is the temporal perspective related to how innovation capacity, and the collaboration between the units, can be upheld as the innovation unit develops over time.

Existing literature presents reintegration as vital to reap the full benefits of the ambidextrous solution. However, there is little empirical research that supports this proposition. As such, there is a gap within the literature regarding how ambidextrous organizations can maintain their innovation capacity as the units mature over time. Additionally, there is not an extensive focus on how or whether organizational ambidexterity can be a means to drive the sustainability agenda. Consequently, the knowledge on how to apply the ambidextrous solution in this context is limited. This thesis thus seeks to contribute to the literature by addressing and connecting these perspectives when answering the research question:

"How can established firms succeed with organizational ambidexterity as a driver for sustainability innovation, and how can they maintain innovation capacity over time?"

The rationale for combining the perspectives is that it is difficult to succeed with the ambidextrous solution. It thus becomes interesting to examine not only how to succeed, but also how to preserve achieved success in the face of inevitable, time-induced change, which in itself often threatens the innovation capacity. It is also interesting to explore how and whether the ambidextrous solution can be a suited approach in the context of sustainability.

This thesis explores how the ambidextrous solution has been applied by a European architecture firm to enable sustainability innovation. The research is conducted as a qualitative case study. First, an overview of relevant theory in the field of organizational ambidexterity will be presented. Then follows an introduction of the case organization, which will serve to provide the contextual background. Next, the methodologies applied in the study are described, detailing the research approach, data collection and analysis. This leads up to the actual analysis which presents the findings in the thesis, before these are linked to the literature in the following discussion. Finally, concluding remarks summarize the study and suggestions for future research, before addressing limitations and outlining recommendations for the practitioner.

2. Literature review

This section outlines the theoretical background by presenting relevant literature, which will later be referenced as the findings are discussed. Specifically, existing literature on the field of organizational ambidexterity will be reviewed in relation to the research question.

2.1 Organizational ambidexterity

Technological and digital innovation happens at an incredible rate, challenging existing businesses and sometimes even rendering traditional business models obsolete (Jørgensen & Pedersen, 2018). This is further enhanced by an increasing focus on sustainability, reflected by changing consumer preferences and legislation. Incumbents can no longer depend solely on maintaining their current operations, they must simultaneously engage in radical renewal and innovation to remain competitive and survive in the long run (O'Reilly & Tushman, 2016). This dilemma has given birth to what Duncan in 1976 called "the ambidextrous solution". To be ambidextrous refers to the ability to use both hands with equal skill. Researchers have embraced the human trait as an analogy to describe accomplished organizations (Carmeli & Halevi, 2009). In a business context, ambidexterity means that organizations are aligned and efficient in the management of current business demands, while simultaneously adaptive to changes in the external environment (Gibson & Birkinshaw, 2004; Tushman & O'Reilly, 1996; Duncan, 1976)

The ambidextrous solution thus consists of two fundamentally distinct approaches to conducting business: exploitative and explorative strategies (Levinthal & March, 1993; March, 1991). Exploitative strategies are typically associated with improvements of workflows and optimization, dubbed incremental innovations (O'Reilly & Tushman, 2016). These are typically small, gradual improvements of a business' existing products, processes or business models. Explorative strategies, on the other hand, are radical and risk seeking (Pandey & Sharma, 2009). The latter thus seeks to discover the radical innovations that disrupt the market, which have the potential of generating profits in the long term. Whereas exploitative strategies require ambition, streamlining and optimization to succeed, explorative strategies depend on creativity and innovation.

Historically, the ambidextrous solution has been considered impossible, as the strategies compete for the same resources. One problem is the bias in favor of exploiting. Returns from exploitative activities are more certain and instant compared to results from exploration (March, 1991). However, exclusively focusing on exploitation can eventually result in the organization becoming obsolete. On the flip side, exploration might result in poor ideas with little to no results (O'Reilly & Tushman, 2013). Too much focus on exploration can thus lead to a failure trap that results in the organization not gaining any returns from their accumulated knowledge (March, 1991). Because the relationship between the strategies were considered mutually exclusive, it implied that the business would have to prioritize one strategy or the other, or periodically interchange (Duncan, 1976).

Since then, this manner of thinking has been challenged. In 1991, March suggested that businesses do not, in fact, have to prioritize between the two, but rather align them (March, 1991). This notion was then confirmed and ascertained by Tushman & O'Reilly in 1996 when they introduced an organizational model which allows simultaneous exploring and exploiting. This model has since been systematically reinforced through empirical evidence, which implies that incumbents who adopt this model better succeed in handling radical innovation and change (Tushman & O'Reilly, 1996; 2016).

A series of studies have mapped the economic effects of applying a dual structure. He & Wong (2004) found that the increase in innovation and market value that arose from implementing the ambidextrous model led to increased sales growth and market performance. O'Reilly and Tushman (2004) and Stubner, Blarr and Wulf (2012) argue that ambidextrous organizations are more likely to attain superior performance, compared to organizations that focus solely on exploitation or exploration. It is thus argued that the ambidextrous model is essential for business' long-term survival, as it increases the performance at the business level, as well as from a unit- and employee perspective. This is due to their ability to satisfy the current demand while simultaneously preparing for challenges related to their long-term survival (Cao, Gedajlovic, & Zhang, 2009; Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013; Raisch & Birkinshaw, 2008).

2.1.1 Implementing the ambidextrous solution

Businesses have applied different approaches when adopting the ambidextrous solution in practice. Herein lies different structural and organizational mechanisms that can be implemented to combine explorative and exploitative strategies. The literature primarily mentions three different ways of organizing the ambidextrous solution: sequential, contextual, and structural (O'Reilly & Tushman, 2013). The sequential approach entails that the organization pursues the two strategies interchangeably, thus having an on-and-off approach to the strategies, usually for set time periods. This approach has been criticized as it has been proven to be inefficient for organizations that operate in continuously changing markets (O'Reilly & Tushman, 2013). This thesis will thus only elaborate on the contextual and structural approaches, as the sequential approach is not considered relevant in this setting.

Structural Ambidexterity

The structural approach to the ambidextrous solution entails establishing a new organizational unit that is given responsibility for radical renewal (Stensaker, 2018). A prerequisite for the solution is that the innovation unit develops into something completely own and different from what the established unit represents (O'Reilly & Tushman, 2016). The ambidextrous structure will ensure that the new unit may reap synergies from the established, and simultaneously explore freely and uninhibited. The unit must thus have a high degree of autonomy and be as independent as possible. It is important to note that rather than being a R&D department, the unit represents a form of business development in which a separate business unit is established to engage in activities that diverge from the core activities in the established business unit (Stensaker, 2018).

To ensure this, O'Reilly & Tushman (2004; 2016) emphasize that the organizational solution should ensure separation between the innovative and the established entities, either geographically or organizationally (O'Reilly & Tushman, 2016; Stensaker, 2018). This inhibits pressure and contamination from the established, while allowing employees the opportunity to specialize. While the geographical and organizational distance is deemed crucial, it is important, however, that the separation does not exclude the possibility of leveraging resources and competencies from the established, as this is one of the core advantages of the ambidextrous solution.

Another particularly important aspect to the ambidextrous solution, is the organizational culture in the innovation unit. Culture is an aspect of the organizational context which can actively support and drive innovation and creativity or limit it. As the rationale for adopting an ambidextrous model is to entice radical innovation, it is crucial that the innovation unit may develop a unique culture that supports this. Due to the physical separation, the units often develop their own distinct cultures (Stensaker, 2018; O'Reilly & Tushman, 2016), which is deemed important for the two units to fulfil their purpose (Lavie, Stettner, & Tushman, 2010). Another important condition for the successful functioning of the model is support at the top management level, because without it, there is risk of resource starvation in the innovation unit (O'Reilly & Tushman, 2016).

Benefits and challenges

The main benefit of applying the structurally ambidextrous solution is that it allows the innovation unit to explore freely, independently and uninhibited, with minimal pressure or influence from the established unit. At the same time, it has access to draw on resources, experience and competencies from the established, which it would not have, were it a completely separate venture. This creates a significant advantage against potentially disruptive, entrepreneurial competitors that lack such assets (O'Reilly & Tushman, 2016). It is, however, challenging to achieve given the prerequisite of geographical and organizational separation.

A final fundamental point of the structure is that it facilitates that the innovation unit can compete with existing products and services, and thus potentially disrupt the core business. The rationale is that it is preferable to cannibalize rather than leaving market opportunities open for external competitors or new businesses (Stensaker, 2018). This can, however, cause tension between the units, as the innovation unit can be perceived as a threat by the established.

While there are significant benefits to be reaped from applying an ambidextrous structure, there are also several challenges and risks. One such is related to the prerequisite of physical separation. The innovation unit is separated to allow space to grow, which is deemed crucial for the development of a distinct culture. However, experience shows that the coexistence of different cultures actually makes collaboration at a later point in time more difficult (Løvik, 2020). Collaboration between the units is deemed important once the innovation unit has

reached a certain level of maturity, in order to leverage the synergies and strategically renew the established firm. As such, unsuccessful collaboration may inhibit the success of the ambidextrous solution.

Unfortunately, there are several aspects to the structural separation that can complicate collaboration. Separation causes risk of isolation and failure of communication, which can cause an absence of mutual recognition between the units (Gibson & Birkinshaw, 2004; Løvik, 2020). Failure to understand and appreciate the other unit's competence and importance can easily cause tension and resistance. Additionally, the fact that the innovation unit often has a mandate to cannibalize existing products can make the established unit perceive it as a threat, which can lead to poor knowledge sharing and resource starvation. To mitigate these risks, the research literature highlights the importance of integrating the units through strategic intention and shared values (O'Reilly & Tushman, 2013).

An overview of the theoretical prerequisites for succeeding with structural ambidexterity, is summarized in Table 1:

Table 1: Prerequisites to succeed with structural ambidexterity

Structurally separated (geographically or organizationally)	Inhibits pressure from the established and cross-contamination. Allows development of distinctly different cultures.
Distinctly different cultures	Allows the units to fulfill their respective purpose.
Autonomy	Allows the innovative unit to explore freely, independently and uninhibited.
Competition and cannibalization	Preferable to disrupt the core business rather than be outcompeted by external competitors.
Support from management	Facilitates inter-organizational collaboration and promotes goal alignment.
Strategic intention and shared values	Removes the perception of the innovative units as a threat and secures goal alignment.

Contextual ambidexterity

While structural ambidexterity takes the approach of organizational design, contextual ambidexterity takes a behavioral approach. This involves establishing structures and processes in a given context to ensure a balance between exploration and exploitation. The concept has been defined as "the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit" (Gibson & Birkinshaw, 2004, p. 209).

To achieve this form of ambidexterity, a much greater proportion of attention must be focused on the human side of the organization (Gibson & Birkinshaw, 2004). It requires the individual employee to continuously balance the time spent on explorative and exploitative activities (Gibson & Birkinshaw, 2004), and it is thus important that they acknowledge the equal importance of the two. This places greater responsibility on the employee and encourages a form of ambidexterity at an individual level rather than an organizational level. Even so, the employee's ability to demonstrate ambidexterity is influenced by the organizational context in which the individual operates. Hence, the role of leadership is critical for the unfolding of an ambidextrous organizational context (Carmeli & Halevi, 2009), as it is the management that must facilitate flexible shifting of focus.

One benefit to this form of ambidexterity is that the knowledge transfer happens faster across the two units compared to in a structurally ambidextrous firm (Güttel & Konlechner, 2009). Organizations that are contextually ambidextrous also demonstrate higher performance (Gibson & Birkinshaw, 2004), and studies even argue that contextual ambidexterity surpasses structural ambidexterity (Chang, Yang, & Chen, 2009). The integration of exploitation and exploration enhances firm performance by allowing the organization to be "innovative, flexible, and effective without losing the benefits of stability, routinization, and efficiency" (Simsek, 2009, p. 603).

Benefits and challenges

The benefits to contextual ambidexterity over more traditional approaches are increasingly acknowledged in business and research practice. There will always be some degree of conflict regarding the demands on a firm. Contextual ambidexterity is therefore often a matter of necessity to achieve both short and long-term performance. Contextual ambidexterity also illustrates the progression of an organization targeting exploration and exploitation through

organizational learning, thus evading the coordination and transitioning costs incurred on account of structural or temporal separation (Simsek, Heavey, Veiga, & Souder, 2009).

Implementing an organizational context that facilitates ambidexterity on an individual level can be challenging. A good organizational context generates an environment that inspires individual employees to do what it takes to provide results (Gibson & Birkinshaw, 2004). Researchers argue that the unit must steer clear of having too much focus on discipline and attention on performance, as this result-driven orientation can create burnout among the employees. At the same time, too much attention to the social context will hinder effective work (Gibson & Birkinshaw, 2004). It is yet to be determined what kind of organizational context best facilitates the development of processes, systems and structures that allows the "loose-tight" relationship that is necessary for contextual ambidexterity (Güttel & Konlechner, 2009).

Though the two forms of ambidexterity differ in many ways, they are best viewed as complementary. Structural ambidexterity may sometimes be essential, particularly for the emergence of a distinct culture. However, researchers argue that it should be a temporary solution, and the goal should always be reintegration with the parent firm, a process which can be enhanced by contextual ambidexterity. (Gibson & Birkinshaw, 2004)

2.1.2 Development over time in an ambidextrous organization

Directly after being established, exploratory units are free to focus solely on innovation as they are not bound by any of the responsibilities of the established unit. Over time, however, the explorative units will naturally gravitate towards more exploitative behavior, in order to deliver return on investment for the organization (Raisch & Tushman, 2016). This means that as the innovation unit becomes increasingly successful, it will be required to handle the trade-off between exploration and exploitation.

Consequently, the structurally separated unit might be obligated to move towards contextual ambidexterity, in order to adopt the dual mindset that is required to handle this trade-off (Raisch, Birkinshaw, Probst, & Tushman, 2009). Thus, the structural separation over time can require a change in the organizational context (Carmeli & Halevi, 2009). There is, however, disagreement regarding the most suitable solution to this challenge.

Few studies have focused on what happens once the innovation unit reaches a certain maturity and level of success. Some scholars argue that there is a need for even more formal structures and integration mechanisms in order to leverage the capabilities of the established firm (O'Reilly & Tushman, 2016). Others argue that the innovation unit should become even more autonomous in order to build their own profile (Raisch, 2008). Consequently, there are at least two approaches for what to do once this point is reached: namely reintegration or spin-off.

Reintegration

Reintegration entails strategic reabsorption of the innovation unit to leverage the new insights and capabilities that have been generated to ensure strategic renewal in the established unit (O'Reilly & Tushman, 2016; Friesl, Garreau, & Heracleous, 2019). Researchers have found that reintegration is the favorable solution when dealing with activities that are clearly linked across divisions (Siggelkow & Levinthal, 2003). This is because the act of consolidation handles the trade-off between short term expenditures of decentralized exploration and the long-term benefits of achieving higher performance (Siggelkow & Levinthal, 2003). It is also argued that this strategy is suited for innovations that are strategically related, yet in conflict with the business model of the established firm (Markides & Charitou, 2004). In such a case, slow integration can reduce the level of conflict, while at the same time allowing the utilization of synergies.

The potential benefits of reintegration seem to be clear. However, the strategy is not a suitable option under all circumstances. According to O'Reilly and Tushman (2016), reintegration should only be pursued "when the exploratory unit is big enough to have gained customer and organizational legitimacy and has demonstrated strategic viability" (p. 187). The alternative of spinning off the innovation unit might be better suited if the innovation unit is not of strategic importance to the established unit, as reintegration might not give the expected results (O'Reilly & Tushman, 2016).

Integrations present a challenge for both the established and the innovation unit, as a result of the difficult change process. In order to benefit from the synergies, integration of the two units is an important step. Though integration may be the goal, a certain level of autonomy is needed to preserve the innovation unit's capabilities (Rouzies, Colman, & Angwin, 2019). This

balancing act between integration and independence is similar to the dilemma that often occurs when establishing a structurally separate unit (Raisch & Tushman, 2016).

According to Birkinshaw, Bresman & Håkanson (2000), culture congruence might ease the integration. The innovation unit often develops a culture that is noticeably different from the established, which can influence their self-image, as well as their perception within the organization. Thus, the inherent differences between the established and the innovation unit might hinder the integration process. As reintegration constitutes a threat to the purpose-built identity of the innovation unit, this could result in a higher resistance to change from both units (Colman & Lunnan, 2011). It can also create fear of losing the innovativeness within the innovation unit, as these are characteristics that entrepreneurial firms tend to lose after being integrated back into the established (Skovvang Christensen, 2006).

Spin-off

The alternative to reintegration is to spin the innovation unit off completely. A spin-off refers to a situation in which the innovation unit has been created within the frames of the established firm. Once a new technology or idea has been developed, it is converted into a separate company where the parent firm retains a financial stake (Ferriani, Garnsey, & Lorenzoni, 2012; Agarwal, Echambadi, Franco, & Sarkar, 2004; Helfat & Lieberman, 2002). This allows the new unit to continue to develop and mature into its own established organization, which can then leverage and exploit the capabilities that it has developed (Clarysse, Wright, & Van de Velde, 2011). The organizational tie to the parent company, however, allows the spin-off to continue drawing on resources, marketing position and capabilities of the parent (Wolcott & Lippitz, 2007; Zahra, 1996), as well as feeding knowledge and technology back into the parent company (Ito & Rose, 1994; Ireland, Covin, & Kuratko, 2009; Narayan, Yang, & Zahra, 2009).

A third alternative would be to keep the innovation unit structurally separate and expand the innovation unit through the ambidextrous solution. This is not an extensively used approach in traditional contexts in which organizational ambidexterity is normally implemented. Reintegration or spin-off are more common approaches to handle the challenges that arise over time in more traditional ambidextrous solutions. However, there is limited knowledge on how

the ambidextrous solution functions and develops over time when the goal is to secure innovation for sustainability, which this thesis will explore.

3. Context

This chapter outlines the necessary background about the case organization, which forms the research setting. The following information was compiled from primary and secondary data sources to secure accuracy of the information provided by the informants. The data has been anonymized, and the pseudonyms "Architecture" and "Sustainable" are applied to refer to the two companies that make up the case organization, referred to as "Architecture-Sustainable".

Architecture is a world class architectural practice based in Europe, with a strong and growing international presence. *Sustainable* was established as a separate entity to be an innovation capacity for *Architecture*, with a particular focus on driving the sustainable agenda. The organization can be categorized as a small and medium-sized enterprise (SME) in terms of employees, with *Architecture* being considerably larger than *Sustainable*. The organization is quite untraditional and unique in its configuration, seeing as it consists of two separate, financially independent companies that operate out of the same office space and often in close collaboration. The partners in *Architecture* established *Sustainable,* with full ownership, in order to reap an untapped potential in incorporating sustainability in architecture.

The construction industry is very conservative and driven by cost-efficiency. It is also one of the industries with the largest negative impact on the environment, both in terms of CO_2-footprint and generating waste. It is very linear in terms of resource utilization, meaning that materials are sourced and used, and at the end of the building's lifetime they are discarded. Traditional construction methods do thus not facilitate recycling of materials, and the materials that are used are typically not friendly to the environment.

As part of its work on circular economy, *Sustainable* early identified the potential in finding ways to design and construct buildings in ways that use materials which reduce the carbon footprint. Additionally, when demolished, the construction design should contribute to minimize waste by ensuring that the materials, can be used again in new projects with minimal effort. Furthermore, there is an increasing focus on how to maximize the lifetime value of a building by implementing a longer-gazing perspective on expected future needs in the initial design.

Sustainable has also ventured into other aspects of sustainability, particularly social sustainability, by drawing on cross-disciplinary expertise and exploring the interplay between architecture and behavior. It also focuses on how to use its expertise to promote well-being for the users of the building, both now and in the future. However, the conservative nature of the construction industry means that there is an inherent skepticism for such novelty. Developers want predictability, time-efficiency, and minimal costs.

Furthermore, many architectural projects are given through tenders, which require the architects to complete a design concept with no guarantee of actually winning the project and getting paid. Competition entries are thus investments, many of which result in losses. All of this means, in effect, that architectural companies do not have resources (neither time, mandate, nor money) to engage in innovation activities aside from finding ways of optimizing existing practices, leaving them limited room to explore new avenues.

This process reflects *Architecture*'s goal of establishing *Sustainable* to discover new materials and construction methods to increase the sustainable efforts within the architect and construction industry. It was found necessary to establish a research capacity that could operate outside the traditional architectural setting, while also being financially self-sustained. As such, *Sustainabl*e was established as a separate company to conduct the research deemed necessary for pushing sustainability in the industry forward, which was not possible to do within the frames of *Architecture.*

Architecture naturally invested in getting *Sustainable* up and running, but there was an underlying requirement that the new company would have to be financially independent. Within 4 years it was, and since then, all transfer of funds between the companies have been purely transactional in the form of them buying services from each other. There is thus a clear organizational separation between the two companies. However, *Architecture* and *Sustainable* have the same owners, thus securing a shared interest in both firms.

This separate configuration has allowed *Sustainable* to explore and innovate freely and without any direct restrictions or meddling from *Architecture*. However, there is an underlying understanding that the research should be possible to feed back into *Architecture* to enrich their practice and value proposition. There is thus an inherent requirement for complementarity that guides *Sustainable*'s focus and strategic decisions. *Sustainable* thus engages in what is

referred to as "applied research", meaning that the hypotheses explored are typically within an industrial setting to ensure the practical value of it.

A lot of the research has been done in collaboration with research institutions, which has given access to funding. The closeness to *Architecture* has been an important avenue for testing and applying the research for verification. As *Sustainable* gained traction, presenting interesting findings and building up knowledge and experience, it has attained a position as an authority within the area of sustainable construction and development. This has led to it increasingly being approached by different types of organizations – private and public – for collaborations and even commissions, which has led to the emergence of consultancy as a business area for *Sustainable*.

What makes the organizational configuration particularly interesting is that despite being financially and legally separate, independent companies, they are co-located, sharing the same office space. There are no individual offices, a bare minimum of interior walls, and everyone in the two companies, from interns to partners, sit together. *Architecture,* being a conceptual architect, has put a lot of thought and three decades of accumulated professional insight into the design of the office space. As such, there has been created an environment tailored to stimulate creativity and collaboration.

The relationship between the two organizations has evolved during the time of existence. In the beginning, there was a lack of awareness and understanding of what *Sustainable* was doing, and the value that it could contribute. Now, it has long ago been accepted and recognized as a valuable asset, and the people within the two companies have good personal relations, both professionally and socially. This has contributed to a well-functioning collaboration between the two companies, which has enabled them to create synergies by leveraging resources from one another.

4. Methodology

The following chapter will describe the methodological choices that were made in order to best answer the research question. First, the research design is presented. Second follows a description of how the data is collected and the methods used to analyze the data. Lastly, the quality and ethical concerns of the study is discussed.

4.1 Research design

The research design can be considered a roadmap for conducting a specific research (Gehman, et al., 2018). In other terms, it is the plan for how you intend to answer your research question. The importance of having a clearly defined design, with choices that relate to the actual research question, cannot be over-emphasized (Saunders, Lewin, & Thornhill, 2016). The research question for this thesis is as follows: *How can established firms succeed with organizational ambidexterity as a driver for sustainability innovation, and how can they maintain innovation capacity over time?* The following chapter presents the plan for how this question will be answered.

The concept of ambidexterity is well known within the field of organizational research. However, extant literature focusing on the importance of collaboration between the explorative and exploitative units is limited. Likewise, the challenges emerging from the innovation unit developing over time and reaching maturity, has been given little emphasis. Additionally, organizational ambidexterity is not extensively explored in the context of sustainability innovation. This thesis thus seeks to explore these phenomena, and as such, uses an exploratory design. The exploratory approach permits the discovery of unexpected findings that are yet to be discussed in extant literature (Saunders, Lewin, & Thornhill, 2016). When conducting exploratory studies, researchers should observe, gather information and construct explanations (Ghauri & Grønhaug, 2005). The approach is flexible and allows for alterations to the research question and methodologies as new insights emerge. It also allows questions such as "why" and "what" to be asked, which can be important to strengthen the insights provided by open-ended questions (Saunders, Lewin, & Thornhill, 2016). The aim of this thesis is to explore a relatively unexplored phenomenon, in order to expand the research

literature on organizational ambidexterity. This coincides well with the purpose of exploratory studies.

Due to the exploratory nature of the study, the data was collected through a qualitative approach. This enables the researchers to gain in-depth understanding of the phenomenon, which would not be possible by using quantitative methods (Rowley, 2002). Case studies are suitable for investigating underlying causes of a phenomenon within their context. As the thesis seeks to explore the collaboration between the two units and the development over time within an ambidextrous organization, it was considered appropriate to conduct a case study of an organization that has successfully applied and upheld this solution over time.

4.1.1 Research approach

The research approach describes how one reasons and draws conclusions during a research process and considers how and in what order theory is developed (Saunders, Lewin, & Thornhill, 2016). This thesis takes an abductive approach, as it uses a combination of inductive and deductive methods. This involves an ongoing movement back and forth between theory and data, which allows for meaningful and data-driven theory development (Tavory & Timmermans, 2014). The research is conducted within the context of organizational ambidexterity and can as such be classified as deductive. The findings, however, derived from the within the data, and was thereby approached inductively. Combined with an exploratory design, this approach allowed the data to direct and shape the focus of the analysis and permitted the insights of existing theory to infuse the study.

Abductive research often begins with a surprising fact appearing from the initial data collection, which cannot be explained by existing theories. The research process will then be dedicated to finding plausible explanations for this phenomenon (Saunders, Lewin, & Thornhill, 2016). The researchers entered the interview-process expecting to uncover tensions between the companies, which would then create a starting point for exploring how the organization succeeds with the solution despite these challenges. However, early in data collection it became evident that there was, in fact, absence of tension. This was a surprising observation as it is rather different from what should be expected according to the extant literature. As such, it provided an opportunity to adapt the theory and rather explore what factors can explain the successful collaboration between the two organizations.

4.1.2 Purpose and strategy

The objective of this study consists of two parts. First, it seeks to aid practitioners in improving their understanding of what factors can positively influence the collaboration in an ambidextrous organization aiming to promote the sustainability agenda, and how ambidextrous organizations can maintain their innovation capacity over time. Second, it seeks to outline the preliminary work for further research on these specific topics.

The study is of qualitative nature, which is appropriate when the goal is to gain a deeper understanding in the form of rich, contextual, and non-numeric data (Ponelis, 2015). It is also suitable when one wishes to get an in-depth understanding of areas such as values, thought processes and emotions (Jemna, 2016). These are areas that are vital for understanding what factors contribute to making the collaboration between *Architecture* and *Sustainable* successful. Qualitative research also facilitates "why" and "how"-questions (Rowley, 2002). The opportunity to ask for descriptive answers were crucial for the understanding of the factors that influence the success of the ambidextrous solution in question, which was one of the main arguments for the choice of qualitative method. To gain a deeper understanding of the phenomenon, and its development over time, the ability to analyze and understand the personal reflections of the informants has been vital.

Qualitative research is unpredictable by nature (Creswell, 2014), and it was thus important to stay open-minded and flexible during the data-collection process. The informants sometimes provided different answers, and naturally, had different interpretations of the questions they were asked. As a result, the researchers gained insights into other areas than was intended. This helped shape the researchers view of the phenomenon, and ultimately, the research question, as in line with the predictions of qualitative methods (Boeije, 2010).

To study the topic in its real-life setting, it is most suitable to conduct a case study (Yin, 2018). Theory deriving from cases provides context, which can help make sense of the qualitative data that has been collected (Flyvbjerg, 2006). However, it is important to note that the findings cannot be considered representative outside of the specific context of the case (Eisenhardt & Graebner, 2007). This is of less concern here, as the purpose of the thesis is to broaden the insight on the topic, rather than to find one correct answer.

It was decided to conduct a single case study, as immersing in one specific setting was deemed more relevant to improve the quality of the findings (Dubois & Gadde, 2002). It was also considered more valuable to gain in-depth understanding of one specific context, rather than superficial knowledge of multiple cases. Still, on account of the transparent description of the findings and methodology, similar studies of different cases can be conducted by other researchers at a later time.

4.2 Data collection

The thesis is conducted as part of the overarching research project RaCE, which is short for "Radical Technology-driven Change in Established Firms". The project seeks to, among other things, broaden the understanding around the ambidextrous solution. The thesis is as such part of a series of case studies of established firms that have applied the ambidextrous solution with varying success. The connection to RaCE was important for getting in contact with the informants from *Architecture* and *Sustainable*. This section explains the type of data that was gathered, and how it was collected, coded, and analyzed.

4.2.1 Data sources

The primary data for this study was collected through seven semi-structured interviews with representatives from *Architecture* and *Sustainable*. The interviews were conducted during the first half of March 2021. Informants from both companies and different hierarchical levels were interviewed. This to ensure diversity and mitigate bias, as well as to view the phenomenon from different angles (Eisenhardt & Graebner, 2007). Secondary data was used as a supplementary source to triangulate the data and confirm the information provided by the informants (Dubois & Gadde, 2002). The secondary data includes the organization's website, publicly available information, e-mails, and preliminary conversations. This strengthens the credibility of the findings (Saunders, Lewin, & Thornhill, 2016). An overview of the interviewees is presented in Table 2:

Table 2: Informant overview

Informant #	Unit	Role
Informant 1	Architecture	Associate
Informant 2	Architecture	Associate
Informant 3	Sustainable	Manager
Informant 4	Architecture	Partner
Informant 5	Architecture	Associate
Informant 6	Sustainable	Manager/Partner
Informant 7	Sustainable	Manager

4.2.2 Case selection

This research examines one established firm and its innovative extension. The case was chosen through purposeful and theoretical sampling (Saunders, Lewin, & Thornhill, 2016) as it appeared to be a textbook example of a successfully ambidextrous organization, yet with a somewhat unusual focus on sustainability. To best understand which factors that influence the collaboration, it is important to get the insights and opinions from both sides. Therefore, data gathered from informants in both *Architecture* and *Sustainable* was examined, as well as publicly available information regarding the history of both firms.

In order to collect meaningful data, it is necessary for researchers to negotiate access to relevant sources (Saunders, Lewin, & Thornhill, 2016). Senior researchers suggested this particular case, as they had contact with the case-organization through the RaCE-program. Prior to the interviews, two Teams-meetings were held with the contact person in *Sustainable*. In the second meeting, selection of informants was discussed, and the contact person suggested relevant members, who were then contacted to arrange interviews. The suggested informants

were from both organizations, with various positions and seniority, per the researchers' request. This to ensure diversity in the findings and different perspectives.

In theoretical sampling, the sample size is linked to the information received by the informants. It can be considered sufficient once researchers have gained an overview of the topic, and further interviews will not provide additional information. This is referred to as theoretical saturation (Saunders, Lewin, & Thornhill, 2016). Once all the scheduled interviews had been conducted, the data collection was concluded, as it was decided that further interviews would likely not generate any significantly new insights.

4.2.3 Semi-structured interviews

When conducting semi-structured interviews, the researcher is allowed to ask follow-up questions, making it an eminent tool when conducting exploratory research. This can often be necessary to gain thorough understanding of complex situations, and to add depth and dimension to the obtained data. Rather than just exploring the "how" and "what", the researcher can explore the underlying cause behind certain events. This form of conducting interviews was thus deemed suitable for the purpose of this study (Saunders, Lewin, & Thornhill, 2016).

Seven qualitative semi-structured interviews were conducted, which constitutes the primary data for this study. All interviews were conducted through digital video meetings which were recorded. Each lasted from 45 to 90 minutes, with the median being one hour. Before conducting the interviews, a list of probing questions was developed. This to ensure that all relevant topics would be covered, and to ensure consistency across all interviews. The questions asked were mainly open-ended to enable the informants to lead the conversation. The questions were also formulated to encourage dialogue between the parties, which ensured depth and context to the answers received.

The advantage of semi-structured interviews is the flexibility to adjust the questions, to ensure that the most relevant themes are covered (Saunders, Lewin, & Thornhill, 2016). This could be valuable if new and important themes are discovered that the interviewer was not aware of before the interview. The flexible approach to conducting interviews allowed follow-up questions to be asked as interesting and unexpected topics emerged. After the first interview,

the findings were assessed against the interview guide, and the questions were adapted according to the insights that were gained.

4.2.4 Interview plan and process

Preparation is key to conducting successful interviews (Saunders, Lewin, & Thornhill, 2016). Before conducting interviews, it is vital to get an overall understanding of the purpose and the services that the organizations offer. It is also crucial to have a theoretical background of the phenomenon in question, to make sure that the right questions are asked. This signals credibility to the informants and ensures a more effective use of time when exploring the phenomenon.

Before conducting the actual data collection, the researchers received video-footage of an interview conducted by senior researchers in the RaCE program, and the original contact person from *Sustainable*. This interview was transcribed and used as base for the context, as the main discussion in the interview was related to *Architecture-Sustainable*'s purpose and operation. Additionally, two preliminary digital meetings were held with key personnel at *Sustainable* which added to this insight. This gave the researchers sufficient information about the companies in question, to prepare for the interviews. The researchers also publicly available information about the companies, including their websites, to get additional information.

The interviews began with general questions to get knowledge of the informant's background, before moving over to more specific questions regarding the organizational culture, and the relationship and collaboration between the two companies. Furthermore, questions regarding the development over time, and the potential challenges they face as a result, was asked. Finally, all informants were asked if they had any information they wanted to add, to ensure that nothing of relevance was overlooked. The complete interview guide is attached in Appendix A1.

The semi-structured method gave the researchers a certain level of flexibility during the interview process. For example, there were some cases where the informants did not answer the question directly. This provided insights into subjects that were not necessarily intended, resulting in an enriched understanding of the phenomenon in question. This also resulted in

jumping back and forth in the interview guide, in order to cover the topic in question. Still, the interview guide was a valuable tool to have to make sure that all relevant topics were covered.

In preparation of the interviews, the informants received information about the purpose of the research project and how the data would be handled, as well as assurance of anonymity. Additionally, they were asked to sign a consent form developed by RaCE, see Appendix B. The form clearly states the voluntary nature of the interview and gave information about the RaCE program. Prior to starting each interview, it was confirmed that the informant agreed to the interview being recorded.

4.3 Data analysis

As already mentioned, the thesis follows an abductive approach. As such, the main ways to generate insights are through data analysis and identifying the connection to existing theories (Orton, 1997). The process of analyzing data was iterative, meaning that the insights gathered from the first interview were used to adjust the interview guide, thus shaping the following data collection. The first interview was transcribed immediately after it was conducted. This allowed the researchers to discover, for example, shared culture as a central theme to explaining the successful collaboration between the companies. The interview guide was then adapted with more specific questions to explore this further in the following interviews. Additionally, it was through the analysis of the findings that interesting facts relating to the time-perspective came into focus and subsequently added to the research questions. See Appendix A2 for adapted interview guide.

4.3.1 Transcription

When data has been recorded by the use of technical media, transcription is a necessary step to ensure correct interpretation (Flick, 2014). The process of transcribing helps to get familiarized with the data, as one is forced to listen carefully to every word. All the interviews were fully transcribed to assure access to interpretation of the data. It is important that the transcriptions are clear and easy to read. All interviews were transcribed word for word, and the process was aided by the digital tool InqScribe. To ensure quality, the transcription was conducted shortly after the interviews were conducted. Information that helped shape the

context, such as laughter, silence and hand gestures was added to improve the understanding of the statements (Saunders, Lewin, & Thornhill, 2016).

4.3.2 Coding

After all the interviews had been transcribed, it was important to code the data to facilitate analysis and transform the data to meaningful findings (Boeije, 2010). The first step to the process, was open coding. This involved reading the transcriptions line by line, compressing the content from longer statements, to identify the most obvious categories and comparing the different parts (Boeije, 2010). This part of the process was flexible and inductive, and aimed to provide a proper understanding of the actual information. At this stage of the coding process, themes and links began to emerge. A luxury of being two researchers is that it enabled the initial analysis to be done separately before comparing notes, which allowed confirming the sensibility of the interpretations.

The next step was to identify the most prominent categories and themes, a process which is defined as axial coding (Corbin & Strauss, 2015). This process involved reviewing, comparing, splitting and/or merging the codes, to allow the most important aspects to appear. The final stage, selective coding, involved organizing the data to connect the dots (Boeije, 2010). The relevant data was arranged by individual assessment of each statement and placed in categories according to emerging themes. This resulted in the prominence of a structural outline which enabled connecting the findings to relevant literature.

4.4 Research quality

The following section addresses the strengths and weaknesses of the research methods applied in this study. An ever-present concern in the research setting is that of the research quality and trustworthiness of the findings. In quantitative research, emphasis tends to be on reliability and validity as criteria for the quality (Saunders, Lewin, & Thornhill, 2016). For qualitative methods, however, other measures are often considered more appropriate to determine the trustworthiness of the research, as it tends to be more pragmatic in nature than quantitative research (Guba, 1981). For this thesis, the chosen criteria are credibility, transferability, dependability and confirmability. While related to the concepts of validity and reliability, the

qualitative criteria are deemed better fitted to assess the qualitative data, as trustworthiness is considered to be of higher value for this particular setting. The integrity of the research has been of high priority, as the intention is to enrich the literature on the ambidextrous solution and lay ground for future research.

4.4.1 Credibility

The credibility criterion addresses the degree to which the researchers' rendition of the study can be considered reliable and plausible. To enforce the credibility of the findings, it was made sure to ask follow-up questions during the interviews to affirm that the statements were understood correctly. During transcription of the recordings, care was taken to include additional information such as laughter, humor, and irony to avoid misapprehension. Additionally, participant validation (Saunders, Lewin, & Thornhill, 2016) was applied such that the findings were sent back to the informants for verification. This to ensure that the representation is faithful to the intended meanings and reflects the reality of the companies. Feedback and corrections were then implemented after the participants had reviewed the findings.

Furthermore, the primary interview data was combined with secondary data from multiple sources through the process of triangulation to increase the credibility by verification of the findings (Guba, 1981). The secondary data was reviewed before and after the interview process to inform and verify the interpretation of the informants' accounts. Moreover, the participants were from both companies and different managerial levels, providing various subjective perspectives, which also supports credibility (Sinkovics & Penz, 2009). A potential weakness is that from *Sustainable*, all the informants were managers. It is possible that employees could have had different perceptions of certain things. However, seeing the consistency in descriptions given by all the informants, including employees from *Architecture*, it was considered enough to assume that there would be no major differences in renditions from other employees. Finally, the process of investigator triangulation (Korstjens & Moser, 2018) was applied, by which the two researchers conducted an initial analysis of the interview data independently before comparing the results.

Findings that have not been corroborated from at least two separate sources are not presented, rather, the vast majority relies on several. The findings that are presented stem from a general

consensus, and no significant internal contradictions were found, reflecting a high degree of coherence in the accounts given by the participants.

4.4.2 Transferability

This thesis is a qualitative case study, and as such, it is not intended to be generally representative. Rather, the emphasis has been on reproducing the context as vividly and precisely as possible without unveiling identifiable details about the informants or the organization. This enables the reader to interpret and evaluate the findings in light of the context and thus their applicability to a different context, without compromising the anonymity of the case organization. The abductive approach which links the data and relevant theory with the rich contextual background, increases the readers' ability to transfer the findings to different contexts (Guba, 1981).

4.4.3 Dependability

To ensure dependability, the researchers have established a transparent trail of evidence which can be followed by the reader to examine the process and approach that was taken. This allows the reader to evaluate how interpretations were made. Dependability is further supported by the fact that constructive feedback was received from the supervisor during the period in which the study was conducted. Additionally, peer feedback sessions were held within the extended research group in the RaCE program.

4.4.4 Confirmability

To aid confirmability, care was taken to avoid that personal inclinations and subjective values would bias the research process. The research design and construct has contributed towards minimizing risk of personal bias in the execution. Particularly, making the research guide and amending it after feedback from the supervisor, ensured objectivity and consistency across interviews. Additionally, the findings are extensively supported by direct quotes from the participants. This contributes to showing how their reflections, anecdotes and insights have been interpreted, and thus how conclusions were drawn (Gibbs, 2007). Furthermore, the methods applied in the research are transparent and thoroughly described to inform future studies and allow for repetition.

4.4.5 Ethical considerations

Research ethics is important to consider in the research setting, as failing to do so can impact the quality (Saunders, Lewin, & Thornhill, 2016). As such, the researchers were actively conscious of this risk and took care to apply the principles of research ethics throughout the process.

The informants were early on provided a description of the background for the study, as well as information about the overarching research project. This to reassure the informants about what they were agreeing to participate in. Additionally, they were provided with an official RaCE "Informed consent" form, clarifying that participation was voluntary, and that they would be able to withdraw their consent at any time. The form is available in Appendix B.

In an effort to protect the informants and ensure confidentiality, all names and locations have been anonymized and replaced with pseudonyms. However, confidentiality in qualitative studies is a balancing act, seeing as a significant amount of the value lies in the level of detail of the data and context from which it was collected (Gibbs, 2007). Care has been taken in attempting to provide enough context and background to extract value from the findings, without making the companies too recognizable.

All the collected data has been digitally stored and encrypted in secure locations, ensuring that no unauthorized individuals could access the findings. Once the thesis is finished and handed in, all sensitive information will be deleted from these locations and handed over to RaCE for continuous research purposes. The physical copies have also been shielded from unauthorized individuals and will be maculated before hand-in.

5. Analysis

The following section will present the data that was gathered during the study. The analysis consists of two parts. The first part starts by outlining the structure of the organization and presenting what characteristics it shows that makes it ambidextrous, before venturing into evidence of the success and finally what contributes to it. This evidence will later be connected with the literature in the following chapter "Discussion". The second part of the analysis will address the temporal aspect of the ambidextrous solution. This is an aspect that is underrepresented in extant literature, and it will thus be interesting to explore how the innovation capacity can be kept as the innovation unit continues to evolve.

5.1 Organizational ambidexterity for sustainability innovation

Architecture and *Sustainable* are accomplished and recognized within their respective fields, and they have managed to find an approach that allows the companies to have a well-functioning collaboration. They appear to have mitigated several of the risks that, according to the literature, are likely to emerge when venturing into a structurally ambidextrous solution. They have also successfully leveraged the synergies deriving from the solution. This part of the analysis will explore the characteristics of the ambidextrous solution in question and explore how this specific solution permits the promotion of the sustainable agenda.

5.1.1 Structural separation through financial independence secures autonomy

Sustainable was established with the purpose of being the "innovative arm" of *Architecture*, enabling both radical and incremental innovation within sustainability through structural separation of the companies. Contrary to the traditional approach to structural ambidexterity, there are no financial ties between the companies, meaning that they are financially independent.

> *[…] financially we're two separate companies […], we got our own budget, and gotta make that own budget work, so in that sense there is no sort of transfer money. […]* [Architecture] *is great for us in terms of trying to sell us into projects. As a separate company, with a separate income stream, that's good for us. – Informant 7, Sustainable*

The two companies have shared ownership, however, there is no financial dependency. This implies that even though *Architecture* has an interest in *Sustainable*'s success, there are no direct financial interests. As a result, *Sustainable* are responsible for their own finances, yet there is an organizational link to *Architecture*, connecting the two companies.

> *It's working quite well, it's just that initial investment of 4 years of […] getting them off the ground, but at the moment they […] just run their projects, run their economy, and even if the ownership is shared with some of the senior partners, it's an independent company under the same umbrella. – Informant 5, Architecture*

As the two companies are in fact independent, any financial transactions are through purchase of services, as would be the case with external collaborations. As such, there are no other funds being transferred from *Architecture* to *Sustainable* in order to keep the innovation company running, and *Sustainable* thus relies on finding its own sources of income.

> *[…]* [Sustainable] *invoices* [Architecture] *[…] because it's a separate company, they're just like a subconsultant, so they invoice the hours that they've used, and then we pay them. – Informant 4, Architecture*

As a result of the financial independence, there are no shared liabilities between the companies. This means that if one of the companies were to suffer financial difficulties, this will not directly affect the finances of the other. Nor will one be held accountable for the other's performance in relation to clients.

> *[…] so we are not liable together, they need to deliver, they are responsible to what they do, and our job is completely different, […] they are completely independent, they are always doing their own projects. – Informant 5, Architecture*

The structural separation allows *Sustainable* to have a high degree of autonomy and explore freely and uninhibited. In fact, as seen from *Architecture*'s perspective, *Sustainable* has liberty to collaborate with more or less any other organization, including competitors of *Architecture*.

[…] they've got a really good degree of autonomy, the whole point of the enterprise is the benefit of the collaboration [...] So, I think that there is obviously a very strong relationship between [Architecture] *and* [Sustainable] *as enterprises but I don't think that that necessarily limits their ability to operate independently. – Informant 2, Architecture*

Interestingly, the perception from *Sustainable*'s point of view is slightly different. The members show no interest in exercising that liberty to its fullest. This is partially because there is an expectation that it would incite a reaction from *Architecture*, but also because a feeling of unity and high degree of integration results in an internalized focus on shared value creation. There seems to be a net value mentality that guides strategic decisions rather than opportunistic and individualistic thinking.

I feel like it's an open marriage, but it is a marriage all the same, and we've got to consider [Architecture], *and certainly not disadvantage them. But trying to decide where the line is, it's tricky, you know, that's a soft line. – Informant 3, Sustainable*

I mean it would definitely be put on us if we did [collaborate with direct competitors]. As long as I've been here that's sort of just been the rule of thumb […] I mean, it makes sense, we are the same company, why would we wanna support direct competitors? – Informant 6, Sustainable

The separation has been instrumental in ensuring that *Sustainable* has been able to operate outside the restrictions of the traditional architecture business model. At the same time, the integration and closeness aids easy transfer of knowledge. This has allowed *Architecture* to get ahead of the competition, because the solution allows *Sustainable* to explore freely and generate knowledge that can then be used to inform the work of *Architecture*.

[…] the value is in the separation […] it's incredibly valuable, and I would say it's an intrinsic part of [Sustainable]*'s offer, the fact that they're not constrained. [...] The value is that you've got a group of highly motivated intellectuals, academics, who are able to […] spend months researching, […]. And I think that process is very hard to maintain in an architectural project setting. […] That is probably the most important part of their identity. – Informant 2, Architecture*

[...] but I think it has helped us push it …quicker than the others. Yeah, we can see that everybody is talking about circularity and everything, but we've been talking about it for like more than 10 years […] So in many ways, we [have] just been able to implement it quicker. – Informant 4, Architecture

5.1.2 Co-location trumps physical separation

Another way in which the solution differs from the traditional, structurally ambidextrous solution, is the fact that *Architecture* and *Sustainable* are co-located in a shared office space. This facilitates frequent interaction in the normal day-to-day work.

> *I mean we all sit together, so we always interact with each other […]. And obviously the interaction is from the projects when we are involved. – Informant 4, Architecture*

The co-location also facilitates collaboration by lowering the bar for initiating dialogue, as well as making the process of collaboration easier through physical interaction.

> *[…] the collaboration is very easy. I mean, obviously, they sit in the same office, which helps […]. I think collaboration and inter-office collaborations is one of the biggest strengths to* [Architecture] *and* [Sustainable]. *– Informant 2, Architecture*

5.1.3 Shared culture as opposed to "distinctly different"

An interesting aspect to *Architecture-Sustainable*, is that the culture is perceived as the same. This is reflected in how informants from both sides describe their respective company's culture in similar terms, as well as stating it explicitly. It is also highlighted that this shared culture contributes to a feeling of unity across the companies. This is strongly aided by the scale of the organization, which is very manageable and allows the employees to establish close relationships with each other.

> *We share the same culture, and I think we share the same value, and* [Architecture]*, it's a very human scale company, and I know we always say that it's like a family, but I feel like the scale of it really makes the connection with other people easier, and you know everyone […]. What I can see a little bit, [the differences are] maybe more in the way we work, […] but otherwise I think that the culture is the same. – Informant 1, Architecture*

Some of the key characteristics used to describe the culture are 'informal' and 'non-hierarchical'. This is reflected both in project work, and in general inter-office interaction in that interns and partners can interact as equals. There is no emphasis placed on seniority, and the culture encourages participation in decision making for all employees.

> *I think we have a quite open and unhierarchical culture. […] a culture where ideas are king, you could say. It's not about who gets the ideas – Informant 6, Sustainable*

There is a high level of trust and individual autonomy, with more focus on personal freedom and less focus on micro-managing individual employees. Nonetheless, the freedom comes with a certain degree of responsibility. While there is a high level of trust in the employees' abilities and what they are capable of, there are also high expectations for what they can and should achieve. Being self-sufficient and able to take initiative are qualities that are highly valued and can be considered a prerequisite to maintain the autonomy and trust that characterizes the organizations.

> *[…] And people are very reliable, I think when you give someone a task, you actually know that they will deliver, so, there is a high level of trust in the employee that we know what they can do. – Informant 4, Architecture*
>
> *[…] we like to go after the ideas, and when we work, we demand a lot of each other. But, be very respectful. And what we demand is not necessarily that people are here all the time, but it's more that you are serious about what you do, and you are critical about what you do. And then we try to have a respectful tone towards each other. – Informant 6, Sustainable*

The culture is built on soft values, creating a supportive environment where the members can thrive and that stimulates creativity and participation. It is exclusively described in positive terms and is perceived as an important contributing factor for not only attracting, but also retaining desired talent. As such, the culture itself enables selective recruitment that further reinforces the desired, end evidently beneficial culture.

> *There seems to be that we've got relatively good retention rates as well, I think probably the culture is a big part of that – Informant 2, Architecture*
>
> *[…] the culture is really good, I think the strongest suit is the collaborative approach, you know all of the decisions are made, there is lots of discussions, and there's a lot of understanding […] so it's a really nice environment for creativity. Which is really good. Across the whole gamut of, […] it's how we promote ourselves internally and externally, kind of knowledge sharing within the practice. – Informant 2, Architecture*

Communication

Open communication is an additional aspect to the culture that is emphasized, and something that seems to be inherent in both companies. Discussion and dialogue are encouraged, and it is considered important that everyone may express themselves and be heard. This is supported by formal arenas designated to facilitate communication, as will be elaborated on further in the following section (5.1.4).

> *I think that there's a very good culture of conversation and discussion. […] one of the big strengths as I see it at* [Sustainable] *and* [Architecture]*, it's that this collaborative, communicative nature runs through pretty much everything. – Informant 2, Architecture*

The communicative approach has positive effects on the collaboration as it prevents misunderstandings and conflicts from arising. The absence of conflict is also a result of alignment in goals and ambitions, which creates a shared view of what the best decision in a given situation is.

> *I've not witnessed any conflict […] in* [Architecture] *or* [Sustainable]*. I mean, there's inevitably disagreement, […], but I think that there's a very good culture of conversation and discussion, […] and once we've all agreed on a design direction it's not like there's lingering, tension […] I think we all just agree that it's what's best for the project and move on. – Informant 2, Architecture*

5.1.4 Cross-pollination and knowledge sharing, rather than resource guarding

There is a permeating focus on sharing knowledge within and between the companies. This is something that is reflected strongly in the culture, and both companies see the value in sharing their skills and competence.

> *I think one of the really nice things […] is this approach to knowledge sharing generally. There's a big drive in the practice to make sure that people are talking, and that we are learning lessons from stuff – Informant 2, Architecture*

Several mechanisms are in place to systemize and facilitate the knowledge sharing and ensure that knowledge is transferred within and between the companies. Formal knowledge sharing sessions with both companies are held regularly, enabling and encouraging the employees to share their knowledge and expertise within specific topics. Regular team meetings encourage

a general openness regarding what activities people engage in. Additionally, finished reports are distributed to the entire firm as projects wrap up. The active approach to and frequency of knowledge sharing creates awareness of what knowledge exists within the organization, and with whom it lies. Additionally, the mechanisms serve the purpose of keeping everyone in the loop on what goes on in the organization, which is particularly important in *Sustainable* where there is a high level of variety in types of projects. This makes collaboration and leveraging existing competencies easier, which are the main reasons why sharing knowledge is such a big focus within the organization.

> *[…] there's another knowledge sharing, in general. We try to organize it. [...] there's an hour where somebody who knows something, [...] or has done something well, does a knowledge session for the whole office, and everybody comes, and everybody watches it. Another interesting thing is, you know that that's possible, but you also know who does that, right? So, you can go to that person now. And again, that comes to why [...] the collaboration works - but you need to make those people visible – Informant 7, Sustainable*

> *[…] it is incredibly important to keep telling each other what we do, because we do so many different things, and they become very specialized, and the real sort of interesting value, again, comes when we can bring that together on new projects – Informant 7, Sustainable*

The mechanisms to ensure transfer of knowledge affects the culture, and the general norm is that knowledge sharing is desired and encouraged. Although the formal arenas are helpful to ensure that the knowledge may be leveraged, there is also considerable value in informal, organic knowledge sharing. This unfolds in casual settings such as conversations by the coffee machine, in addition to the formal knowledge sharing sessions, and is aided by the people in *Sustainable* being genuinely interested in the work that they do and are eager to share.

> *[…] the knowledge sharing feels a little bit more person-to-person, so I think it'd be about talking to Sustainable and sort of saying "This is what I'm interested in finding out more about, have you done anything?", and then them racking their brains and sending you some links, and take you through a presentation. I think it's a bit more organic than a formalized process. – Informant 2, Architecture*

Another important aspect to the informal knowledge sharing is that which happens through collaboration. The different competencies and services are often brought together in joint projects. From the perspective of the informants, this is considered the ultimate way of

transferring knowledge between the companies, as it leverages their respective competencies in practice and stimulates new ways of combining knowledge.

> *The best way to share knowledge is to develop stuff together […] …through that work we develop something together, and that's then the shared knowledge. – Informant 7, Sustainable*

In *Sustainable*, there is an additional importance to knowledge sharing that derives from its exploitation-exploration dilemma. As it is a smaller company with more limited resources, the average workload per person is greater. As such, knowledge sharing is necessary not only for leveraging and reaping synergies, but also to free up capacity to engage in development rather than reiteration.

> *[…] so, the two different levels it comes down to, sharing that knowledge internally. That would free me up to do more strategic work on new consultancy and drive that service forward rather than repeat work of existing. – Informant 3, Sustainable*

The highlighted importance of knowledge sharing signals an underlying interest in shared value creation. This is reflected in an increasing focus on ensuring that the knowledge generated in *Sustainable*, actually is transferred into *Architecture*'s practice. One of the challenges that *Sustainable* face is being able to convert the knowledge into something that is understandable for outsiders. The challenge of transferring the knowledge is amplified by the distinct differences in competencies in the two companies, as the divergence academic backgrounds give different prerequisites to interpret the ideas. This has led to a high degree of dependency on key personnel from *Sustainable* to ensure that the knowledge is successfully applied to the architecture. This is seen as a challenge, as it seizes a lot of resources. *Sustainable* is thus increasingly focused on finding ways to communicate the knowledge so it becomes more accessible and applicable with less demand for resources.

> *[…] I think that there is an inherent difficulty in converting academic research into physical reality. […] If research is […], too academic- you know, architecture by its nature is a very physical thing, and if you don't have enough guidance, it's difficult to sort of convert all that stuff. Particularly if you've got some really intelligent people at* [Sustainable]*, […] their thinking needs to be boiled down into a way that we can easily represent in the architecture. Otherwise, it'll just sit on a shelf as a book. And that's the last thing we want to happen. – Informant 2, Architecture*

The focus on open knowledge sharing extends beyond the limits of the organization. *Sustainable*, being a bank of knowledge, have chosen to not limit the access to their research exclusively to *Architecture*. All the research is made publicly available, and members of the organization frequently have talks at conferences and such. *Architecture* have found that the knowledge provided by *Sustainable* through its research is valuable not only for *Architecture*'s architectural work, but for promoting sustainability in the construction industry in general. This comes to show through active interest from external parties that results in the emergence of a network.

> *[…] I think there is a lot of people that just come because* [Sustainable] *is here, and just getting access to that network and those minds, it's always good. – Informant 5, Architecture*

In addition to sharing core-business competencies and specific knowledge, there is also some cross-pollination in terms of organizational learning between the companies. The closeness allows for migration of best practices in both directions, ranging from presentation narratives to structuring of operations.

> *[…] trying to bring more system, and a level of professionalism into* [Sustainable]. *[…] we certainly try to learn from them […]. As a smaller, younger company we do look to them sometimes – Informant 3, Sustainable*

5.1.5 Complementarity and collaboration rather than competition and cannibalization

Architecture is a typical architecture firm, whereas *Sustainable* conducts research within areas directly or indirectly related to architecture that can help to promote sustainability in the industry. Naturally, the two companies require different types of expertise and professional backgrounds. This means that their services and competencies are quite different, which could in theory have led to difficulties in collaboration and communication. However, the services and competencies are also complementary, which has been an important reason as to why the companies over time have managed to integrate the services and find a collaborative approach that works.

We are architects, we design stuff, we go for it because it's pretty, and feels right, and it's, of course, misalignments once you have the heart and the science, they don't normally get together well. But it's been changing a lot the last couple of years, and, it's getting better at this kind of like, challenging each other, and not just trying to explain each other why this is better than the other. […] So the mindsets of people is quite different, but that's what makes it interesting as well. – Informant 5, Architecture

While the culture is perceived as being the same, there are some inherent differences between the companies. This comes to show primarily in their working methods. The companies face quite different environments, which demand different attributes. *Architecture* operates within the constraints of a conservative, cost-driven industry, which demands more structure and streamlining than *Sustainable*, which has very few constraints. This means that *Architecture* faces a high degree of predictability which allows it to create standardized methods of working.

I would say sort of from the outside of Architecture, they are more structured, and it is more hierarchical. Perhaps not that it's a particularly hierarchical company, but just out of necessity, you know projects need to have certain people that take responsibility. […] It's still relaxed over in [Architecture]*, and it's not a very strict kind of formal environment at all, but there are more processes. – Informant 3, Sustainable*

Sustainable on the other hand, faces much more unpredictable work streams due to the explorative nature of its practice. The unpredictability is reflected both as variety in types of projects and what they require, in the amount of work available, and in the duration of projects. This limits the possibility to develop standardized workflows and processes. Due to the unpredictability, *Sustainable* requires personnel that are generalists, and capable of adapting to changing circumstances and taking on various types of tasks. This is in large enabled by the structural separation, which allows *Sustainable* to work in more agile ways.

I think our strength comes in actually being able to work very agile, very bespoke, and I don't think that all architecture companies can do that. – Informant 7, Sustainable

The two companies have very different orientations and ways of working, and as a result, they engage in rather different activities. However, these distinct differences do not result in an "us versus them" mentality as one might expect. The co-location and frequent interaction, both socially and professionally, enables a feeling of unity rather than generate tension.

> *[…] I think just the nature of the companies are different. I mean we sit in the same space, we share Friday rounds, we share lunch, it feels like the same, but if you go to the competition phase it's all about design materials […] and these guys are talking about numbers and calculations, and [Sustainable's knowledge areas]. It's kind of a good addition, but they are quite different […].*
> *– Informant 5, Architecture*

As the companies possess quite different competencies, they can help each other on projects that require knowledge outside of their area of expertise. Historically, it has mostly been *Architecture* that has brought in the expertise of *Sustainable* to add to their projects. However, *Sustainable* is generating more and more direct business, some of which requires that it draws on expertise from *Architecture*. As such, the dependency is increasingly bilateral, adding a higher level of complexity to the collaborative aspect of the ambidextrous solution.

> *If we get a project where we actually gotta build something, we really rely on* [Architecture] *[…]. And they come to us if they have questions about specific sort of things, like [knowledge area] […] So there's no clear one-way, it's more complex, and it's becoming more complex – Informant 7, Sustainable*

In any professional collaboration, formal structures such as agreements and contracts are in place, ensuring that there is no room for misunderstandings regarding the terms of the collaboration. This is increasingly also the case for collaborations between *Architecture* and *Sustainable*, to mitigate risk of conflicts. The two companies have managed to find a format of collaboration that works, and as a result, conflict has not yet occurred.

> *And we try to make formats for how we work together […]. We try to make fixed agreements and say this is how we do it. – Informant 7, Sustainable*

Though they are tightly integrated, the preferred approach to collaboration is to maintain a certain level of professional separation on the projects that they are working together on. This is to ensure that the quality of the project is not impaired as a result of biased decision making.

> *In my own experience I really prefer them as a consultant, not as part of the team, and that's just because they need to be able to challenge us, and we also need to be able to challenge them, […] they come as experts and kind of, add value to it, and we can challenge it also if we believe things are not completely correct. – Informant 5, Architecture*

The complementarity in competencies and services means that the quality of delivery on a project can be improved by joining forces through collaboration, and this is when the value creation is maximized. The services are so connected and intertwined that they in fact are hard

to dissociate, which is reinforced by changing customer preferences. The interconnectedness is reflected through the internal perception of the two companies being one entity, implying that both the services and the companies are complementary. The collaboration is thus a necessity to meet market demands, which additionally works as an integration mechanism, amplifying the feeling of unity.

> *I feel like somehow* [Sustainable] *really brings a component, and a layer of complexity and understanding of architecture that is kind of necessary in the world that we are living in. – Informant 1, Architecture*

> *[…] we actually create synergy between the research and the actual architecture. […] I would say they are very different, but very complementary […] it's almost as like you cannot really dissociate them anymore, I think they are like almost one. – Informant 1, Architecture*

The management plays an important role as an integration mechanism by actively encouraging and facilitating collaboration between companies. It is also evident that there is a consideration for every project that is brought to either of the companies, whether the project should be placed under *Sustainable*, *Architecture*, or if it should be a collaboration. This indicates that there is strong goal alignment and integration at the management level.

> *[…] in relation to* [Sustainable]*, I […] work quite a bit with the three heads of* [Sustainable]*, in all aspects of the business development side of* [Sustainable]*. I am not directly in charge of* [Sustainable]*'s pipeline as such, but what I do is that whenever there is a project in* [Architecture]*, I always try to sort of add in the* [Sustainable] *part of it. […] sometimes I also help out just purely on* [Sustainable] *stuff. – Informant 4, Architecture*

The companies differ in nature, and they thus have different targets, goals and outcomes. However, there is some overlap between the overarching visions and values platforms.

> [Sustainable]*, their goal is to improve life, to improve architecture, […] at* [Architecture] *I would say that the goal is to build something with some meaning, but I think that […] the end result of* [Architecture] *is having […]a building built, and at* [Sustainable] *it's more […] seeing how you can improve the future of workspaces, or maybe […] sustainability, but part of the goals [in Architecture] is also to improve wellbeing– Informant 1, Architecture*

This is further aided by a clear understanding of the additional value that lies in having *Sustainable* associated with *Architecture*. For one, it provides a significant competitive advantage as it is a strong unique selling point. This is evident from growing demand for

Sustainable's services in the market. *Architecture* is looking to expand to new markets, a process which is made easier by promoting *Sustainable* as a part of the package. *Sustainable* is considered *Architecture*'s competitive advantage, making it easier to access new markets.

> *I think that* [Sustainable] *are […] very unique in terms of what they offer. So particularly in* [City] *we've found that their skillset and their knowledge is very, very attractive […]. Promoting* [Architecture] *as a practice, […] we are excellent, and we've got good credentials to back it up. But […] there's probably 200 architectural practices in* [City], *so you're hoping […] that you'll be able to communicate the value of your architectural practice, […] when you're pitching for work. There's nobody like* [Sustainable]. *– Informant 2, Architecture*

5.2 Preserving the innovation capacity over time: what happens when the innovation unit matures?

At the time of the study, *Sustainable* has been in business for more than a decade and have as such generated significant amounts of knowledge and experience. Consequently, it has reached a certain level of maturity, which is increasingly recognized in the market, reflected by growing demand for its services. *Sustainable* mainly engage in two types of activities: research and consultancy. The consultancy business is what generates revenue, whereas the research drives innovation. The changing market conditions means that there is more value to be captured through consultancy work, and *Sustainable* is as such increasing its efforts in that direction. However, this brings with it some challenges. First, the decision to increasingly pursue consultancy work poses a potential threat to the innovation capacity of the company. Second, there is potential to generate more direct business, which can complicate the relationship between the companies.

5.2.1 Explorative/exploitative dilemma

Being a value-driven company, *Sustainable* is not profit-seeking with a primary goal of maximizing monetary value for its stakeholders. Rather, interest in generating profit is to allow growth, creating more capacity and liberty to explore in new directions with an even higher degree of independence. Due to innovation being the sole purpose of its existence, *Sustainabl*e is very much research focused. Historically, this has skewed the focus in favor of exploration activities, at the expense of exploitation activities.

> *[...] we make the money from consultancy, we don't really make money from research. And that's why we are trying to do more consultancy, but that's the goal, I mean we are transitioning from being very, very research focused, and some consultancy, towards becoming more and more consultancy focused. – Informant 7, Sustainable*

As mentioned, there is increasing opportunity for *Sustainable* to capture value in the market, which *Sustainable* is currently responding to. This is reflected through efforts to implement measures to professionalize by creating certain structures within the company and standardize workflows.

> *[…] I would say traditionally,* [Sustainable] *has been very ad hoc. So before […] it was kind of chaotic, and no one quite knew who was doing what and when. So, it felt like a start-up, I guess. And now we are trying to professionalize, to systematize what we do and have more structure and clarity on who's doing what. – Informant 3, Sustainable*

As these measures are intended to shift *Sustainable* towards a more exploitative focus, it becomes necessary to find ways to mitigate the risks of losing the innovation capacity without compromising *Sustainable*'s ability to be financially sustainable.

> *[…] the bigger you get, the more food you need in terms of consultancy, in terms of sort of staying alive, right. And that means that you get less nimble, in a way, less flexible. So that's probably the potential backside. – Informant 6, Sustainable*

Being an innovation company, *Sustainable* has been required to have a certain level of flexibility. As the focus is now shifting, the exploration-exploitation dilemma that has emerged could potentially threaten the flexibility that has been important for innovation thus far. Hence, challenges emerge for how to preserve the innovation capacity One of the informants in *Architecture* explains this in the following way:

[…] the whole reason for [Sustainable] *starting out in the first place, was to give them this kind of freedom over how they operate, they can take their time, and deep dive into topics and really research stuff. When you're a consultancy [...] somebody's saying "I need drawings out in six weeks, you've got two weeks to do your research". There may be a question there about how does that impact on the culture? Is there still the research body and then there's a consultant team within* [Sustainable] *that do the consultancy work? Or is it that everybody does a bit of everything? And if that's the case, how do you preserve that free thinking, when suddenly you become a consultant and you're on a time scale? [...] you become a much more focused entity, and [it] affects the team, and the structure, [etc.]. So that there will be an interesting tension they'll* [Sustainable] *have to balance. – Informant 2, Architecture*

As of now, no formal structures have been implemented to ensure that the innovation capacity is sustained despite the shifting focus. Rather, it has resulted in the emergence of contextual ambidexterity within the overarching structurally ambidextrous solution, shifting the inherent dilemma of balancing exploration and exploitation efforts to the individual. The leaders in *Sustainable* genuinely enjoy engaging in exploratory activities and are therefore not worried that the innovation capacity might be lost. They expect that this personal interest ensures an inherent priority that will be sufficient to sustain the innovation capacity.

In terms of any formal mechanisms; no. There aren't any. And so, it really comes down to myself, I suppose, in order to find that time. – Informant 3, Sustainable

For me personally, [exploring] is also something that I am very happy doing. [...] and therefore, I think the focus is still there, and [...] I think it's more a question of actually being able to prioritize. – Informant 7, Sustainable

Though the desire to continue prioritizing innovation is there, it might become difficult to ensure that the focus on exploring and researching is maintained as *Sustainable* continues to mature and grow. The absence of formal structures thus potentially poses a threat against the innovation capacity, as there is nothing shielding it from being crowded out by exploitative efforts.

5.2.2 Increased complexity in the relationship

Sustainable's development also creates challenges for the relationship and collaboration between the two companies, which is undeniably important. *Sustainable* attributes much of its success thus far to the relationship with *Architecture*. This is particularly because companies

like *Sustainable*, as well as organizations like *Architecture-Sustainable*, are a rarity in the industry.

> *I really believe that it's such a symbiotic relationship between us There is a reason that there aren't many companies like* [Sustainable]. *You know, because it's a very tricky thing in this industry to do that. And so* [Sustainable] *exists and thrive, in no small part because of our relationship with* [Architecture]. – *Informant 3, Sustainable*

Until now, the majority of *Sustainable*'s consultancy work has been a direct result of the relationship with *Architecture*, that has actively included *Sustainable* in projects and pitching it to clients. This has been important for the development of *Sustainable*, as it has created an arena for it to apply its research, as well as build knowledge and experience. *Architecture*'s help has thus played a vital role in *Sustainable* reaching this level of maturity. As a result, more direct business opportunities are appearing, to the degree that *Sustainable* needs to mobilize resources from *Architecture*. This disrupts the existing hierarchy between the companies in terms of who makes the final decisions in projects where *Sustainable* has mobilized *Architecture*, rather than the other way around. This can potentially complicate the relationship between the companies.

> *But, obviously then it just gets a little muddy in terms of, ultimately, who is going to do the design, and who gets the final say in things. – Informant 3, Sustainable*

For *Architecture*, the relationship becomes increasingly important as a result of the growing interest in *Sustainable*'s services. Clients are increasingly demanding the type of knowledge and expertise that *Sustainable* provides. As such, having this knowledge "in-house" is a unique selling point for *Architecture*, providing the opportunity to secure more business.

> *[…] the way I introduce* [Architecture] *it's really more like* [Architecture-Sustainable]*, and nowadays I feel like there is more and more* [Sustainable] *services, and I will say it's like half-half, I most often talk about it as one entity. – Informant 1, Architecture*

On the flip side, *Sustainable* has an increasing desire, need and opportunity to have independent project contracts, as opposed to being an integrated part of *Architecture*'s services. This is partly because many of the collaborations with *Architecture* are typically not financially profitable for *Sustainable*, as it normally contributes to the projects during stages where *Architecture* is not turning a profit. When the market is signaling a willingness to pay

for *Sustainable*'s independent services, it becomes challenging to solve the financial side of things. To continue reaping the synergies, the need for a more formalized financial arrangement between the two companies may emerge.

> *But it can get trickier then, if you are talking about post-competition work, agreeing what sum of money* [Sustainable] *will get. Do we agree a lump sum for that at the beginning? Or do we invoice them on an hourly rate, but at what factor? […] And you know with* [Architecture]*, they just don't have the budget for it, it's just not possible, I wouldn't call it conflict, because that's just life and that's just how it has to be. – Informant 3, Sustainable*

5.2.3 Potential solutions

The members of the organization agree that succeeding with the structure is undeniably difficult in a pragmatic sense. They attribute their successful collaboration thus far to the culture, led by an inherent interest in retaining that capacity for innovation within the frames of the organization.

> *[…] It is also challenging to have two companies in one. […] if you work for each other, what can you expect financially from that? […] How do you make sure that there is an alignment in terms of really practical stuff, that people can actually work on the other company's project when that's needed? So it's […] something that continue developing […]. But I think the important thing is the culture [and inherent interest] to have […] another kind of vehicle in the office that can move in a different way than the rest. That's what drives it, I think. Also from the owner side. – Informant 6, Sustainable*

However, the increasing complexity and dilemma deriving from *Sustainable*'s maturity might warrant a more proactive approach to mitigate the imminent risks. There are two common approaches that have proven successful in solving similar challenges in ambidextrous organizations, namely, to reintegrate the innovation unit back into the established, or spinning it off completely. When asked to consider the possibility of changing the structure of *Architecture-Sustainable*, there was a strong consensus of opposition from all informants, all stating that either approach would be a strategic mistake.

> *[…] that would be a strategic mistake because that would mean losing that edge that comes from being able to say, you know "We are different, it's not just an internal department". – Informant 7, Sustainable*

Reintegration

The option of reintegration has been discussed in the organization but found not to be viable. There is general agreement that reintegration would cause both companies to lose more than they could gain, both individually and as a whole. For one, it would limit the options of who they can work with, both collaboratively and as clients.

> *We've had the discussion, and, once again it's about the name and who are you working with, and just putting it under one name, [...] it will not give us that flexibility. [...] I don't believe we'll be reintegrated in long term. – Informant 5, Architecture*

Reintegrating is considered counterproductive as the separation in itself holds value. It is effective as a unique selling point, because it differentiates *Architecture-Sustainable* from the competition. Integrating *Sustainable* would mean forgoing that, which would also result in loss of business opportunities.

> *By integrating it and killing the* [Sustainable] *name, will eventually also kill some part of our business, because* [Sustainable] *is what differentiates us from other others because we just have this separate entity that has its own autonomy in doing work and research 'cause* [Architecture] *doesn't dictate what* [Sustainable] *is researching on. And we don't dictate what projects they pursue. – Informant 4, Architecture*

An essential advantage of the current structure is that it allows *Sustainable* to attract and retain professionals with different backgrounds that would not thrive within the frames of the traditional architecture business model. Reintegration could potentially compromise this. This would be a huge loss, as the cross-disciplinary approach is one of the key factors that has driven the knowledge generation and ensured new, complex insights unlike what any other companies have achieved.

> *I think that* [Sustainable] *are [freer] to cross certain lines [...] because, it is research, I think that they have to go beyond whatever field they are in the start, but [...], an architectural firm is an architectural firm, the thinking is always linked with that building, and this end result that the client is looking for. – Informant 1, Architecture*

Integration would be disadvantageous for both companies' ability to develop individually. Keeping the separation allows *Sustainable* to explore and identify new business opportunities that often benefit *Architecture*. However, when this is not the case, the financial independence ensures that it is not a drawback.

I think that's where the real value is, if they can both keep developing by themselves, but they kind of allow you to do some type of projects that, by ourselves we would not be able to take on, so they will bring value in when it makes sense, but it will not be a cost if it doesn't make sense. – Informant 5, Architecture

An argument for reintegration is that it could provide certain financial advantages, such as increased cost efficiency, lower transaction costs and economies of scale. However, these advantages are not expected to be enough to offset the losses that would derive from forgoing the current solution, and reintegration is as such not a viable option. Rather, the separation in itself is considered an important prerequisite for the value creation for both companies.

[…] it would streamline some economic things, potentially, but, it would also take away what makes [Sustainable] *work, and what makes* [Sustainable] *add value. – Informant 7, Sustainable*

Spin-off

On the other hand, there is the option of increasing the degree of separation by spinning *Sustainable* off completely. This would potentially professionalize the company more, and uncomplicate certain aspects of the relationship with *Architecture*. Nevertheless, this is not considered a favorable alternative, as it is also likely to result in loss of business opportunities, particularly for *Sustainable*. *Architecture* is highly recognized within its field, and the association thus gives *Sustainable* a certain level of credibility, which could be lost if a complete separation were to happen. *Architecture* has accelerated the "time-to-market" for *Sustainable*, providing a shortcut to market acceptance.

There's a great thing being connected to one of the leading architecture companies of the world. […] That level of trust and professionalism that [Architecture] *has built up is great for us to be able to pitch* [Sustainable] *in at a very high level, on some very […] prestige projects, which we would lose out on if we were just our own company. We could potentially build that portfolio up, over time, but it would be very bootstrappy, and it might take some time – Informant 7, Sustainable*

From *Architecture*'s point of view, *Sustainable* brings a level of expertise to *Architecture*'s services that is increasingly expected in the architecture industry. As such, it is not considered a viable option to increase the distance between the companies, as it would impede *Architecture*'s ability to meet the clients' needs.

> *They* [Sustainable] *are their own entity and they want to go after project on their own. [...] it is required for the architect to provide this kind of thinking. So somehow it's gonna always be a* [Architecture-Sustainable] *scope. [...] maybe there will be a challenge [...] now that it's more common that architect start this kind of research unit, to have that in-house – Informant 1, Architecture*

Maintaining status quo

Based on the responses of informants from both companies, it appears that neither reintegrating nor spinning off are perceived as attractive alternatives for *Architecture-Sustainable*. Rather, it seems the current solution is in fact the optimal one in their context. The association, yet distinct separation, allows *Sustainable* to engage in activities other than purely *Architecture*-related. This independence, enabled by the separation, allows *Sustainable* to explore uninhibitedly. As a result, it has managed to become far more than just a research department for *Architecture,* and is, in fact, recognized for its research externally.

> *I would say it is integrated, but it's owned by the same people you could say, but it has different books. [...] if what you are asking is should it just be like a department in* [Architecture] *that didn't have its own [...] company registration, that was the way it started, and the reason why we changed it [...] is because it professionalized us, [...] we can become more than, let's say a research department for* [Architecture]. *– Informant 6, Sustainable*

When asked about the possible implications for *Architecture* caused by *Sustainable*'s increasingly exploitative focus through upscaling their consultancy business, the response was positive. Rather than being considered a threat to the relationship or innovation capacity, it is seen as posing an opportunity for *Architecture*. The general perception is that it may lead to easier access to certain types of clients and would thus effectively entail business development for both companies.

> *Ideally [...] if we [*Sustainable *and* Architecture*] can do [pre-planning consultancy], then maybe [...] the client would invite us to do the design as well. [...]. So strategically, for us doing the [...] pre-planning [...] will give us hopefully an edge and being invited for the project, so it's like the first step in getting the rest of the project. – Informant 4, Architecture*

The relationship between *Architecture* and *Sustainable* is evidently important, hence, something that they prioritize to preserve. This is reflected in how strategic decisions are made in relation to the current development of the consultancy service. There is a clear understanding that the mutual benefit of the relationship could potentially be impaired if

Sustainable is unable to balance the trade-off deriving from the exploration-exploitation dilemma.

> *I think that the relationship is important. What I think we do have to consider at* [Sustainable]*, looking forward, is how we can find balance in the work that we do. – Informant 3, Sustainable*

As previously mentioned, a key element to the successful collaboration is a high degree of goal alignment. An important part of ensuring this, is maintaining a tight collaboration at the managerial level. Historically, there has been a natural bridging point between the two companies in that the first CEO of *Sustainable* was also a partner in *Architecture*. The CEO has recently left the organization, and the role is being replaced by a management team from *Sustainable*. The new managers have all been at *Sustainable* for several years, and have as such a relationship with *Architecture* from collaborating on projects. However, they have no direct ties to *Architecture*, meaning that the natural bridging point between the companies is not present to the same extent as before. This poses a potential threat of the companies drifting apart. However, it is expected that this development will result in the emergence of more structured formats of collaboration, and implementation of formal structures to ensure continued alignment.

> [CEO] *was also a senior partner in* [Architecture]. *And so one might well have thought that with* [CEO] *leaving that we'd become more independent because we don't have that bridging person. But actually, I think what is going to happen is that Architecture pulls us a little bit closer […] I think that whole question of how close we are, and how much of an overlap there is, is a really critical one, and it's something that has to be negotiated and renegotiated as things change. But at the moment as I see it, the trend is trying not streamline us, but align ourselves… more. – Informant 3, Sustainable*

6. Discussion

This part of the thesis will present the findings derived from the analysis and discuss them in relation to existing literature. The empirical analysis will be used to discuss how success is achieved with the ambidextrous solution in the context of sustainability innovation, particularly regarding the collaboration, and how innovation capacity can be sustained over time. The most important findings will be summarized along with the most central views within the research field of organizational ambidexterity, to highlight the contributions or deviations.

The analysis found that the solution in the case organization differs from the typical solution described in the literature. These differences are argued to be the most important factors contributing to the success of the ambidextrous solution. First, the financial separation alleviates pressure from the established, and ensures the autonomy required to facilitate independent exploration in the innovation unit. Second, the physical co-location contributes to creation of shared culture, which secures goal alignment. Finally, the shared culture in itself facilitates collaboration and knowledge sharing, which are essential to leverage the benefits of the ambidextrous solution. This means that despite being different from what is theoretically recommended, the solution can be considered a success as the companies have managed to build innovation capacity and generate sustainability innovation. Furthermore, they have been able to do so with minimal tension and conflict but have rather developed a successful collaboration. This chapter will go on to discuss the circumstances under which this variation of the ambidextrous solution is favorable.

As this solution is found to be a success, it thus becomes important to maintain its function over time. The second part of the discussion therefore incorporates a temporal perspective. At the time of the study, *Sustainable* was at a crossroads where it might start to move in an increasingly exploitative direction as a result of having reached a certain level of maturity. As such, *Sustainable* is facing the exploration-exploitation dilemma which can potentially lead to loss of innovation capacity and complicate the relationship between the two companies. It thus becomes interesting to examine what the potential risks are going forward, and what *Sustainable* can possibly do to mitigate these, to hopefully preserve the innovative focus that it was created to have.

6.1 What characterizes the ambidextrous solution in the context of sustainability innovation?

The purpose of establishing *Sustainable* was to ensure innovation capacity for *Architecture*, with the intention to drive sustainability innovation. *Sustainable* operates as the structurally separated company with a mandate to focus on innovation and exploration, and thereby contribute to competitive advantage for *Architecture*. This is in line with the well-known purpose of implementing ambidexterity in an organization (Stensaker, 2018). However, the creation of *Sustainable* was also motivated by a desire to promote sustainability in the construction industry in general. The creation of *Sustainable* has allowed *Architecture* to get ahead of its competitors in terms of implementing sustainability innovation in its architecture. Nonetheless, as *Sustainable*'s research is in open source and the company collaborates extensively outside the organizational borders, its existence has contributed to an increased adoption of sustainability focus in the industry. Consequently, the purpose of establishing *Sustainable* can be considered fulfilled.

It is evident that the ambidextrous solution that *Architecture-Sustainable* has implemented has been successful. However, the purpose of implementing organizational ambidexterity in this specific case must be considered. Structural ambidexterity in its traditional form is designed to allow for the innovation unit to compete with and potentially cannibalize the products and/or services of the established (Stensaker, 2018). However, as the rationale behind *Sustainable*'s existence is to innovate for sustainability, it does not directly compete with the services of *Architecture*. In fact, *Sustainable*'s services become complementary, making the conditions for the ambidextrous solution fundamentally different.

The focus thus shifts from ensuring emergence of distinct differentiation between the units, to rather prioritize creation of shared value. Regardless of the rationale for implementing organizational ambidexterity, collaboration and alignment between the units are important for reaping synergies. This is easier to achieve under the conditions of complementarity, as it becomes less contradictory than when combined with competitiveness and cannibalization. This suggests that when the ambidextrous solution is adopted for the purpose of complementing the existing business rather than competing with it, the variation of the organizational solution found in this case may be preferable to the more traditional

ambidextrous solution. The key characteristics of this variation are outlined and discussed in more detail below.

6.1.1 Financial separation alleviates pressure

One of the fundamental characteristics of the structurally ambidextrous solution is that the units are clearly separated (O'Reilly & Tushman, 2016; Stensaker, 2018). In *Architecture-Sustainable*, the organizational separation takes a somewhat different form than what is typical. The companies are structurally separate, showcased through organizational separation with different business scopes and staff. However, they are also financially separated, which is one of the main factors that contributes to alleviating the pressure from *Architecture* towards *Sustainable*. Because they have separate scopes and accounts, they are naturally also separately liable towards clients, even when working on the same projects. However, there is shared financial interest at ownership level. Yet, at the organizational level, *Architecture* does not hold any direct financial stakes in *Sustainable*. Consequently, there are no incentives for *Architecture* to intervene in or pressure *Sustainable*.

6.1.2 Complementarity mitigates risk of cross-contamination

The literature argues that physical separation is the fundamental element that inhibits pressure and contamination from the established, and is as such, strongly recommended when implementing an ambidextrous solution (O'Reilly & Tushman, 2016). As evident above, *Architecture-Sustainable* deviates from this recommendation completely. The companies are co-located and have been since *Sustainable* was established. The study found that complementarity, in combination with the financial separation, is the key element that permits this to be preferable over physical separation. The services and competencies are complementary rather than potentially competing substitutes. As such, there is no risk of cross-contamination, but rather plenty of opportunity for cross-pollination.

This complementarity also removes the threat of cannibalization, which can often cause tension and conflict in ambidextrous organizations (Stensaker, 2018; O'Reilly & Tushman, 2016). Traditionally, one of the benefits of structural ambidexterity is that it allows competition between the services and products of the two units. The rationale behind this is that cannibalization is preferable over competition from external actors (Stensaker, 2018).

Consequently, complementarity of the services contributes towards ensuring goal alignment rather than generating tension, as there is no threat of being outcompeted by the other company.

6.1.3 Co-location facilitates knoweldge sharing and shapes the culture

An essential part of the raison d'être of *Sustainable* is to enrich and develop the practice of *Architecture* and make it, and the construction industry, more sustainable. It is therefore crucial that the knowledge generated in *Sustainable* is transferred. Knowledge sharing is thus a central focus in *Architecture-Sustainable* and is strongly encouraged. There are several formal arenas for knowledge sharing. The effect of organized knowledge sharing is that there is awareness across the companies of what knowledge exists in the organization, and where it lies. This helps to ensure accessibility to the knowledge and competencies within and across the companies, as well as highlighting the value that can be derived from collaboration. When more people have a good overview of the resources that are available, there are higher chances of finding ways of leveraging the knowledge in different contexts and combinations. This way, synergies are created, which the members of the organization agree are important for the value creation, thereby incentivizing collaboration. Co-location thus makes it easier to fulfil the purpose of the ambidextrous solution.

The strong focus on knowledge sharing also has a signaling effect in terms of highlighting what values are important in the organization, thus working as a guiding principle reflected in the culture. As such, most of the knowledge sharing happens organically through continuous interaction and collaboration. This is strongly aided by co-location, which, as mentioned, represents another deviation from the literature. One of the theoretical purposes of the structural and physical separation is to permit the emergence of distinctly different cultures in the two units (Løvik, 2020; O'Reilly & Tushman, 2016). The intention is that the innovation unit may develop a culture that promotes creativity and innovation. Such distinct differences are not present in *Architecture-Sustainable*. The two companies perceive their cultures to be the same, with the only distinct differences being in their methods of working. This is a surprising finding, as the two companies are inherently different, which could have resulted in a cultural separation. Contrary to this, the employees from both organizations highlight the

shared culture resulting from co-location as one of the most important explanations for the successful collaboration.

Some of the shared traits that characterize the culture, as described by the members of the organization, are open communication and constructive discussion. When paired with co-location, which facilitates continuous interaction, transaction-costs become extremely low. Consequently, it is easy to approach members of the other company and discuss different ideas and challenges, with minimal risk of valuable information being lost in translation. The easy access to each other also helps ensure that any misunderstandings or arising questions may be corrected promptly. Poor communication, isolation and the emergence of silos are some of the risks that structurally ambidextrous organizations face (Gibson & Birkinshaw, 2004; Løvik, 2020) However, *Architecture-Sustainable* have successfully mitigated this risk. This makes collaboration easier and more seamless, as miscommunication is rare.

6.1.4 Goal alignment and synergies through shared values and vision

The literature emphasizes the importance of integration through visions and values to ensure success with structural ambidexterity (O'Reilly & Tushman, 2016). This is very much the reality in *Architecture-Sustainable*. The two companies have complementary visions, which act as guiding principles for their work, ensuring synergies deriving from the two companies collaborating. The co-location secures that the open and communicative culture is shared across companies, ensuring shared cultural values. This, combined with the close collaboration, ensures that there is good understanding between the companies and both sides can clearly see that the shared value deriving from collaboration is far superior to what they each can achieve individually. Evidently there is a high degree of goal alignment, as a result of complementarity in visions and shared cultural values.

Another important factor highlighted in the literature to succeed with ambidexterity and ensure goal alignment, is support from management (O'Reilly & Tushman, 2016). It is evident that the management in *Architecture-Sustainable* plays an important role in connecting the two organizations. There is a clear focus among leaders in both companies to encourage and facilitate collaboration, and to see business opportunities across companies. This is instrumental in aligning the goals and strategies of the two companies, which is passed on to

the employees. The management's behavior has a signaling effect, demonstrating priorities, which trickles down through the companies and becomes internalized at an individual level. There is a clear consensus that the synergies created between the companies are important, which encourages collaboration, as well as consideration for the other company.

O'Reilly and Tushman (2016) also argue that the innovation unit should have a high degree of autonomy and independence, meant to aid the new entity's ability to develop something distinctly different. This is thus a prerequisite for success with the ambidextrous solution. Despite not having developed a distinctly different culture, *Sustainable* can be considered highly autonomous, and has as a result been able to explore and innovate uninhibited. Though the purpose of *Sustainable*'s existence is to act as the innovation capacity for *Architecture*, there are no obligations or restrictions placed upon it. *Architecture* does not intervene in how *Sustainable* is run, what types of projects are taken on or what is researched. In fact, *Sustainable* even has the liberty to cooperate with companies that are typically competitors of *Architecture*, as long as it is not in conflict with projects that *Architecture* is interested in. Interestingly, *Sustainable* shows no desire to act on that liberty, as there is a clear perception of the mutual value of preserving this exclusivity. Evidently, there is a presence of shared strategic intention. This, according to the literature, is an important prerequisite to prevent *Sustainable* from being viewed as a threat rather than an ally (O'Reilly & Tushman, 2013).

6.1.5 Conclusion

As has been discussed in this section, *Architecture* and *Sustainable* have implemented an ambidextrous solution that differs from the theoretical recommendation. Still, they have managed to succeed with the solution. This can be explained by the rationale behind the implementation, which is characterized by an ambition to innovate for sustainability. As such, the innovation unit has been created to complement the services of the established, which places different demands on the capabilities of the ambidextrous solution. Collaboration is a prerequisite to reap the synergies, which is facilitated by shared culture. To secure this, co-location rather than physical separation is favorable. Still, it becomes important to allow the innovation unit to explore freely and uninhibitedly, thus why financial independence and autonomy are required, and part of the explanation for the success of the collaboration. The characteristics of the solution are summarized in Table 3 below.

Table 3: Characteristics of the ambidextrous solution in Architecture-Sustainable

Structurally separated (~~geographically~~ or organizationally)	Structural separation to inhibit pressure and cross-contamination is present, but from financial separation rather than geographical distancing.
~~Distinctly different cultures~~ **Shared culture**	Shared culture resulting from co-location enables cross-pollination and knowledge sharing, allowing the companies to fulfill their shared purpose. It also facilitates collaboration and mitigate risk of conflict.
Autonomy	Allows the independent unit to explore freely, independently and uninhibited.
~~Competition and cannibalization~~ **Collaboration and complementarity**	The complementarity of services and competencies enables collaboration rather than competition. As such, the threat of cannibalization is removed.
Support from management	Facilitates inter-organizational collaboration and promotes goal alignment.
Strategic intention and shared values	Removes the perception of the innovative units as a threat and secures goal alignment.

6.2 How to sustain innovation capacity over time

After more than a decade in business, *Sustainable* is now at a point in its development where it has generated significant amounts of knowledge and experience and has thus reached a certain level of maturity. This is increasingly recognized in the market, reflected by growing demand for its services. As such, there is value to be captured, and there are opportunities to scale the consultancy. As a result, *Sustainable* now faces two challenges going forward. For one, scaling the consultancy services will mean increasing the exploitative efforts, which contains an inherent risk of exploitation crowding out exploration. Second, *Sustainable*'s services are in rising demand, increasing the complexity of the relationship with *Architecture*. This puts the relationship under pressure, as the balance of influence shifts, and mandates become less clear than before.

The relationship between the two companies has been especially valuable thus far in terms of facilitating good collaboration, which allows the companies to leverage the solution and create synergies. As such, there are strong incentives to preserve it and mitigate tensions that can potentially lead to conflict. Likewise, innovation is the rationale for the existence of *Sustainable*, and losing the explorative focus would thus be a tragedy for both companies. As such, it becomes important to find a solution for how to mitigate these imminent risks, as failing to do so could be damaging for both parts.

The literature generally identifies three directions of development when ambidextrous organizations find themselves at this stage of maturity: emergence of contextual ambidexterity, reintegration and spin-off. While the latter two are often seen in a "pure" form, it is also possible to apply them in a graded manner, by partially reintegrating or spinning of the innovation unit. The following will discuss the alternatives in the context of the case companies based on the responses from the informants, to examine what solution may be more beneficial in this particular case.

6.2.1 Contextual ambidexterity

Schmidt (2020) finds that as an innovation unit develops over time and reaches maturity, contextual ambidexterity often emerges naturally. This is very much the case in *Sustainable* and is to a large degree a result of the financial separation, which requires *Sustainable* to secure

its own income streams. As evident from the literature, there are some inherent challenges related to contextual ambidexterity. The most prominent one in the case of *Architecture-Sustainable*, is caused by the natural bias towards exploitation, which entails a risk of exploration being crowded out.

Historically, it has not been particularly challenging to maintain a balance between exploration and exploitation despite it being an independent company. However, *Sustainable* is reaching maturity, and the growing market opportunities invite an increased focus on exploitation. This is reflected in the current efforts to increasingly leverage the knowledge and experience that *Sustainable* has developed through its explorative activities, by upscaling the consultancy work. This puts more pressure on contextual ambidexterity as a solution in the company, as it enhances the bias for exploitation. Nonetheless, the management team are not particularly concerned that exploitation will crowd out exploration. They have a strong personal interest in research activities, which they argue will naturally prevent this from happening. However, it may not be enough to secure the innovation capacity in the long term, particularly if or when further changes in leadership occurs.

To ensure that the explorative focus is not lost, it thus becomes important to implement formal structures (Gibson & Birkinshaw, 2004). Such structures might include scheduling to ensure that a minimum amount of time is allocated to exploring, or distribution of responsibilities within the team. As this is currently absent in *Sustainable*, the risk of exploitation crowding out exploration is thus very real. The exploration-exploitation dilemma that is present in *Architecture-Sustainable* thereby poses a threat to its innovation capacity. Additionally, this solution does not necessarily contribute to solving the second part of the problem, namely, how to avoid conflict in the relationship with *Architecture* as the balance of influence shifts. As such, contextual ambidexterity on its own is not a good solution to the problem.

6.2.2 Reintegration

A typical solution according to the literature is to reintegrate the innovation unit back into the established, so that the organization may fully reap the benefits of the new knowledge generated (Gibson & Birkinshaw, 2004). Tushman and O'Reilly (2004) argue that for reintegration to be considered, the innovation unit should have reached a certain degree of legitimacy, strategic viability, and scale. This is descriptive of *Sustainable*'s current situation,

and as such, indicates that reintegration might be a relevant solution. It also seems to be a common solution in practice, as there are several examples of organizations that have adopted this approach.

While this may be sensible in a more traditional setting where the innovation unit competes with the existing products of the established, it is not necessarily the case in the context of sustainability innovation. As evident through the analysis, *Sustainable* is very much a complement to *Architecture*, and its innovations are as such meant to continuously develop and enrich *Architecture*'s practice. This is indeed the case, made possible by the successful collaboration and frequent interaction.

Reintegration would aid the challenge related to the potential of conflict deriving from the shifting balance of influence. This is because reintegration would remove the need for negotiation on the hierarchy of influence, including who has the final say in decisions, and how to divide the profits from external projects. It would also eliminate the exploration-exploitation dilemma, as *Sustainable* would become a pure R&D department within *Architecture*. However, reintegration does not seem like a desired solution.

It is clear that the separation of the companies is an important prerequisite for the success thus far, for several reasons. First, it allows *Sustainable* to explore freely and uninhibited without disturbance from *Architecture*, which is not involved in decisions on what *Sustainable* should research. Second, the separation allows *Sustainable* to attract and retain several types of professionals that would not thrive within the frames of the traditional architecture business model. Third, it enables *Sustainable* to work with several types of organizations that it would not be able to access if it were an internal department of *Architecture*. Finally, certain parts of *Sustainable*'s work, and its general existence, results in direct business opportunities for *Architecture* with clients it would otherwise not be able to access. Consequently, reintegration would damage both companies, as it would most likely reduce the quality of *Sustainable*'s innovations, as well as kill a large part of the total serviceable market for the organization as a whole.

Ultimately, there are more arguments in favor of maintaining the current solution, as this provides the companies with more business opportunities, both individually and collectively. Additionally, the separation allows for a certain professional distance that is considered

beneficial when working on projects, because it allows for a better dynamic. Furthermore, the separation does not impede the companies' ability to leverage the other's resources, because of the shared culture and high degree of goal alignment. As such, the argument that reintegration is necessary to fully reap the benefits of the ambidextrous solution is weak in this setting, as there is little that indicates that more synergies may derive from reintegrating *Sustainable*.

6.2.3 Spin-off

The other traditional approach is to spin the innovation unit off completely. As *Sustainable* now has reached maturity and is increasingly acknowledged as an independent research and consultancy firm, it no longer relies on *Architecture* to the same extent as before. Still, *Sustainable* is somewhat restricted in the activities and companies that it engages in as a result of the relationship to *Architecture* (e.g., collaboration with competitors). As such, a spin-off would eliminate the restrictions placed upon *Sustainable*, as it would mean to increase the separation between the companies by completely dissociating them. Collaboration between the companies may continue to occur. However, it would potentially create a greater professional distance between them as there would be a clearer division. This could decomplicate the relationship as the interaction would be more structured and professionalized. Regardless, it would not in any way solve the exploration-exploitation dilemma for *Sustainable*, and it would reduce the ability to leverage each other's resources, thus weakening the synergies. In fact, it would mean that *Architecture* would lose its innovative arm, which would completely contradict the intention of establishing *Sustainable* in the first place. The informants also emphasize the incredible value the association holds for both companies, as it increases market opportunities for both. Separation would thus mean that a part of the companies' business opportunities would disappear.

6.2.4 Partial reintegration or partial spin off

While it is evident that neither a full reintegration nor spin-off are viable options, a partial reintegration or spin-off could be potential solutions. This could, for example, entail that the consultancy part of *Sustainable* becomes integrated and operated as a business area by *Architecture,* or spun off into an independent company. Either approach would represent an eminent solution to the exploration-exploitation dilemma, as well as preserve the liberty to

explore and retain the cross-disciplinary competence that is important for innovation in *Sustainable*. It might also aid in eliminating some of the conflict-potential between the companies, as *Sustainable* would go back to being primarily research focused and not engage directly with clients to the same degree. However, both approaches would also eliminate an important source of income for *Sustainable*, which, as a financially independent company, is in need of a steady income stream. Removing the consultancy from *Sustainable* would contradict *Sustainable*'s raison d'être, making the alternatives highly unrealistic.
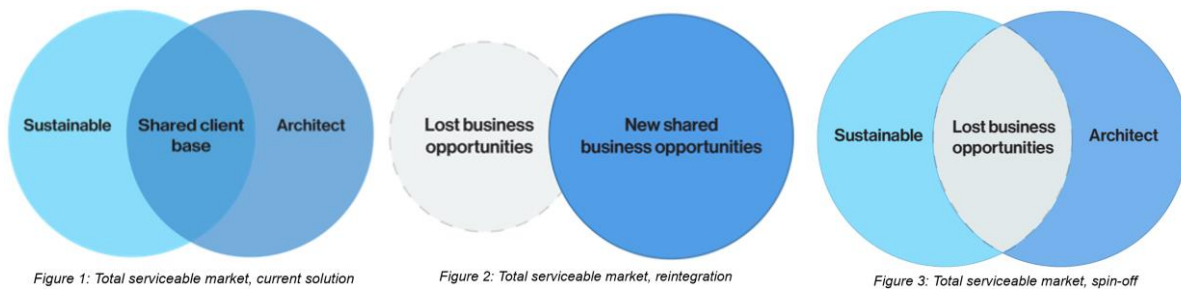
Additionally, the total serviceable market would still be limited with either solution, as it would decrease the access to clients in the same ways that the full approaches would. Furthermore, if the consultancy were to be spun off, there would be increased transaction costs for knowledge transfer, which could lessen the quality of the service. Consequently, the alternatives of partial reintegration or partial spin-off are also suboptimal options to solve the challenges that *Sustainable* is facing.

6.2.5 Implementing structural separation within *Sustainable*

A solution that was suggested by an informant is to bring in additional personnel to take on the responsibility of operating the consultancy service, which would, in essence, create a structurally ambidextrous solution within *Sustainable*. This would allow the current management team to concentrate on the core business, being exploration, while at the same time secure an income stream from consultancy. However, this would require an effort in converting the knowledge that *Sustainable* has generated to a more accessible format. As was evident through the analysis, the knowledge is complex and hard to grasp, and thus requires significant involvement of key personnel from *Sustainable* to implement in *Architecture*'s work. For the consultancy to be viably operated somewhat independently, the knowledge must thus be converted to become more applicable. Structurally separating the consultancy from the innovation activities within the frames of Sustainable would secure both that the innovation capacity is shielded, and that the financial sustainability of the company is not impeded. This solution is thereby a viable option, under the conditions that the knowledge is sufficiently instrumentalized.

6.2.6 Conclusion

Regardless of the approach that is decided on, there is a strong need to shield the innovation capacity. None of the above-mentioned alternatives are actively on the companies' agenda. Rather, they focus on ensuring continued alignment despite the changing circumstances. As such, formal structures to secure this becomes important. Contextual ambidexterity has functioned well in *Sustainable* thus far, but it is now at risk of faltering. This requires that something is done to shield the innovation capacity to avoid that it is lost as exploitative activities ramp up. In conclusion, being associated in the way they are provides greater market impact and – share (Figure 1) than they would have if they were reintegrated (Figure 2). The same applies to the alternative of increasing the separation between the companies through a spin-off (Figure 3).

Figure 1: Total serviceable market, current solution

Figure 2: Total serviceable market, reintegration

Figure 3: Total serviceable market, spin-off

However, the question still remains of how they can maintain the relationship in such a way that the innovation capacity is not weakened, while still allowing *Sustainable* to be profitable. Based on the findings, the answer to this question will be to further strengthen the relationship and align the companies, while at the same time maintain the structural and financial separation. Goal alignment will be important to ensure continued collaboration, and thereby continued creation of synergies from the complementarities that characterize the organization. At the same time, the financial and structural separation are important for the autonomy required to succeed with the ambidextrous solution. The findings thus counter the predominant view that structural ambidexterity is a temporal solution, and that in order to reap the benefits, it is necessary to reintegrate the innovation unit into the established (Friesl, Garreau, & Heracleous, 2019; Siggelkow & Levinthal, 2003). This indicates that neither reintegration nor spin-off may be favorable solutions when the purpose of the ambidextrous solution is to innovate for sustainability.

7. Final remarks

The final section will summarize the findings of the study in relation to relevant literature. Suggestions for future research will be mentioned, as well as recommendations for the practitioner. Finally, the study's limitations will be discussed.

7.1 Summary

The purpose of this study was to explore the research question: *How can established firms succeed with organizational ambidexterity as a driver for sustainability innovation, and how can they maintain innovation capacity over time?*

To best answer the research question, an organization operating with an ambidextrous solution was analyzed through a single case study. The case organization was a European architecture company and its associated innovation company. Seven semi-structured interviews were conducted, with key personnel from both companies. Large amounts of primary data were analyzed in order to achieve in-depth understanding of the topic in question, supplied with secondary data to further enrich the analysis. Existing literature on organizational ambidexterity was applied, providing a theoretical framework for the analysis. This proved useful in order to understand the challenges related to the collaboration between the companies and development of the ambidextrous organization over time.

One of the main challenges with the structurally ambidextrous solution relates to achieving a successful collaboration between the established and the innovation unit over time. The absence of which can often lead to resource starvation and tensions that impede the ability to leverage shared resources and create synergies. These challenges are typically caused by poor communication and distinct cultural differences deriving from physical separation, which can result in silo-creation. This study finds that these challenges are not present in the case organization, and that the main explanations for the successful collaboration are the financial separation that alleviates pressure, combined with physical co-location which leads to shared culture. These are surprising findings, as they are quite paradoxical.

Interestingly, these are also the ways in which the case organization strongly deviates from what the literature recommends. The key explanation as to why these theoretical deviations actually have contributed to the success of the ambidextrous solution, is the purpose behind *Architecture* establishing an innovation capacity in the first place. *Sustainable* was created to drive the sustainable agenda, as opposed to disruptive innovation. As such, the whole rationale behind its existence is based on complementarity, removing the threat of competition and cannibalization that is normally present in the traditional setting. As such, there are other prerequisites that must be in place in order to leverage the intended benefits of the solution.

The physical co-location enables the companies to leverage resources, competencies and best practices from each other, and it facilitates tighter collaboration and frequent interaction. This ultimately results in a shared culture between the two companies, to the point that they feel that they are one entity. This ensures a high degree of goal alignment and focus on shared value creation, which ultimately allows for easier collaboration and thereby improved opportunity to reap synergies from the solution.

The fact that the two companies have no shared financial stake, gives *Sustainable* the freedom to explore independently without the meddling of *Architecture*. This facilitates the autonomy that is required to succeed with an ambidextrous solution. Autonomy and shared culture are conflicting elements in theory, but in this case the presence of both is one of the key factors that ensures a successful collaboration within the organization. The autonomy allows *Sustainable* to immerse in research projects that draw on insights from many different disciplines, and often over extended periods of time, without any client-driven pressure.

The study also finds that the financial separation causes the innovation company to move in the direction of favoring exploitation over exploration as time passes. This creates an increased necessity for balancing the focus between exploration and exploitation to ensure that the capacity for innovation is not compromised. The pressure on the already contextually ambidextrous managerial team thus increases within the structurally ambidextrous solution. The study explored possible solutions to solving the exploration-exploitation dilemma and securing that the innovation capacity is not lost over time. Contrary to what the literature recommends, the study finds that neither full nor partial reintegration or spin-off are favorable alternatives under the circumstances. This study finds that the current solution is perceived to

be the value maximizing solution, under the condition that there are sufficient measures in place to secure strong alignment between the two companies, as well as to shield the innovation capacity in the innovation company.

7.2 Future research

The findings in this study outline a special case of ambidexterity with some important deviations from existing literature in terms of key characteristics. The case in question operates in a creative industry in Europe, and the two companies have complementary services and competencies. It is a possibility that culture- or industry specific aspects might influence the collaboration between the companies. Thus, it would be interesting to study cases with a similar approach to the ambidextrous solution outside of the culture- or industry specific context.

As stated, some of the findings in this study show a different solution than that from the extant literature. This is a result of a fundamentally different rationale for the application of the solution than what is traditionally addressed in the literature. It thus becomes interesting to examine these aspects closer in different contexts, to try and map under what circumstances this alternative approach to the ambidextrous solution is applicable.

The evolution of innovation units over time is not a topic that has been sufficiently addressed in the literature. As such, there is plenty of room for future research to extend this research stream. This case study merely takes a snapshot of the organization at a single point in time, as many case studies do. It would be particularly interesting to follow the same organization and examine how strategic decisions at different points in times affect the collaboration and functioning of the ambidextrous solution.

7.3 Limitations

One of the limitations to this study, is that it has been conducted on a single case. This results in a weakened transferability. The findings must thus be seen within their context, and they are not meant to be generalized. Nevertheless, the context of the study has been described as

precisely as possible, allowing the reader to consider if the findings can be relevant for similar contexts.

Another limitation is that the study tackles a set of relatively unexplored phenomena within organizational ambidexterity, namely the development over time within the innovation unit, and organizational ambidexterity in the context of sustainability innovation. As such, there is limited opportunity to compare the results to findings from other studies and evaluate how representative they are outside this specific context.

Lastly, through the analysis, the study identified three main aspects within the ambidextrous organization that can explain the successful collaboration in the organization in question. This does not, however, eliminate the possibility that there may be other factors that also contribute positively to the collaboration, and ultimately the degree of success of the ambidextrous solution. The study was limited to assessing characteristics of the organization in question, but other factors may also have an impact on the success level of the ambidextrous solution. However, it was not within reach to consider all possible factors due to the scope and time-limit of the thesis.

7.4 Recommendations for the practitioner

While the findings of the study may not be directly generalizable or transferrable to other cases, we believe that there is still some pragmatic value to be drawn from it. As a common challenge with ambidextrous solutions relates to collaboration, it may be useful to consider the mechanisms that were found to facilitate this. Particularly, the aspect of knowledge sharing can be of use. The study found that the mechanisms for knowledge sharing contribute towards ensuring that knowledge diffuses through the organization both directly, and indirectly through the signaling effect that stimulates organic knowledge sharing as well. As such, this can be deemed crucial for increasing the rate of which resources are leveraged while preventing silo-formation, which is, after all, one of the main benefits one seeks to achieve with the solution.

Additionally, it is interesting to consider the context in which the ambidextrous solution is implemented to evaluate whether the variation outlined in this thesis may be more beneficial

compared to the traditional approach. This is particularly relevant for contexts in which competition and cannibalization are not a primary focus or necessity, but rather collaboration and knowledge sharing.

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9. Appendices

9.1 Appendix A1 – Interview guide

About the informant

- Role and background in the company: *What is your role in Architecture? And what is your background? How long have you been part of the company? Has your role in the company changed during your time here?*
- Daily operations: *What does a normal day in your job look like? What kind of activities do you do every day? Are there any activities you would like to spend more time doing?*

Architecture **and Sustainable – Organizational culture/context**

- Culture: *How would you describe the culture in Architecture? And Sustainable? What are the main differences? Why do you think these differences exist?*
- Relationship: *How would you describe the relationship between Sustainable and Architecture? What are the main points of collaboration? Are there any points of challenges? Why/Why not? Formal structures or just the culture/people in general? Why do you think the relationship is the way it is? Have you experienced any points of conflict?*
- Autonomy: *How much autonomy does Sustainable have?*
- Goals: *How would you describe the goals in the companies? What are the goals in Architecture compared to Sustainable?*
- Daily interaction: *To what degree do Sustainable and Architecture depend on each other in day-to-day work?*
- Consideration: *How much do you think Architecture is considered in the projects that Sustainable engage in? How are projects chosen (in Sustainable)? How involved (directly or indirectly) is Architecture in the decision-making process?*
- Knowledge transfer: *How is knowledge transferred between Architecture and Sustainable? What would you say are/have been the most important learnings from [opposite branch]?*

Development over time

- Purpose for establishment: *What was the purpose of establishing Sustainable?*
- Reintegration: *Has this been discussed to integrate Sustainable into Architecture? Why? Why not?*
- Upscaling through a new business area: *What do you see as the main benefits of offering this new service? What do you see as the target market/customer segments? What is the main value proposition for this market/this customer segment?*
- Challenges: *What do you see as potential challenges related to the establishment of the new service? Why? How do you expect that the challenges will be dealt with? Have there been any similar challenges previously? How were they dealt with?*

- Future ambitions: *Do Sustainable have ambitions to grow and expand? If so, how will you secure the capacity for innovation/organizational culture that you have currently?*
- Relationship: *Do you think that the new business model/new service will affect the relationship/collaboration between Sustainable and Architecture? Will it primarily be viewed as an opportunity or a threat by Architecture? Why/How so? Please elaborate.*
- Success factors: *What do you see as the critical success factors? What must be in place in order to succeed?*

To *Architecture* specifically:

- Trade-offs (at an organizational level): *What trade-offs do you think Sustainable will have to make when the new service is implemented, if any? Where will the resources to run the new service come from? Will it compromise any other Sustainable activities? Which ones?*

To Sustainable specifically:

- Increasing exploitative activities: *How do you imagine your day will look like once the new consultancy service is up and running? Does this differ a lot from your current situation? If so, how does it differ?*
- Trade-off regarding innovation capacity: *Will the new service affect your capacity to perform some of the tasks you currently undertake? If so, which ones? How much time would you say you spend doing innovation activities?*

9.2 Appendix A2 - Adapted interview guide

Culture/working culture:
- Are there any differences in working cultures within *Architecture* and *Sustainable*?
- Are there any particular reasons for why you work differently?

Alignment/dependencies/exclusivity:
- Do you think that it is an expectation from *Architecture* that contributes to *Sustainable* becoming more integrated in *Architecture*? Do you think this is an issue for *Sustainable*?
- Which way would you say the dependencies goes? Is *Sustainable* more dependent on *Architecture*, or vice versa? Or is it mutual?
- Who do you think would be more oriented towards upholding that kind of exclusivity?? Do you think this [streamlining/integration] might affect *Sustainable*'s autonomy in any way?

Autonomy:
- [Collaboration with other architecture firms]: are there any limitations to that freedom?

Knowledge sharing/learning points:
- Is there anything that *Sustainable* has innovated/discovered that has surprised you in terms of the value it has had for *Architecture*?
- Are there any formal mechanisms to ensure that knowledge sharing happens?

To Sustainable specifically:
- What type of work do you do besides collaborations with *Architecture*? How does the research work happen?
- How do you [in *Sustainable*] present yourself towards external clients? Are you sort of independent or do you present yourself as part of *Architecture*?
- Do you think that at some point you would potentially feel like *Architecture* holds *Sustainable* back, or limits you?

Securing innovation capacity:
- [New consultancy service] What part of *Sustainable* do you think might be most affected in terms of losing capacity when you start operationalizing the new business area? Do you have any kind of plans for how you will make sure that you maintain the innovative capacity?
- How will the consultancy service be structured within *Sustainable*? Is it a separate team or is it a floating entity that once you have a consultancy project you put a team together and work on it? Or is it like designated people?

9.3 Appendix B – Informed Consent Form

Informed consent form –Participation in RaCE research program

NHH Norwegian School of Economics

Background and aim
This research is a part of the RaCE project at SNF and NHH Norwegian School of Economics. The goal is to examine how established firms respond to and manage radical technology-driven change. We are targeting individuals within established firms that have information on and experience with organizational changes.

What participation in the study entails
We invite you to participate in an interview lasting up to 90 minutes. If you permit, the interview will be recorded and later transcribed. The audio file will be deleted after transcription and the transcribed version will be anonymized.

How is information about you handled?
Personal information will be treated confidentially. Any information that could identify individuals will be removed (eg your name). Transcriptions will be allocated a code instead. Name and contact information, including this form, will be kept separate from any interview data. Only persons participating in the RaCE project at NHH/SNF will have access to the anonymized interviews.

Your firm/organization will be anonymized.

The project will be completed in June 2023.

Voluntary participation
Participating in the project is voluntary. You can withdraw at any time without any further explanation. If you chose to withdraw, all information about you and your interview will be deleted.

Should you have questions regarding the research project, please contact Valentina Båkind (+47) 406 20 690 or Inger Stensaker (+47) 997 92 127 email: inger.stensaker@nhh.no. Should you have other questions please contact: personvernombud@nhh.no

On behalf of SNF/NHH, the Norwegian NSD has approved the procedures followed by the RaCE research project are in accordance with current rules and regulations for handling data.

Your rights
As long as you can be identified in the data material, you have the right to:
- Access in which personal information is registered in your name
- To correct personal information about you
- To have personal information about you deleted
- To receive a copy of your personal information (data portability)

- To file a complaint to personvernombudet or Datatilsynet regarding use of personal information on you

What gives us the right to use personal information about you?
By signing this form you consent to participate in the study.
Informed consent form:

I have received written information and I am willing to participate in this study.

Signature …………………………………. Date……………………………..

Printed

name……………………………………………………………………………………………

…………………………………..

Please return the signed form ahead of your interview to:

valentina.bakind@student.nhh.no or marte.gronli@student.nhh.no

This thesis explores the question of how an established firm successfully can apply the ambidextrous solution in the context of sustainability innovation, and how it can preserve its innovation capacity over time. The qualitative case study is conducted in a European architecture firm and its associated innovation unit which was established to drive sustainability.

The study first identifies the characteristics of the ambidextrous solution in the case company and finds that the solution that is applied represents an alternative approach to the ambidextrous solution. We argue and show how this may be required when the rationale for building innovation capacity is to drive sustainability, and the purpose of the innovation is to complement, rather than compete, with the services of the established.

Secondly, the thesis incorporates a temporal perspective to examine what risks arise as the innovation unit develops over time and reaches maturity. We examine how emerging opportunities may be leveraged, and how challenges may be mitigated to preserve the innovation capacity and well-functioning of the relationship between the two companies. We argue that implementation of formal structures may be necessary to shield the innovation capacity over time, as well as to secure goal and value alignment between the units.

Finally, the study suggests that future research should explore ambidexterity in non-competitive contexts further, as this thesis finds that this alternative approach to the ambidextrous solution may well be better suited to drive innovation when the rationale is value-based (e.g., aiming for sustainability) rather than purely driven by a financial motivation to remain competitive.