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Article

Holistic Innovation Strategy Mix to Build Strategic Resilience: A Case Study Analysis

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Abstract

Strategic resilience refers to an organization's capability to prepare for and minimize the impact of critical developments in dynamic environments. The realization of innovation strategies is widely assumed to be important for building this proactive capability. However, research on this relationship remains limited; in particular, there is a lack of empirical insight into which strategies matter most, how they should be combined, and how they can be effectively implemented. To help fill this research gap, we draw on qualitative data from two case study firms in the German energy industry that employ different innovation strategies to enhance their strategic resilience. Our analysis highlights the importance of combining multiple innovation strategies to achieve strategic resilience (e.g., internal and external strategy combinations, cross-border strategy combinations, and a holistic innovation strategy mix). A holistic innovation strategy mix is key to realizing the full resilience potential, as it gives rise to three resilience-enhancing conditions: inter-organizational diversity, intra-organizational participation, and integrative learning processes. This study and the proposed framework illustrate how innovation strategies and strategic resilience are linked and provide a useful foundation for future research. In addition, the findings offer practical insights—particularly for managers in the energy sector—on how to strengthen strategic resilience through the effective implementation of innovation strategies.

Keywords: strategic resilience; innovation strategies; innovation practices; transformation; renewal
JEL: O36, L20, M14

1. Introduction

Organizations that find themselves in dynamic environments, i.e., due to political regulations, new technological developments, major geopolitical or health crises, and demand shifts, need to take proactive steps to ensure long-term survival (Somers, 2009). In particular, taking future-oriented actions can help firms change in a non-crisis manner, develop appropriate resources, and rethink their organization and processes. These actions can also help firms to scan the environment, recognize critical developments, and prepare for them (Casprini et al., 2023; Duchek, 2020; Hamel and Välikangas, 2003). In research, this proactive capability has been referred to as strategic resilience since 2003. However, research in this area is still in its early stages, and intensification is recommended (Raetze et al., 2022).

One proactive action of a firm in a dynamic environment is to implement innovation strategies that facilitate continuous renewal and transformation (Kuratko et al., 2014; Peus et al., 2009). So far, only a few scholars have established links between innovation strategies and strategic resilience (Morais-Storz et al., 2018; Ratten, 2023; Reinmoeller and van Baardwijk, 2005). However, these studies have not provided any in-depth information on which innovation strategies lead to which resilience outcomes, how they are implemented in practice, and which combination of strategies is most effective for achieving strategic resilience. Thus, the purpose of our research is to open this black box and answer the following main research question: How do firms achieve strategic resilience through innovation strategies? This includes the following secondary research questions: Which innovation strategies are particularly useful? Which underlying practices help to realize these innovation strategies? Which strategy combinations are especially important for renewing a firm's organization and processes?

To achieve this goal, we have applied a case study analysis using qualitative data from two large, established German corporations that implement different innovation strategies to continuously renew and transform their business model. More precisely, we collected data from these two firms in the form of primary data (i.e., interviews) and secondary data (i.e., websites, press releases, project presentations, informal conversations, and annual reports). With this study, we are able to make a valuable contribution

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to resilience research by providing empirical insights into how organizations can use innovation strategies to enhance their strategic resilience (Hepfer and Lawrence, 2022; Hillmann and Guenther, 2021). We also contribute to research on organizational resilience practices and capabilities (e.g., Duchek, 2020; Lengnick-Hall et al., 2011) by identifying twelve practices that especially strengthen anticipation and preparation capabilities. Furthermore, we help to align entrepreneurial and intrapreneurial action in the context of resilience management (Ratten, 2023) by showing how different innovation strategies need to be dynamically balanced to enhance strategic resilience (Reinmoeller and van Baardwijk, 2005).

Our findings are summarized in a framework that shows how innovation strategies and strategic resilience are linked and that can serve as a useful basis for future research. In addition, the study provides important practical insights, especially for the management level in the energy sector, on how to increase strategic resilience by considering different innovation strategies and successfully implementing them.

2. Theoretical Background

2.1 Strategic Resilience: The Proactive Perspective of Resilience

The emergence of major global crises, including the 2001 terrorist attacks in New York City and the 2008/2009 economic and financial crisis, has elevated the importance of resilience as a concept in organizational and management research (Linnenluecke, 2017). This concept became very important especially during the COVID-19 pandemic and is now recognized as a pivotal theme (e.g., Hillmann and Guenther, 2021). However, the definitions of resilience still remain ambiguous. Recent studies show that the understanding of resilience in organization and management is influenced by five disciplinary perspectives including ecology, engineering, safety and reliability, positive psychology and organizational development, and strategy (e.g., Hillmann, 2021). Consequently, studies explore resilience outcomes at different levels of analysis (e.g., individual, team, and organization), largely looking at them in isolation from one another and using a variety of organizational settings (Raetze et al., 2021).

Focusing on the organizational level outcomes, most researchers define resilience as the reactive ability of an organization to respond successfully to adverse events (e.g., Horne and Orr, 1998). This includes different things: maintaining an acceptable level of functioning during crises (e.g., Robert, 2010), adapting during turbulent times (Burnard and Bhamra, 2011), and recovering from setbacks (e.g., Boin and van Eeten, 2013). Only a few researchers focus on the proactive aspects of resilience, meaning the ability to identify potential risks and to ensure an organization's preparedness for adverse events (e.g., Somers, 2009). Our paper clearly focuses on the second perspective: the proactive aspects of resilience and the precursor of all manifestations of reactive resilience (Casprini et al., 2023). This kind of resilience has also been studied and introduced under the concept of strategic resilience (Hamel and Välikangas, 2003), including the idea of continuous renewal and transformation (Välikangas, 2016). Strategic resilience, despite being introduced in 2003, still represents an emerging research domain where scholars have recently emphasized the need for increased research attention (Raetze et al., 2022).

Previous research suggests that the main building blocks of strategic resilience are resilience capabilities and resilience resources (Duchek, 2020; Hillmann and Guenther, 2021; Lengnick-Hall and Beck, 2005). Resilience capabilities facilitate resilient actions, whereas resilience resources are essential for developing and implementing these capabilities (e.g., Lengnick-Hall and Beck, 2005). Research also points to anticipation and preparation as the main strategic resilience capabilities (Duchek, 2020; Somers, 2009). Anticipation comprises the abilities to scan the environment, predict and prevent critical developments, and adapt proactively (Hepfer and Lawrence, 2022). Preparation means abilities such as implementing a crisis management system, developing crisis plans, or educating employees to better handle inevitable crises in the future in order to minimize their impact (Casprini et al., 2023; Hamel and Välikangas, 2003; Raetze et al., 2021). Furthermore, both anticipation and preparation capabilities include taking advantage of experience by learning and empowering from mistakes (e.g., Bartuseviciene et al., 2024).

A firm's knowledge base functions as a pivotal strategic resilience resource (Duchek, 2020), governing the direction of knowledge search efforts (Rosenkopf and Nerkar, 2001) and operating as both an enabler and limiter in the process of acquiring new knowledge (Cohen and Levinthal, 1990). The latter is part of a firm's absorptive capacity, which also includes the assimilation, transformation, and exploitation of knowledge (Vlačić et al., 2019). Especially a broad and diverse knowledge base can help to anticipate a large variety of internal and external changes. Furthermore, relationships as well as financial and human capital are crucial for effective anticipation and preparation (Duchek, 2020). Members of an organization need relationships within and outside the organization to acquire new knowledge that can be useful for anticipating future critical developments (Lengnick-Hall et al., 2011). Financial and human resources are necessary to prepare for future events, such as developing crisis plans, taking proactive measures, and disseminating solutions throughout the organization (Duchek, 2020). These insights from research are summarized in Fig. 1 in a new conceptual framework for strategic resilience.

In our study, we especially focus on innovation strategies as a means of developing resilience capabilities and resources to achieve the continuous renewal and transfor-

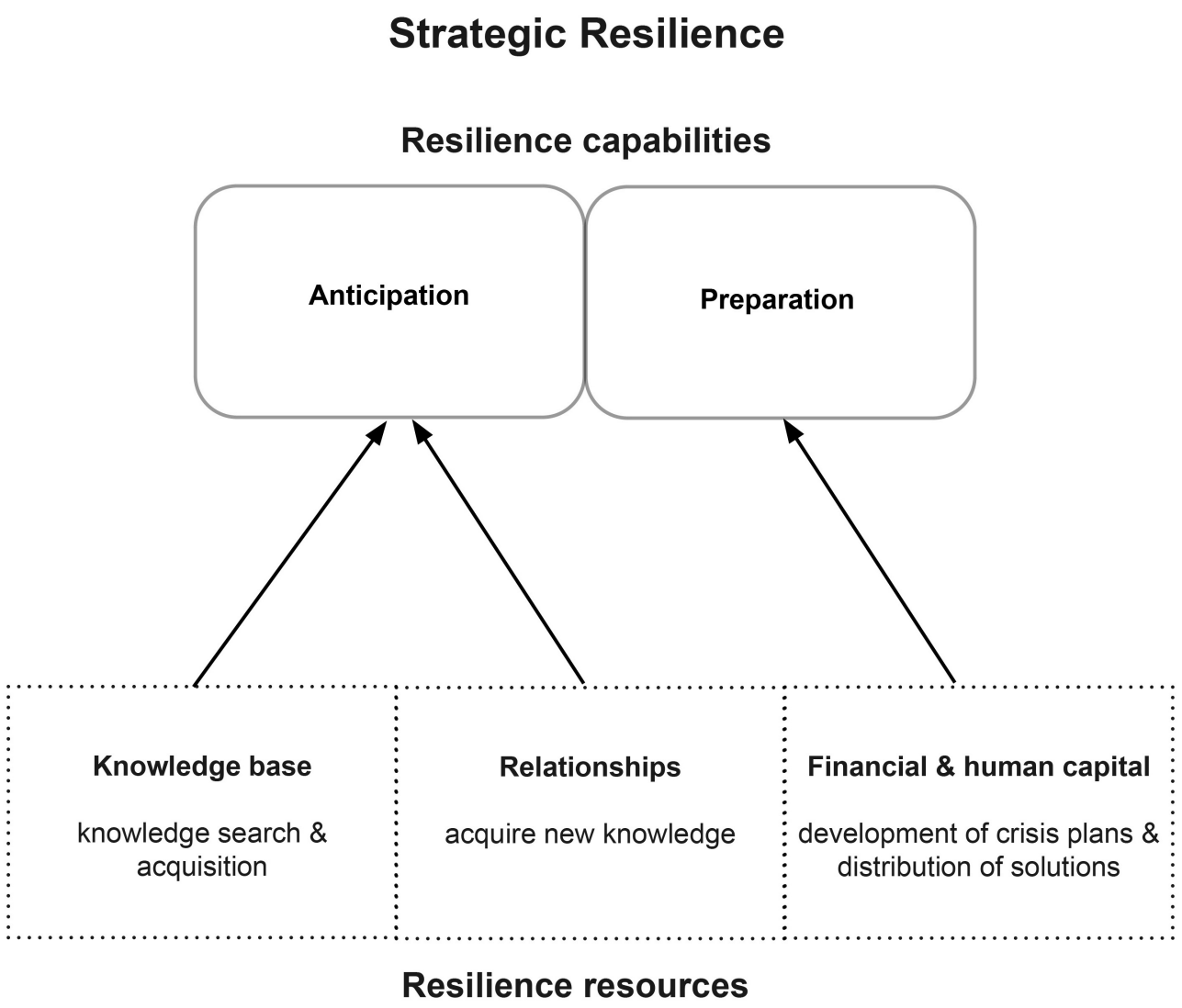

Fig. 1. Main building blocks of strategic resilience.

mation of a firm in a dynamic environment. In this sense, strategic resilience can also be understood as a dynamic capability, meaning "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997).

2.2 Innovation Strategy, Entrepreneurship, and Intrapreneurship

To successfully drive innovation efforts, organizations need a clear innovation strategy (Pisano, 2015; Varadarajan, 2018). Pisano (2015) emphasizes that innovation strategies consist of coherent and mutually reinforcing actions or behaviors aimed at renewing or expanding products, processes, and practices. In this context, innovation strategies can be differentiated along several dimensions. A fundamental distinction is made between closed approaches, which rely primarily on internal resources and capabilities, and open approaches, which actively integrate external actors and knowledge (e.g., Tidd and Bessant, 2018). Moreover, innovation strategies can be situated at the strategic level, focusing on long-term positioning and capability building, or at the operational level, implementing concrete measures and structures (e.g., Schilling, 2020). The alignment between strategic intent and operational execution is crucial for innovation success, becoming particularly evident in intrapreneurship and entrepreneurship approaches. Entrepreneurial actions encompass the acquisition of external ventures and a strategic orientation towards unknown innovation activities (Kuratko et al., 2014). Complementarily, intrapreneurship represents practices that accelerate innovation by tapping into employees' entrepreneurial capabilities, characterized by self-motivation, proactiveness, and willingness to take risks and exploit networks and new opportunities (e.g., Farrukh et al., 2022; Kuratko et al., 1990).

In particular, a firm's overall innovation strategy promotes alignment among different groups, clarifies goals and priorities, and helps focus innovation efforts (Pisano, 2015).

This also acknowledges that linking innovation strategy to resilience management could lead to new insights and further theory development (Ratten, 2023).

2.3 The Link Between Innovation Strategies and Strategic Resilience

Innovation has already been linked to resilience research, with scholars particularly discussing innovation strategies as important means for proactive change (e.g., Morais-Storz et al., 2018; Reinmoeller and van Baardwijk, 2005; Xia et al., 2024). As one of the first scholars, Reinmoeller and van Baardwijk (2005) link innovation strategies and strategic resilience. In doing so, they develop a framework discussing four organizational innovation strategies. The authors focus on knowledge management and exploration as strategies that use internal resources, while cooperation and entrepreneurship are strategies that use external resources to enhance an organization's strategic resilience (Reinmoeller and van Baardwijk, 2005). Furthermore, Morais-Storz et al. (2018) focus on entrepreneurship as one specific innovation strategy to develop strategic resilience and reveal that an organization's managers need to have an (innovative) foresight attitude to identify opportunities for reinventing the organizational strategy, creating organizational value, and thus differentiating the organization from its competitors. In particular, they make strategic resilience "measurable" through the organizational aspects of adaptive capacity and absorptive capacity (Morais-Storz et al., 2018). Using survey data, Xia et al. (2024) are able to show that entrepreneurial orientation and business model innovation foster (strategic) resilience.

However, these studies do not provide an overall view of innovation strategies and their resilience-enhancing dynamics. This includes questions such as which innovation strategies lead to which resilience outcomes, how they are implemented in practice, and which combination of strategies is most effective for achieving strategic resilience. Our study uses the conceptual framework of strategic resilience as a starting point and addresses the need for deeper empirical exploration, as highlighted by Linnenluecke (2017) among others. Based on a case study analysis, our research provides empirical insights that enhance our understanding of how organizations can effectively implement strategic resilience (Hepfer and Lawrence, 2022).

3. Methodology

3.1 Case Study Research Design

To achieve our research goals, we chose the qualitative case study method because it allows for exploring new topic areas and developing theory (Eisenhardt, 1989; Gioia et al., 2013; Yin, 2014). Thereby, case study research does not strictly prescribe a specific number of cases. While employing between four and ten cases is recommended to enhance content validity and generalizability (Eisenhardt, 2021), single case studies are particularly useful for gaining new knowledge and in-depth insights into complex phenomena (e.g., Eisenhardt, 2021; Weick, 1993). We were able to identify two cases that promised such deep insights into the relationship between innovation strategies and strategic resilience, and we therefore decided to combine the strength of a single case study with the advantage of a second case that supplements and confirms the individual findings. More precisely, we focus on two firms operating in the German energy sector, which is facing a dynamic environment triggered by political decisions and regulations in the energy policy transition, as well as recent energy uncertainties. Therefore, firms in this industry have to show continuous renewal and innovation potential (e.g., Nordensvärd and Urban, 2015). Furthermore, the firms are located in a region in Germany characterized by a distinct history and are thus operating in the same innovation ecosystem. This makes them comparable to an extent that no other firm can offer (Stake, 2008).

Our study considers the two energy firms as units of analysis (case entities) that were purposely selected because they have the ability to extend existing theory by providing typical examples (Eisenhardt, 1989; Yin, 2014). The selection of these two companies was based on several key criteria: Both organizations are well-established, large corporations with operational histories dating back to 1990, situated within a historically distinctive German region that provides a shared innovation ecosystem. While this common regional context creates strategic links between the firms, they maintain distinct business focuses that position them as complementary rather than competing entities. Additionally, both companies are actively pursuing innovation strategies as pathways to strategic resilience, systematically diversifying their core business portfolios through new ventures and innovative initiatives to anticipate dynamic transformations in the energy sector. Our analysis of secondary data revealed that since 2018, company 1 (CO-1) has established three new business areas, expanded one existing division, and integrated 13 innovative topics across four business areas. Similarly, company 2 (CO-2) has developed a new business area since 2015, continuously extended another division, and incorporated six innovative topics across two business areas. Despite the quantitative differences, the comparability of both cases remains valid because they demonstrate remarkably similar innovation strategies and practices.

3.2 Data Collection and Analysis

As a first step, we collected publicly available secondary data about the two firms (e.g., independent press and media reports, websites, firm presentations, and annual accounts). These data provided the basis for a preliminary analysis of the cases, their business data, and their approaches to implementing innovation strategies. Based on this analysis, we started to collect primary data by conducting 14 in-depth interviews within the two firms.

Table 1. Overview of primary and most relevant secondary data.

Affiliation case	Number of data	Acronym data	Data description
Primary data CO-1	6	CO-1-I1; CO-1-I2; CO-1-I3; CO-1-I4; CO-1-I5; CO-1-I6	Interview, innovation manager (1); interview, head of corporate development (1); interview, head of a new strategy field (3); interview, innovation project employee and coordinator (1)
Most relevant secondary data CO-1	7	IK1; IK2; IK3; PP1; PM1; PM2; PM3	Informal conversation, coach start-up accelerator SI-1 (1); informal conversation, innovation manager of CO-1 (1); informal conversation, CEO of start-up SU-O (1); project presentation, think tank DIGITAL (1); press release, cooperation between university A and CO-1 (1); press release, cooperation start-up SU-E and CO-1 (1); press release, structural change (1)
Primary data CO-2	8	CO-2-I1; CO-2-I2; CO-2-I3; CO-2-I4; CO-2-I5; CO-2-I6; CO-2-I7; CO-2-I8	Interview, head of corporate development (1); interview, head of strategy and implementation (1); interview, innovation manager externally (2); interview, innovation manager internally (2); interview, head of business development of a new strategy field (1); interview, innovation project employee and coordinator (1)
Most relevant secondary data CO-2	7	IK1; IK4; IK5; IK6; PM4; PM5; PM6	Informal conversation, coach start-up accelerator SI-1 (1); informal conversation, CEO of start-up SU-AI (1); informal conversation, innovation manager externally (2); press release, event with start-ups (1); press release, strategy update CO-2 PLUS (1); press release, cooperation of CO-1 and SI-1 (1)

Note: (1), (2), and (3) refer to the amount of data; CEO, Chief Executive Officer; CO-1, company 1; CO-2, company 2; CO-1-I1, interview partner 1 of company 1; IK, informal conversation; PM, press release; SI-1, start-up intermediary 1; SU-O, Start-up O; SU-E, Start-up E; SU-AI, Start-up AI.

We applied the snowball sampling method (Marcus et al., 2017) to recruit participants from various hierarchical levels and functional areas, focusing not on their formal position but on their experience and involvement in the transformation and innovation process. This included individuals from the strategic level, such as business developers and innovation managers, as well as from the operational level, such as team leaders and project employees. The data was collected by an open and narrative approach, being flexible to choose the appropriate focus of the interview depending on the interviewee's position and experiences (Hollway and Jefferson, 2008). An interview guideline with semi-open questions was developed and applied during the interviews. The 14 in-depth interviews lasted between 35 and 80 minutes (average 65 minutes), were digitally recorded and transcribed word-by-word according to the rules of content-semantic transcription and extended content-semantic transcription (Dresing and Pehl, 2017). Informal conversations during the data collection at the two firms' offices, as well as additional informal conversations with other stakeholders, press releases, and project presentations, were added as secondary data to the set of data (for an overview see Table 1). For this paper, all names have been changed to protect anonymity.

Data analysis was conducted according to qualitative content analysis (Miles and Huberman, 1994) using MAXQDA 2018, VERBI Software (Berlin, Germany) and Excel from Microsoft 365, Microsoft Corporation Headquarters (Redmond, Washington, USA). In our case, the analysis did not follow a linear process but can be divided into five main steps. In the first step, we reviewed the 14 interviews with the established firms and used elements of grounded theory to find recurring patterns (Corbin and Strauss, 1990). In the second step, we broke the complexity of the data down into 1st order concepts, which we then organized into 2nd order themes (innovation practices) and 1st round aggregated dimensions (innovation strategies) following the logic of Gioia et al. (2013) (for more details, see Fig. 2).

In the third step, we analyzed interdependencies among the silo innovation strategies and distilled significant strategy combinations (2nd round aggregated dimensions). In the fourth step, we complemented the primary data with informal conversations within the firms and their ecosystems, as well as press releases, and project presentations, to explore the firms' innovation strategies and their combinations more deeply. We followed the principle of triangulation by including additional data with the primary data (Eisenhardt, 1989). Furthermore, the results were compared to previous findings of strategic resilience research to establish links to resilience conditions that emerge from the holistic innovation strategy mix (i.e., inter-organizational diversity, intra-organizational participation, and integrative learning processes) (Gioia et al., 2013). Finally, in a fifth step, a framework was developed that specifically addresses the relationships between innovation strategies, their combinations, and strategic resilience.

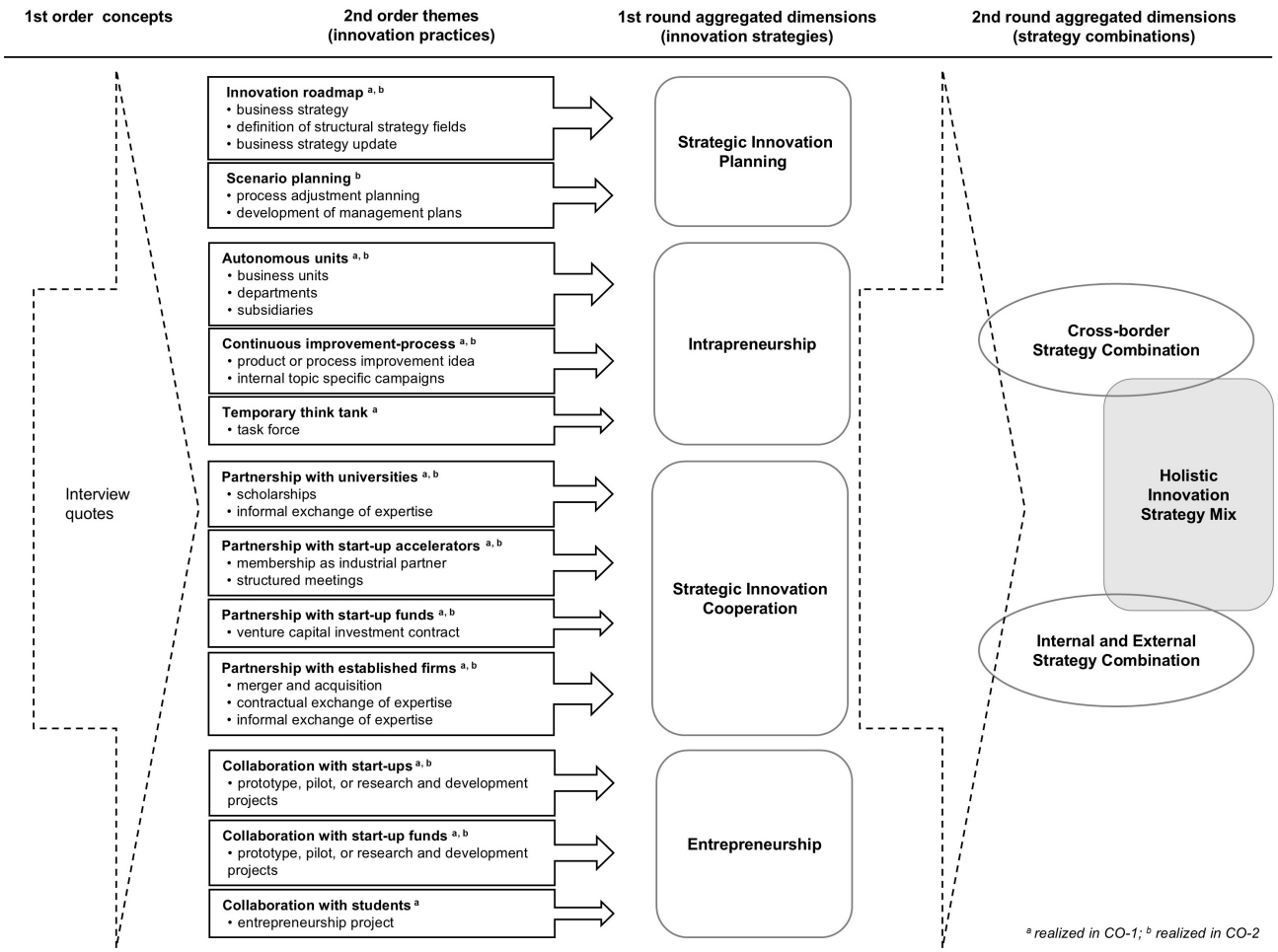

Fig. 2. Data structure and analysis of the realization of innovation strategies.

4. Results

4.1 Pathway to a Holistic Innovation Strategy Mix

The data analysis showed us that the firms' innovation strategies can be divided into external and internal perspectives and that the strategies' implementation differs according to the implementation level, i.e., management or business-unit level. Based on these distinctions, we were able to create a matrix of four silo innovation strategies: (1) strategic innovation planning, (2) intrapreneurship, (3) strategic innovation cooperation, and (4) entrepreneurship (see Fig. 3). These strategies are realized through various practices, as we show in section 4.2. A deeper analysis of these strategies and practices revealed that they often coexist, overlap, and thus have various interdependencies. This led us to the understanding that firms realize three different strategy combinations: (1) an internal or external strategy combination, (2) a cross-border strategy combination, and (3) a holistic innovation strategy mix, which we explain in section 4.3. Comparing our findings with previous strategic resilience research helps us to establish three resilience-enhancing conditions that emerge from the holistic innovation strategy mix (i.e., inter-organizational diversity, intra-organizational participation, and integrative learning processes) and will be discussed in section 4.4.

4.2 Silo Innovation Strategies and Underlying Practices

The four silo innovation strategies are realized through practices at different levels within the organization and are based on different resources (see Fig. 3).

Strategic innovation planning includes practices that take place at the management level and focus on internal resources. One central practice is the definition of a business, structure, and process-related innovation roadmap. Our cases show that the management level of both firms develops a future-oriented business strategy and, at the same time, defines new structural fields within the firm to realize this strategy.

> *And by the end of 2018, these business fields had been defined. At the beginning, there were a few more, then they were checked once again and then a few things were eliminated. And I think we have now identified about 16 new strategy fields. (CO-1-I3:18)*

The data of CO-2 shows that this practice also includes the execution of a business strategy update five years after

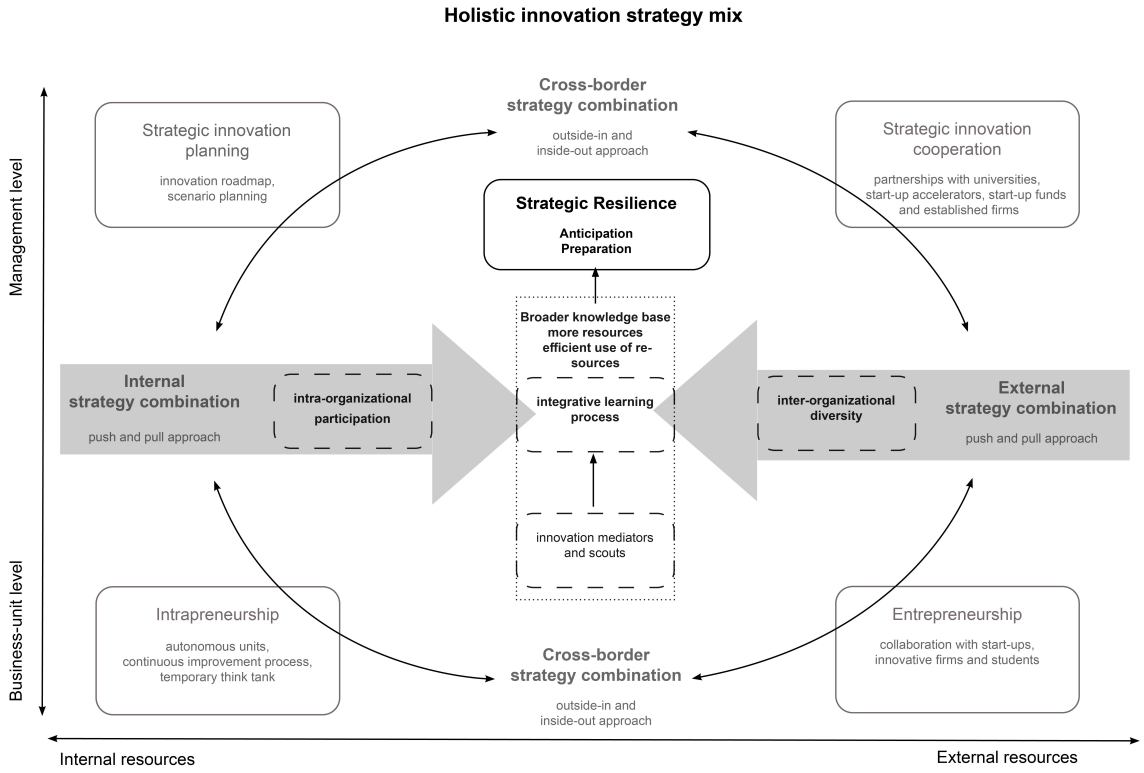

Fig. 3. Innovation strategy realization and combinations to enhance strategic resilience.

the initial roadmap was decided, in order to evaluate the newly structured strategy fields. For example, the corporate management level decided to dismantle two of the new strategy fields. The main reason was that further investments would have had to be made and it would have taken too much time for the unit to become profitable.

Moreover, the data showed that scenario planning is realized as another practice for future risk avoidance. To accompany the business-related renewal in CO-2, six different stress scenarios were planned at the management level. During this scenario planning, potential (innovation) measures were developed that could be applied in such cases. One of the stress scenarios established by CO-2 actually occurred with the COVID-19 pandemic in 2019 and the previously developed management plans could be quickly used and implemented in the business units.

> *We look at where we stand in terms of strategy, and what is the environment doing, what are the others doing? What are the megatrends about? We also said, "Let's create a stress test." What could have been done in a stress test? We [...] could pull together a small group of people [...], and run various scenarios through our strategy. (CO-2-I3:38)*

Intrapreneurship as a second strategy is understood as the use of internal (human) resources to create new ideas and develop innovations at the business-unit level. This means that structures are adjusted and autonomous units are developed in the form of business units, departments, and subsidiaries to allow for innovative and flexible actions. In our two cases, it was mainly a matter of establishing the new strategy fields derived from the innovation roadmap CO-1 PLUS and CO-2 PLUS and developing them in autonomous units. As a result, CO-1 implemented most of the new strategy fields as legally dependent divisions within the firm, whereas CO-2 legally separated all new strategy fields by establishing subsidiaries.

> *At the same time, in 2018 we identified the first new business units with a project, CO-1 PLUS, which operate in an independent organizational unit and have a member of the management board as their sponsor, and report directly to the management board. And they do not carry out their activities within the organization but are already separated to ensure the degree of freedom and the possibilities for development for these new business areas. (CO-1-I2:22)*

The strategic aim of these separated and autonomous units is that they have more agile and flexible structures than traditional business units do. For example, both firms assign the new strategy fields directly to one member of the management board to reduce hierarchies and achieve faster decision-making processes.

Additionally, the data of both firms show that a continuous improvement process is realized. The management thereby encourages employees to contribute their knowledge, either without a specific focus or in pre-determined subject areas. In the first case, if an employee has an idea for

a process improvement, then he or she can submit this idea. A commission decides whether the idea should be pursued further. If the rating is positive, an official innovation process starts, and an innovation team is compiled. In the second case, the management level defines an open question in a pre-defined topic area and an internal topic-specific campaign is organized by disseminating this question in various operational units related to these topics. Ideas can then be submitted by employees of these units, and a committee selects the ideas with the greatest potential.

> *There were some very good ideas. Mainly, of course, from the operational area because the colleagues deal with this intensively. At some point, we launched a campaign […] with various ideas […]. And there we had three ideas; they were also pitched in front of a committee and then they were selected and developed further. (CO-2-I2:36)*

Furthermore, temporary think tanks are a practice for realizing the intrapreneurship strategy. For example, CO-1 had set up a think tank for the topic of digitization to provide support for internal innovation creation. Such a think tank is usually a 12- to 18-month temporary task force that unites a variety of business-unit employees. In this case, a core team of 10 people developed over 200 ideas, using 20% of their working time. The team members directly reported to the CEO (Chief Executive Officer), but without formal requirements.

> *Another goal of the think tank DIGITAL is to offer an example of a different, more agile form of communication and work structure and thus accelerate the cultural change in the firm. (PP1: p.10, 1698–1892)*

Strategic innovation cooperation includes practices at the management level with an external perspective. This strategy particularly focuses on the structured exploitation of external knowledge and resources. The data of both cases reveal that the firms focus on strategic partnerships with universities, start-up accelerators, start-up funds, and established firms (mainly in transformation processes). Especially universities, start-up funds, and start-up accelerators help to provide access to new actors and new innovative topics.

Different practices are used in strategic partnerships with universities. On the one hand, the established firms have contractual relationships with universities because they act as sponsors of student scholarships or work in third-party-funded projects on diverse research topics.

On the other hand, informal relationships exist between the established firms and representatives of different structural units of universities (e.g., chairs, institutes, projects). These results, for example, in workshops with those units and possibly other firms that focus on innovation creation, or they obtain impulses for new ideas in informal conversations.

> *Today, there are […] innovation management lectures at universities, at University C or at University F, where it is also specifically about founding experiences or a hypothetical founding that you run through. And that's where interesting ideas always come about and where you then also pick up things. (CO-2-I6:14)*

Strategic partnerships with start-up accelerators mostly consist of a contractual membership as an industrial partner. Industrial partners have the right to submit requests at an early stage on topics in which they see the most potential in their market, and the accelerators then select suitable start-ups. The CO-1 and CO-2 cases showed that the innovation departments have a partnership with the start-up accelerator SI-1 and are allowed to express their wishes twice a year, each time for the new 6-month start-up class. At the beginning of each start-up class, there is usually a workshop held where the new start-ups are introduced to the industry partners and matches between those parties take place. This first workshop is followed by individual agreements between the matching partners.

> *SI-1 is an accelerator that accompanies up to eight start-ups every six months to turn an idea into a mature product or service that can be offered on the market. […] And the objective of this cooperation with SI-1 is to further develop these ideas together with partners from industry during the six-month period in order to actually have a service or product that can be offered on the market. (CO-1-I2:36)*

Our data indicated that contractual partnerships with start-up funds are another way to realize the innovation cooperation strategy. These funds show a broad range of investments in start-ups in different industries and are actively managed. For the firms, this means a diversified input of venture capital, risk minimization, as well as entering start-ups at an early stage, picking up new ideas, and gaining financial return in the case of a start-up's successful market entry.

> *We have now switched to this fund solution, which allows us to diversify risk through this fund, because it is more selective and we cannot put an infinite amount of money into it. (CO-2-I1:40)*

Furthermore, partnerships with other established firms are an important practice. First, our cases show that these can include mergers and acquisitions. In particular, our cases help to develop the business models of interesting firms if they reveal potential for entering other segments. Later, our cases buy and add them to their corporation structures and sell them if they are no longer interesting. Second, an informal exchange of expertise with established firms in transformation processes from various sectors takes place.

Entrepreneurship here is understood as external innovation practices that are executed at the business-unit level. That includes creating new products, services, structures, or processes by collaborating with external partners such

as start-ups or innovative firms in temporary organizations (i.e., projects).

Both firms mainly focus on projects with start-ups by entering dyadic or multi-partner project collaborations. The focus of those projects are diversified and related to different topics in the energy sector. However, we can cluster them according to different project types, e.g., prototype, pilot, or research and development projects. In all these projects, established firms and start-ups seem to act as a unit by combining their competencies and implementing measures together.

> *The start-up SU-O is developing this process with the established firm EF-K and university A, and CO-1 is providing components that can then be modified or produced according to this process, and CO-1 is paying for the products. (CO-1-I4:16)*

CO-1 shows that innovation creation also takes place with other innovative firms, e.g., in projects with other established firms to identify interesting new business fields in their region.

> *And together with the initiative EIL, we are also in the process of finding new fields of business in the context of co-innovations together with partners from the region as part of a business alliance. (CO-1-I2:8)*

4.3 Three Ways of Innovation Strategy Combination

A deeper analysis of the four silo innovation strategies and their underlying practices showed that they are almost never realized in isolation but are dynamically combined. For example, different levels are involved, or different resources come together. Based on these insights, we were able to identify three different combinations of innovation strategies (see Fig. 3):

Internal or external strategy combination refers to the fact that both the management and the business-unit level contribute to the implementation of innovation. The levels work closely together: The management level creates the framework, and the business-unit level creates new innovative solutions.

An *internal strategy combination* is present when intra-organizational practices at the management and business-unit levels are linked and exploited. This can be shown by the examples that both firms had defined new strategy fields at the corporate management level and had the employees of the business-unit level build, rebuild, or dismantle them. For example, the firms' management used strategy updates to identify innovative topics, which are concretized and implemented within relatively autonomous units. More specifically, in 2017, the CO-1 management decided to advance the field of digitization and established a new temporary think tank. Within this think tank, employees organized themselves in an agile way without specification from the management and used diverse innovation and creativity methods. Regular transfer meetings of the employees working in the think tank and the corporate management are used to discuss interesting developments.

> *An important selection criterion [for the team membership in the think tank DIGITAL] was, among other things, the competence and affinity for digital topics. In addition, the team in the think tank should cover a wide range of job profiles and departments. (PP1: p.4, 2034–2557)*

An *external strategy combination* takes place when inter-organizational practices at the management level and the business-unit level are combined. For example, the two cases pursue such combined practices in the following ways: On the one hand, they use strategic cooperations with intermediaries to realize projects with start-ups. On the other hand, they use projects with start-ups as a starting point before investing venture capital.

> *Of course, it would be nice if money came back, but we actually say that the start-ups we invest in and look at should be involved in some kind of cooperation within the firm. Whether it is a collaboration or just a single project or whatever. (CO-2-I5:6)*

These examples show that the push and the pull approach are balanced by combining internal or external innovation practices between the representatives of the management and business-unit levels (see for an overview Fig. 3). In doing so, the firms' corporate management level provides a roadmap/clear strategy vision from the top down to the business-unit level (push approach). However, to build up and implement the roadmap, structures, and processes, the employees of the business unit level are encouraged to give input and feedback (pull approach).

Cross-border strategy combinations consist of linking internal practices with external ones or vice versa. These internal/external or external/internal practices combinations take place at the management level or at the business-unit level. Both levels can pursue either an outside-in or inside-out approach (see for an overview Fig. 3).

Our two cases show the following ways for taking an outside-in approach: First, both firms indicate that they affiliated services that are innovative for them on the business-unit level. CO-1 added sales expertise, and CO-2 added consulting expertise for a new strategy field from business-unit employees of another firm.

> *This is also new territory for our firm. Of course, we suddenly have to deal with people like salespeople. We dont want to build up a sales force ourselves with 30 people. (CO-1-I3:6)*

Second, CO-1 participated in an innovation seminar with students at a university in which representatives of the management level of the firm presented their current firm-related challenges to the students. The students then developed new business ideas in teams over the course of a

semester and finally pitched the ideas to a committee, which evaluated the ideas and chose a winning team. The winning idea was further pursued in collaboration with the students.

An example of an inside-out approach is when the firm's management level decided to sell new business units or resell merged firms on the market that had been declared no longer relevant.

> *And we were still able to sell [the subsidiary Q], at least, what we created up to that point. Not that we made any profit, but we were still able to sell it. That already shows that the market is actually good. (CO-2-I5:52)*

A holistic innovation strategy mix occurs when the above-mentioned strategy combinations coincide. The strategy process then bounces back and forth between internal and external practices at both the management and business-unit level. This realizes a push-and-pull approach, the exchange of internal and external resources and knowledge, as well as a cross-border combination of intra- and inter-organizational practices.

> *But that has to be seen as a complete process, even if it's probably not that easy. There are two aspects in this innovation process: On the one hand, there is this internal world, but of course there are also ideas coming in from the outside, and you have to link them together, and that works. (CO-2-I6:6)*

Both firms started the holistic strategy mix as a linear process internally by defining an innovation roadmap at the corporate management level. New strategy fields were defined at that level and implemented by the representatives of the business units as separate entities. In both firms, an innovation unit was also established as one of these strategy fields. Especially this unit plays a key role in the holistic innovation strategy mix because it is often involved in bridging the gap between management and business-unit levels as well as internal and external innovation practices. The innovation managers act as innovation mediators and scouts between the different levels and resources. The data show that this function is performed by one representative in CO-1 and four representatives in CO-2.

> *And that is why the goal of our colleagues in the innovation unit is to establish this pull principle at CO-2. That in turn means asking about needs and seeing what moves the group. What are the issues now? And what will be the issues later? How can the innovation managers help with their know-how, their network, and the start-ups they know? (CO-2-I6:22)*

Our cases showed that this means the innovation unit employees collect business-related problems and topics in structured meetings from the new strategy fields. In CO-1, this process is implemented by having the innovation department and corporate development employees meet with all representatives (decision makers and subject-specific employees) of a single new strategy field in one meeting. In CO-2 they realize this process by having the decision makers of those entities collect problems and topics from the other business-unit employees and then holding periodic meetings between the innovation scouts and decision makers of the new strategy fields. Then all the problems and topics are reported to the corporate management board.

> *There are twelve or thirteen teams, and there are always periodic meetings in these teams where the team members talk about it, where someone from corporate management is also present and from corporate development. (CO-1-I4:72)*

In particular, the innovation unit employees look at whether topics overlap or can be combined internally, or whether knowledge and resources have to be scouted from outside. In the latter case, the innovation department acts as an intersection between internal and external resources. This means they provide external innovative ideas from start-ups, initiatives, and firms to those responsible within the units and strategy fields. Our cases showed that both innovation units engaged in building strategic partnerships with start-up funds as well as start-up accelerators as one of the first steps. This helped to gain more expertise in new solutions and trends in the market at the management level and to identify external partners for realizing projects or campaigns at the business-unit level.

4.4 Resilience-Enhancing Conditions Through a Holistic Innovation Strategy Mix

Our analysis suggests that the holistic innovation strategy mix offers the most resilience potential. More precisely, three resilience-enhancing conditions emerge (see Fig. 3) that are essential to building anticipation and preparation capabilities and thus support firms in achieving strategic resilience:

Inter-organizational diversity: Our analysis showed that when firms collaborate with external partners, they increase the variety of innovation and ideas available to the firms. This diversity contributes to the anticipation of potentially threatening developments and the preparation for them (Duchek, 2020). Balancing and combining all four innovation strategies enhances a firm's ability to absorb external knowledge and resources as well as to link them to internal knowledge and skills (Stock et al., 2001; Suzuki, 2015). In particular, diversified skills, personalities, and perspectives of different employees enhance creativity and idea creation and strengthen problem-solving ability (Ely and Roberts, 2008). Our interviews showed that the innovation unit employees in particular play an important role in strengthening a firm's knowledge base: They support an open approach to innovation and function as institutionally implemented innovation mediators and scouts. They help to transfer diversified skills, personalities, and perspectives into further innovation solutions and thus function as gatekeepers at the interface between a firm and its environment as well as within a firm (Cohen and Levinthal, 1990). And

they engage in identifying locations of valuable resources and developing a personal network that ensures access to these resources (Casanueva and Gallego, 2010).

Intra-organizational participation: Our cases showed that when innovation strategies are implemented individually, innovative products, services, and business models can be created but are eventually not accepted to a wide extent throughout the whole corporation. Thus, a collaboration between leaders and all hierarchical levels from the beginning seems to be useful (e.g., Lehner, 2004).

Especially the leadership's dialogue on strategic innovation planning and strategic innovation cooperation—cascading from corporate management to middle management and the business-unit employees—promotes acceptance (Peus et al., 2009). Furthermore, the business unit employees' feedback and its consideration by the management level help to identify internal needs and create more ideas (de Oliveira Teixeira and Werther, 2013). As the interviewees indicate, this collaboration creates agility by flattening hierarchies through dialogic exchanges. In particular, agility promotes the proactive capability to scan, make sense of, and act quickly in the case of environmental shifts, along with the ability to relocate resources wherever needed to support these actions (McCann et al., 2009). Thus, agility can lead to a more efficient use of resources and knowledge in an organization and broaden the knowledge base. In particular, dialogic communication and agility can help to intensify the adaptation of corporation-wide structures, processes, and culture.

Integrative learning processes: The two cases showed that during the implementation of a holistic innovation strategy mix, managers and leaders receive a variety of impulses to question the routines of the organization through inter-organizational diversity and intra-organizational participation. Consequentially, reflection, unlearning, and new learning processes take place and adjustments can be derived (e.g., Duchek, 2020; Lehner, 2004; Robert, 2010). In particular, intra-organizational participation plays an important role in the exchange of knowledge between units/levels and a continuous learning at all organizational levels (e.g., Duchek, 2020; Gressgård and Hansen, 2015). The analysis revealed that many lessons learned resulted from failure, for example, unsuccessful establishments of subsidiaries as internal spin-offs (e.g., Bartuseviciene et al., 2024). After a new strategy update, CO-2 decided that two internal spin-off subsidiaries would take too much time and budget until they finally added value to the group. Nevertheless, lessons learned were derived, for example, how to make new subsidiaries more agile by speeding up accounting processes. In this context, long-term learning took place, expanding the firm's knowledge base and strengthening its anticipation capacity (Duchek, 2020).

5. Discussion

Using a qualitative case study analysis, we can substantiate the conceptual idea of Reinmoeller and van Baardwijk (2005) that the implementation of external and internal innovation strategies is a proactive measure for firms to achieve strategic resilience. Beyond that, we can show that these silo innovation strategies are implemented at different organizational levels (i.e., management and business-unit level). In particular, the demonstration that these strategies are implemented through different practices facilitates a better understanding of the intrapreneurial and entrepreneurial actions and specific conditions of management decisions and measures in the pursuit of innovation strategies (Covin and Miles, 2007). Moreover, by linking these findings to strategic resilience, we augment the depth and contemporality of what has been known in innovation strategy research (Kuratko et al., 2014; Ratten, 2023).

From resilience research, we already know that organizational practices play an essential role in building a firm's resilience (e.g., Duchek, 2020; Lengnick-Hall et al., 2011). Our study provides empirical insight into practices that help organization members to develop personal and collective action competencies (Hillmann and Guenther, 2021; Lengnick-Hall et al., 2011). Especially by helping to understand practices that strengthen organizational preparation capabilities in the sense of business model transformation, we can support former findings of Xia et al. (2024). However, we expand that research showing that both preparation and anticipation capabilities are developed through a wide range of practices underlying the different innovation strategies, not only at the management level but also at the business-unit level.

Our research further reveals that firms do not implement innovation strategies and their underlying practices in isolation but rather in different and complex combinations. By introducing internal and external strategy combinations, cross-border strategy combinations, and the holistic innovation strategy mix, we provide insights into how innovation strategies can be dynamically balanced to enhance strategic resilience (Reinmoeller and van Baardwijk, 2005). First, during internal and external strategy combinations, the representatives of management and business-unit levels closely work together. Our findings show that a push-and-pull approach between these different representatives fosters openness and communication within the organization, which are important prerequisites in shaping resilience (e.g., Duchek, 2020; Lengnick-Hall et al., 2011). Second, with our findings on cross-border strategy combinations, we provide an explanation of how organizational exploitation and exploration work across organizational levels. In this context, former resilience research shows that an openness to ideas and the annexation of resources—the outside-in approach—is a prerequisite for change and developing resilience (Carmeli and Markman, 2011; Linnenluecke, 2017). Additionally, an inside-out approach is realized to

manage the current business effectively. This means that firms master different strategic orientations (i.e., manage the current innovation business and search for new business opportunities) and thus become ambidextrous (Carmeli and Markman, 2011; Colberg, 2022; de Oliveira Teixeira and Werther, 2013).

According to our analysis, a holistic innovation strategy mix yields three resilience-enhancing conditions that are essential to developing anticipation and preparation capabilities. We thereby confirm previous conceptual studies explaining that resilience resources are needed to develop the two resilience capabilities (Duchek, 2020; Lengnick-Hall et al., 2011). First, with respect to the condition of inter-organizational diversity, we support research that suggests that diversity plays an important role in enhancing resilience (Duchek et al., 2020; Sutcliffe and Vogus, 2003). We also show that both internal and external diversified skills, personalities, and perspectives must be considered (Ely and Roberts, 2008). Thus, a firm's absorptive capacity plays a central role (Vlačić et al., 2019), which includes the ability to absorb external knowledge and resources and to link them to internal knowledge and skills. We therefore give an explanation of how a firms' knowledge base is broadened and align our findings with former studies (Duchek et al., 2020; Sutcliffe and Vogus, 2003).

Second, our findings on the condition of intra-organizational participation show that a push-and-pull approach is essential to aligning the efficient collaboration of different intra-organizational functions and provides insights into how such processes between the management and business unit levels can occur (e.g., Hepfer and Lawrence, 2022; Lehner, 2004). These findings also enrich research on entrepreneurship and intrapreneurship, as it is shown how the potential of non-managerial employees can be activated from the strategic level (Soltanifar et al., 2023). In this context, Weick (1993) refers to respectful interaction as one source leading to sensemaking within an organization (Weick et al., 2005), which is an important prerequisite for resilience (e.g., Linnenluecke et al., 2012). Furthermore, this condition aligns with the understanding that agility and resilience need to be considered jointly (McCann et al., 2009).

Third, the condition of integrative learning processes underlines that resilience outcomes should not only be measured in terms of a firm's performance, but that failed combinations of practices also lead to resilience through continuous learning at all organizational levels (e.g., Duchek, 2020; Gressgård and Hansen, 2015). In particular, we show that knowledge exchange between units/levels is an important predictor of the perceived capability to learn from mistakes (Gressgård and Hansen, 2015). Our cases support the fact that long-term learning can take place and that this learning expands the knowledge base of a firm, which in turn acts as a main antecedent of anticipation capabilities (Duchek, 2020).

6. Conclusions, Limitations, and Implications

This paper provides an in-depth insight into the black box of strategic resilience by providing a qualitative empirical study on the relationship between innovation strategies and strategic resilience. We show four innovation strategies that can be considered particularly important: strategic innovation planning, intrapreneurship, strategic innovation cooperation, and entrepreneurship, how these strategies can be implemented through twelve underlying practices, and how the strategies can be meaningfully combined: internal or external strategy combination, cross-border strategy combination, and holistic innovation strategy mix. In doing so, we answer our main research question: How do firms achieve strategic resilience through innovation strategies? As a main contribution, we illustrate the link between innovation strategies and strategic resilience and point to three central resilience conditions resulting from a holistic innovation strategy mix: inter-organizational diversity, intra-organizational participation, and integrative learning processes. This study thereby enriches innovation strategy research by redefining the understanding of entrepreneurial and intrapreneurial actions related to resilience management.

Using two cases of German energy firms, we provide useful insights for managers in that sector on realizing innovation strategies, aligning actions at the strategic and business unit levels, and thus achieving an organizational renewal effect. In doing so, we also answer the question of which strategy combinations are especially important to renewing a firm's organization and processes. This study demonstrates that merely implementing individual innovation measures is not sufficient; instead, managers should actively pursue a holistic combination of internal and external innovation strategies. The institutionalization of innovation mediators and scouts can serve as effective connections between corporate management, business units, and external partners, enabling targeted knowledge transfer and alignment of innovation needs. In addition, structured bottom-up participation and feedback should be encouraged in order to foster learning across an organization and help translate local knowledge into strategic innovation impulses. Furthermore, transparent and dialogic communication across all levels can support mutual understanding, reduce resistance to change, and enable faster and more adaptive responses to challenges.

While our study provides new scientific and practical insights, it also has some limitations. First, the relatively small sample size does not allow for generalization of our findings. However, this is inherent to the nature of exploratory case studies, which prioritize depth over breadth. Our goal was to generate new insights into the connection between innovation strategies and strategic resilience, which are currently missing in the literature. Second, although our research design allows for a nuanced understanding of the phenomenon under investigation, it

does not permit precise quantification of the degree of resilience generated by specific combinations of innovation strategies. However, our data analysis indicates that cumulative resilience effects (e.g., learning, transparency, and a broader knowledge base) emerge when a holistic innovation strategy mix is applied. In contrast, isolated strategies tend to yield only limited, specific effects. Consequently, the proposed framework in Fig. 3 provides a valuable basis for future research on the resilience effects of the identified innovation strategies and strategy combinations. There is a great potential for quantitative empirical studies employing larger samples and replication across varied contexts to enhance the robustness of our conclusions. Such studies can also help to control for factors such as the size of a business and the interference of resource differences. In this context, recognized measuring instruments from innovation and corporate entrepreneurship research might be helpful. Moreover, qualitative studies could provide deeper insights into specific strategies and their outcomes over time, for example, by using ethnographical methods.

Finally, we deliberately chose two comparable cases as representative examples of large, transformative, and innovative energy companies in a specific German region, demonstrating the parallels between them. By using two cases instead of a single case, we aimed to broaden the transferability of our conclusions. And although we focused on a specific industry, we assume that established firms from other contexts can also benefit from our findings and use them as a guide, particularly since the identified strategies are not directly tied to specific technologies, industries, or types of crises. However, it remains to be tested and verified whether sector-specific strategies and underlying practices exist in other contexts and whether our findings can be extended.

Availability of Data and Materials

The datasets used or analyzed during the current study are available from the corresponding author on reasonable request.

Author Contributions

AKD and SD designed the research study. AKD performed the research. AKD analyzed the data. Both authors wrote the manuscript. Both authors contributed to editorial changes in the manuscript. Both authors read and approved the final manuscript. Both authors have participated sufficiently in the work, and have agreed to be accountable for all aspects of the work.

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Conflicts of Interest

The authors declare no conflicts of interest.

References

Bartuseviciene I, Butkus M, Schiuma G. Modelling organizational resilience structure: insights to assess resilience integrating bounce-back and bounce-forward. European Journal of Innovation Management. 2024; 27: 153–169. https://doi.org/10.1108/ejim-04-2022-0180

Boin A, van Eeten MJG. The Resilient Organization. Public Management Review. 2013; 15: 429–445. https://doi.org/10.1080/14719037.2013.769856

Burnard K, Bhamra R. Organisational resilience: development of a conceptual framework for organisational responses. International Journal of Production Research. 2011; 49: 5581–5599. https://doi.org/10.1080/00207543.2011.563827

Carmeli A, Markman GD. Capture, governance, and resilience: strategy implications from the history of Rome. Strategic Management Journal. 2011; 32: 322–341. https://doi.org/10.1002/smj.880

Casanueva C, Gallego Á. Social Capital and Innovation: An Intra-departmental Perspective. Management Revue. 2010; 21: 135–154. https://doi.org/10.5771/0935-9915-2010-2-135

Casprini E, Pucci T, Zanni L. From growth goals to proactive organizational resilience: first evidence in women-led and non-women-led Italian wineries. Review of Managerial Science. 2023; 17: 1017–1036. https://doi.org/10.1007/s11846-022-00557-1

Cohen WM, Levinthal DA. Absorptive Capacity: A New Perspective on Learning and Innovation. Administrative Science Quarterly. 1990; 35: 128. https://doi.org/10.2307/2393553

Colberg T. Organisational Resilience: Creating Ambidexterity in Strategic and Operational Resilience. In Stankevičienė J, Skvarciany V 12th International Scientific Conference "Business and Management 2022". Lithuania. Vilnius Gediminas Technical University. 2022.

Corbin JM, Strauss A. Grounded theory research: Procedures, canons, and evaluative criteria. Qualitative Sociology. 1990; 13: 3–21. https://doi.org/10.1007/bf00988593

Covin JG, Miles MP. Strategic Use of Corporate Venturing. Entrepreneurship Theory and Practice. 2007; 31: 183–207. https://doi.org/10.1111/j.1540-6520.2007.00169.x

de Oliveira Teixeira E, Werther WB, Jr. Resilience: Continuous renewal of competitive advantages. Business Horizons. 2013; 56: 333–342. https://doi.org/10.1016/j.bushor.2013.01.009

Dresing T, Pehl T. Praxisbuch Interview, Transkription & Analyse: Anleitungen und Regelsysteme für qualitativ

Forschende. 7th edn. Dr. Dresing & Pehl GmbH: Marburg, Germany. 2017.

Duchek S. Organizational resilience: a capability-based conceptualization. Business Research. 2020; 13: 215–246. https://doi.org/10.1007/s40685-019-0085-7

Duchek S, Raetze S, Scheuch I. The role of diversity in organizational resilience: a theoretical framework. Business Research. 2020; 13: 387–423. https://doi.org/10.1007/s40685-019-0084-8

Eisenhardt KM. Building Theories from Case Study Research. The Academy of Management Review. 1989; 14: 532. https://doi.org/10.5465/AMR.1989.4308385

Eisenhardt KM. What is the Eisenhardt Method, really? Strategic Organization. 2021; 19: 147–160. https://doi.org/10.1177/1476127020982866

Ely RJ, Roberts LM. Shifting frames in team-diversity research: From difference to relationships. In Brief AP (eds.) Diversity at Work (pp. 175–201). Cambridge University Press: Cambridge, UK. 2008. https://doi.org/10.1017/CBO9780511753725.008

Farrukh M, Meng F, Raza A. Believe they can succeed, and they will: intrapreneurial behavior and leadership. European Journal of Innovation Management. 2022; 25: 661–679. https://doi.org/10.1108/ejim-10-2020-0393

Gioia DA, Corley KG, Hamilton AL. Seeking Qualitative Rigor in Inductive Research. Organizational Research Methods. 2013; 16: 15–31. https://doi.org/10.1177/1094428112452151

Gressgård LJ, Hansen K. Knowledge exchange and learning from failures in distributed environments: The role of contractor relationship management and work characteristics. Reliability Engineering & System Safety. 2015; 133: 167–175. https://doi.org/10.1016/j.ress.2014.09.010

Hamel G, Välikangas L. The quest for resilience. Harvard Business Review. 2003; 81: 52–63, 131.

Hepfer M, Lawrence TB. The Heterogeneity of Organizational Resilience: Exploring functional, operational and strategic resilience. Organization Theory. 2022; 3. https://doi.org/10.1177/26317877221074701

Hillmann J. Disciplines of organizational resilience: contributions, critiques, and future research avenues. Review of Managerial Science. 2021; 15: 879–936. https://doi.org/10.1007/s11846-020-00384-2

Hillmann J, Guenther E. Organizational Resilience: A Valuable Construct for Management Research? International Journal of Management Reviews. 2021; 23: 7–44. https://doi.org/10.1111/ijmr.12239

Hollway W, Jefferson T. The Free Association Narrative Interview Method. In Given L (ed.) The SAGE Encyclopedia of Qualitative Research Methods (pp. 296–315). Sage Publications: Thousand Oaks, CA. 2008.

Horne JF, Orr JE. Assessing behaviors that create resilient organizations. Employment Relations Today. 1998; 24: 29–39.

Kuratko DF, Montagno RV, Hornsby JS. Developing an Intrapreneurial Assessment Instrument for an Effective Corporate Entrepreneurial Environment. Strategic Management Journal. 1990; 11: 49–58.

Kuratko DF, Morris MH, Covin JG. Corporate Entrepreneurship. In Cooper CL, Cooper C (eds.) Wiley encyclopedia of management (pp. 1–5). Wiley: Chichester, West Sussex. 2014.

Lehner J. Strategy Implementation Tactics as Response to Organizational, Strategic, and Environmental Imperatives. Management Revue. 2004; 15: 460–480. https://doi.org/10.5771/0935-9915-2004-4-460

Lengnick-Hall CA, Beck TE. Adaptive Fit Versus Robust Transformation: How Organizations Respond to Environmental Change. Journal of Management. 2005; 31: 738–757. https://doi.org/10.1177/0149206305279367

Lengnick-Hall CA, Beck TE, Lengnick-Hall ML. Developing a capacity for organizational resilience through strategic human resource management. Human Resource Management Review. 2011; 21: 243–255. https://doi.org/10.1016/j.hrmr.2010.07.001

Linnenluecke MK. Resilience in Business and Management Research: A Review of Influential Publications and a Research Agenda. International Journal of Management Reviews. 2017; 19: 4–30. https://doi.org/10.1111/ijmr.12076

Linnenluecke MK, Griffiths A, Winn M. Extreme Weather Events and the Critical Importance of Anticipatory Adaptation and Organizational Resilience in Responding to Impacts. Business Strategy and the Environment. 2012; 21: 17–32. https://doi.org/10.1002/bse.708

Marcus B, Weigelt O, Hergert J, Gurt J, Gelléri P. The use of snowball sampling for multi source organizational research: Some cause for concern. Personnel Psychology. 2017; 70: 635–673. https://doi.org/10.1111/peps.12169

McCann J, Selsky JW, Lee J. Building agility, resilience and performance in turbulent environments. People and Strategy. 2009; 32: 44–51.

Miles MB, Huberman AM. Qualitative Data Analysis: An Expanded Sourcebook. Sage Publications: Thousand Oaks, CA. 1994.

Morais-Storz M, Stoud Platou R, Berild Norheim K. Innovation and metamorphosis towards strategic resilience. International Journal of Entrepreneurial Behavior & Research. 2018; 24: 1181–1199. https://doi.org/10.1108/ijebr-11-2016-0369

Nordensvärd J, Urban F. The stuttering energy transition in Germany: Wind energy policy and feed-in tariff lock-in. Energy Policy. 2015; 82: 156–165. https://doi.org/10.1016/j.enpol.2015.03.009

Peus C, Frey D, Gerkhardt M, Fischer P, Traut-Mattausch E. Leading and Managing Organizational Change Initiatives. Management Revue. 2009; 20: 158–175. https://doi.org/10.5771/0935-9915-2009-2-158

Pisano G. You need an innovation strategy. Harvard Business Review. 2015; 93: 44–54.

Raetze S, Duchek S, Maynard MT, Kirkman BL. Resilience in Organizations: An Integrative Multilevel Review and Edito-

rial Introduction. Group & Organization Management. 2021; 46: 607–656. https://doi.org/10.1177/10596011211032129

Raetze S, Duchek S, Maynard MT, Wohlgemuth M. Resilience in organization-related research: An integrative conceptual review across disciplines and levels of analysis. The Journal of Applied Psychology. 2022; 107: 867–897. https://doi.org/10.1037/apl0000952

Ratten V. Entrepreneurship: Definitions, opportunities, challenges, and future directions. Global Business and Organizational Excellence. 2023; 42: 79–90. https://doi.org/10.1002/joe.22217

Reinmoeller P, van Baardwijk N. The link between diversity and resilience. MIT Sloan Management Review. 2005; 46: 61–65.

Robert B. Organizational Resilience - Concepts and evaluation Method. Presse de l'École Polytechnique de Montréal: Montréal. 2010.

Rosenkopf L, Nerkar A. Beyond local search: boundary-spanning, exploration, and impact in the optical disk industry. Strategic Management Journal. 2001; 22: 287–306. https://doi.org/10.1002/smj.160

Schilling MA. Strategic Management Of Technological Innovation. 6th edn. McGraw-Hill Education: Columbus, OH, USA. 2020.

Soltanifar M, Hughes M, O'Connor G, Covin JG, Roijakkers N. Unlocking the potential of non-managerial employees in corporate entrepreneurship: a systematic review and research agenda. International Journal of Entrepreneurial Behavior & Research. 2023; 29: 206–240. https://doi.org/10.1108/ijebr-04-2022-0333

Somers S. Measuring Resilience Potential: An Adaptive Strategy for Organizational Crisis Planning. Journal of Contingencies and Crisis Management. 2009; 17: 12–23. https://doi.org/10.1111/j.1468-5973.2009.00558.x

Stake RE. Multiple case study analysis. The Guilford Press: New York, London. 2008.

Stock GN, Greis NP, Fischer WA. Absorptive capacity and new product development. The Journal of High Technology Management Research. 2001; 12: 77–91. https://doi.org/10.1016/s1047-8310(00)00040-7

Sutcliffe KM, Vogus TJ. Organizing for Resilience. In Cameron KS, Dutton JE, Quinn RE (eds.) Positive Organizational Scholarship: Foundations of a new discipline (pp. 94–110). Berrett-Koehler Publishers, Inc.: San Francisco. 2003.

Suzuki O. Unpacking performance benefits of innovation ambidexterity: Evidence from the pharmaceutical industry. Management Revue. 2015; 26: 328–348. https://doi.org/10.5771/0935-9915-2015-4-328

Tidd J, Bessant JR. Managing innovation: Integrating technological, market and organizational change. 6th edn. Wiley: Hoboken (NJ). 2018.

Välikangas L. Strategic Resilience. In Augier M, Teece DJ (eds.) The Palgrave Encyclopedia of Strategic Management (pp. 1–4). Palgrave Macmillan UK: London. 2016.

Varadarajan R. Innovation, Innovation Strategy, and Strategic Innovation. In Varadarajan R, Jayachandran S (eds.) Innovation and Strategy (pp. 143–166). Emerald Publishing Limited: Leeds, England. 2018. https://doi.org/10.1108/s1548-643520180000015007

Vlačić E, Dabić M, Daim T, Vlajčić D. Exploring the impact of the level of absorptive capacity in technology development firms. Technological Forecasting and Social Change. 2019; 138: 166–177. https://doi.org/10.1016/j.techfore.2018.08.018

Weick KE. The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster. Administrative Science Quarterly. 1993; 38: 628–652. https://doi.org/10.2307/2393339

Weick KE, Sutcliffe KM, Obstfeld D. Organizing and the Process of Sensemaking. Organization Science. 2005; 16: 409–421. https://doi.org/10.1287/orsc.1050.0133

Xia Q, Xie Y, Hu S, Song J. Exploring how entrepreneurial orientation improve firm resilience in digital era: findings from sequential mediation and FsQCA. European Journal of Innovation Management. 2024; 27: 96–122. https://doi.org/10.1108/ejim-12-2021-0593

Yin RK. Case study research: Design and methods. Sage Publications: Los Angeles. 2014.

Teece DJ, Pisano G, Shuen A. Dynamic capabilities and strategic management. Strategic management journal. 1997; 18: 509-533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z