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The role of dynamic capabilities and strategic agility of B2B high-tech small and medium-sized enterprises during COVID-19 pandemic: Exploratory case studies from Finland

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Abstract

This paper focuses on the critical role of business-to-business (B2B) high-tech small and medium-sized enterprises’ (SMEs) dynamic capabilities and strategic agility during the COVID-19 pandemic. Based on the exploratory case studies of 5 Finnish high-tech SMEs, we find that the case SMEs enacted different processes and utilized resources and capabilities creatively to mitigate the impact of COVID-19 and leverage it as an opportunity. Findings indicate that agile adaptation and new opportunity utilization were the primary means of dealing with the disruptions the COVID-19 pandemic brought about. These findings indicate effective utilization of sensing and seizing capabilities and engagement with opportunity recognition and discovery to capture opportunities and deal with the impact of the pandemic on their businesses. The results further suggest that the outbreak of COVID-19 triggered a fight-or-flight survival instinct among B2B SMEs due to unprecedented levels of market uncertainty. As such, the sensing capability of B2B SMEs allowed them to identify the market threats and opportunities and understand the prevailing market situation. Accordingly, B2B SMEs seized the identified threats and opportunities by reconfiguring their business models and face-to-face and online operations. The digital technologies facilitated the online presence and promoted communication with existing and new customers. Interesting implications emerge from these findings.

1. Introduction

Given the financial, physical, and human resources constraints, small and medium-sized enterprises (SMEs) face unique business challenges compared to large organizations. Nonetheless, SMEs are the backbone of both developing and developed economies, with about 90% contribution to businesses, jobs, and the economy. While the COVID-19 pandemic impacted several businesses, SMEs have seen a severer impact due to their weak resource base and liability of smallness (Cowling, Brown, & Rocha, 2020; Pedauga, Sáez, & Delgado-Márquez, 2021). Extant research suggests that SMEs may resort to relational mechanisms and dynamic capabilities (DCs) to face and tackle external disruptions (Hernández-Linares, Kellermanns, & López-Fernández, 2020; Hutzschenreuter & Kleindienst, 2006). Such DCs and relationships based on interactions between the partners can potentially help face disruptions and survive the hardships.

Subsequently, in the aftermath of the pandemic, the literature has seen quick growth in studies at the intersection of DCs and SMEs to survive and thrive in the age of COVID-19. Clampit, Lorenz, Gamble, and Lee (2021), for example, studied how DCs predicted SMEs’ operating level performance and revenue and identified that the positive influence of DCs on operating level performance and revenue was found to be stronger for smaller size SMEs than their counterpart. Mitrega and Choi (2021) note that relational management capabilities (e.g., frequent communication, handling conflicts) significantly support SMEs in the transportation sector in dealing with COVID-19 crisis. Ali, Arslan, Chowdhury, Khan, and Tarba (2022) argued that SMEs of the global food supply chain instigate readiness, response, and recovery-related DCs in response to the COVID-19 outbreak. Papadopoulos, Baltas, and Balta (2020) assume that COVID-19 crisis could trigger digital
transformation capabilities in SMEs. Klein and Todesco (2021) note that SMEs are driven to strategic alliance and knowledge management capabilities in response to the COVID-19 pandemic.

Among SMEs, B2B SMEs hold an integral position as their failure could not only directly impact business partners but also cause an indirect or domino effect on the consumers. For example, disruption of Mutos, a B2B SME providing vehicle management software, would cause economic losses to the direct business partners (auto-businesses) and ultimately the final consumers (vehicle users). However, while SMEs are assumed to be more agile (Sukwadi, Wee, & Yang, 2013) against sudden changes, the sheer severity and unprecedented scale of the COVID-19 pandemic and the severe derived demand-related challenges it brought entails new research to better understand the role of DCs and strategic agility of B2B high-tech SMEs. However, B2B SMEs can be predominantly vulnerable to external disruptions due to their inadequate safety nets, access to credit, and equity capital (Yeniaras, Kays, & Dayan, 2020). Despite their pronounced strategic agility, B2B SMEs might be in particular jeopardy when facing a continued crisis of unprecedented scale, which can require distinct strategies, processes, and capabilities to explore. Accordingly, further research is needed to explore how B2B SMEs react to the COVID-19 pandemic and what capabilities they deploy to tackle the impact of such an unprecedented disruption.

Likewise, little is known about the behaviors of high-tech B2B SMEs, as a specific and often under-researched cluster of SMEs (Alegre, Sen-gupta, & Lapedra, 2011), in advanced economies in response to the different phases of the COVID-19 pandemic (Arslan, Golgeci, Khan, Ahokangas, & Haapanen, 2022). Given their products and offerings, high-tech B2B SMEs could be in a unique position compared to other SMEs with low technological intensity (Liu & Liang, 2015). They may enjoy niche/ intangible products that help them circumvent the negative effects of the COVID-19 pandemic while hosting distinct weaknesses that may make them particularly vulnerable to such largescale pandemics. Such an overlook of high-tech B2B SME behavior can hinder our understanding of a portfolio of possible business responses to the COVID-19 pandemic and the unique capabilities deployed by such SMEs in tackling the pandemic. Thus, the B2B high-tech SMEs’ capabilities in response to the COVID-19 pandemic and their ensuing survival entails empirical exploration. To this end, the dynamic capability view (DCV) (e.g., Teece, 2007) provides guiding principles to explore how and what kind of DCs are developed in the wake of turbulent and uncertain business environments such as the COVID-19 outbreak. The DCV suggests that DCs are advanced through sensing (identifying opportunities and threats), seizing (capturing value), and transforming (continuous renewal) activities (Teece, 2007). The extant research also suggests that sensing, seizing, and transforming processes could preserve strategic agility (Battistella, De Toni, De Zan, & Pessot, 2017); that is, the ability of a firm to continuously adjust and adapt its strategic directions to create long-term business value (Doz & Kosonen, 2010).

As such, building upon the DCV, this study aims to explore the DCs and strategic agility involved in the survival and performance of B2B high-tech SMEs during the COVID-19 pandemic. In so doing, we focus on high-tech SMEs in Finland as a fertile breeding ground for high-tech businesses and new ventures (Arslan et al., 2022; Liu & Liang, 2015). Finland is a small open economy, in which knowledge-intensive high-tech firms play a strong role and are often compelled to quickly internationalize due to the scalability restrictions imposed by their home country’s economic size (Nummelia, Saarinketo, Jokela, & Lozane, 2014). Given the relatively novel and underexplored nature of high-tech B2B SME behavior concerning the COVID-19 pandemic, we adopt an explorative qualitative research approach to realize our research purpose and conduct elite interviews with the key managers/decision markers of five Finnish high-tech B2B SMEs.

Our research makes several contributions to B2B marketing and small business research. First, we highlight the essential role of DCs and strategic agility in responding to the COVID-19 pandemic in the context of high-tech B2B SMEs. While previous research has focused largely on B2C SMEs in general and in specific countries (e.g., large economies), we concentrate on B2B SMEs in a small open economy of Finland. We explain how Finnish high-tech B2B SMEs develop and deploy their dynamic and agile capabilities to mitigate the challenges posed by the COVID-19 pandemic and leverage the opportunities triggered by the pandemic to create value. Second, by focusing on the behaviors of high-tech B2B SMEs, we contribute to the B2B marketing and small business research interface and explain how such SMEs adapt to the pandemic and utilize its impact as an opportunity for continuous change during and the aftermath of the pandemic. Third, we demonstrate the enabling role of the entrepreneurs in sensing, seizing opportunities, reconfiguring capabilities, and creatively modifying business models for opportunity recognition and exploitation to deal with the impact of COVID-19. Fourth, we provide critical empirical insights from high-tech B2B SMEs from Finland; given the high-tech ecosystem (network of high-tech firms) of Finland, it is vital to understand how high-tech SMEs cope with the impact of COVID-19. We believe that our findings from Finland can be applied to other small open economies.

2. Literature review

2.1. Dynamic capabilities view

DCV suggests that competitive advantage arises from “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano, & Shuen, 1997, p. 156) by “purposefully creating, extending or modifying [ing] its resource base” (Helfat, 2007, p. 1). DCs are considered high-level capabilities that allow organizational learning, create new asset portfolios, and renew ordinary capabilities (Helfat & Winter, 2011). B2B SMEs require DCs to respond to dynamic market conditions and create a competitive advantage (Teece, 2007).

DCs comprise sensing, seizing, and reconfiguring capabilities essential to organizational adaptation processes (Teece et al., 1997). Sensing capability relates to a firm’s ability to scan the external environment, interpret information, and identify opportunities (Teece, 2007). Seizing capability represents a firm’s ability to interpret information and decide on strategic investments, such as those involved in selecting business models and product architectures (Hodgkinson & Healey, 2011). Finally, reconceiving capability concerns a firm’s ability to orchestrate resources, transform processes and activities, and build new capabilities in response to market changes (Teece, 2007). Together, all three capabilities allow B2B SMEs to direct their resources consistent with marketplace needs to create a competitive advantage in a dynamic environment. Henceforth, the current study is guided by DCV to evaluate the relevance of DCs for B2B SMEs in responding to the COVID-19 pandemic.

2.2. Exogenous shocks and survival of B2B SMEs

The exogenous shocks are becoming more prominent that generate severe and long-lasting crises. Disasters, including floods, earthquakes, financial crises, health emergencies, and wars, have become commonplace. As events such as Hurricane Katrina in 2005, financial crises in 2008, the Earthquake in China in 2008, the Haiti Earthquake of 2010, the London riots of 2011, Tsunami of 2011 revealed (Herbane, 2019; Runyan, 2006; Sardana & Dasanayaka, 2013), B2B SMEs are particularly vulnerable to crises and shocks. The limited access to finance, business contraction, supply-demand disruption, and physical movement restrictions are exemplary consequences of exogenous shocks (Miklian & Holscher, 2023). Despite the severity of exogenous shocks (i.e., earthquakes, hurricanes, floods), their consequences were faced by B2B SMEs in a specific country or region (Gunessee & Subramanian, 2020). However, the outbreak of COVID-19 is a major disruptive event of history that has impacted businesses worldwide and disrupted global
value chains (Ali et al., 2022; Sakurai & Chughtai, 2020). Mandatory lockdowns have been implemented in many parts of the world to limit the spread of disease that led to the shutdown of factories and the temporary closure of businesses relying on physical stores.

COVID-19 pandemic brought many unprecedented social, technological, and structural challenges for B2B SMEs in many countries (Markovic et al., 2021). These challenges include problems arising from the absence of physical connections and remote working (Ali et al., 2022), cancellation of meetings and global events (like customer meetings, trade fairs, and conferences), closure of borders and travel restrictions, a devastating number of communications problems related to COVID-19, and greater mental issues (e.g., stress, anxiety, nervousness) of stakeholders (Juergensen, Guimón, & Narula, 2020; Markovic et al., 2021). These problems have affected and being affected by fear of temporary or permanent dismissal, lack of inventory, disruption of global value chains, stock delivery problems, adjustment to new work arrangements (e.g., working from home, expansion of work roles, changes to information exchange, and virtual meeting), and difficulty in maintaining daily operations (Hartmann & Lussier, 2020; Markovic et al., 2021). According to CEO of State Street Corporation Ron O’Hanley, remote work has made it harder to give employees opportunities for an apprenticeship, slowed innovation, and created mental-health risks (McKinsey & Company, 2021).

Notwithstanding these adverse consequences, the COVID-19-induced changes may open new, unanticipated business opportunities that can create substantial value for B2B SMEs that can capture them. According to the McKinsey Survey of 200 businesses across industries, three out of four executives agree that changes brought about by COVID-19 offer opportunities for growth (Am, Furstenhal, Jorge, & Roth, 2020). For instance, the COVID-19 crisis triggered SMEs to digitalize operations and strategic alliances as an effective way to survive and thrive in the current pandemic and similar future incidents (Klein & Todesco, 2021). Indeed, several SMEs started implementing digital technologies such as blockchain, the internet of things, and artificial intelligence in response to COVID-19-inflicted containment measures and labor shortages (Papadopoulos et al., 2020). Exposure to COVID-19 elicited DCs in several leading firms dealing with the current pandemic and similar future incidents (Ali et al., 2022). Similarly, a UK sports recovery business, MyoMaster, created an online store to sell products online, allowing people to train at home. In addition, a recent survey of 3600 B2B decision-makers across 11 countries and 12 industries revealed that COVID-19 had accelerated the digital transformation, including e-commerce, technology-enabled sales, and OmniChannel selling (McKinsey & Company, 2020). Specifically, COVID-19 presented opportunities for B2B firms to be innovative by redesigning their products, rethinking delivery channels and mechanisms, and identifying new strategic positions and partners who can help achieve their goals (Seetharaman, 2020).

Consistently with the bewildermend of B2B SMEs on exploiting opportunities during COVID-19 crisis, research has focused on understanding how internal advantages can yield competitive rents during the crises. For example, Hartmann and Lussier (2020) contend that increasing external pressure forces B2B firms to bring substantial structural changes to motivate and coordinate human force and technology. To ensure continuity of operations, the managers focus on creating new processes to exchange documents using digital technologies and providing formal or informal training to staff to develop relevant knowledge, skills, and abilities (Raslan et al., 2022; Rangarajan, Sharma, Lynglok, & Paesbrugge, 2021). Indeed, digital technologies enable B2B SMEs to offer customized solutions to their customers and other stakeholders (Corenyen, Matthyssens, Vanderstraeten, & Van Witleoostuijn, 2020). They also facilitate effective warehouse management and automatic order processing in the event of physical store closure (Narayananmurthy & Tortorella, 2021; Soto-Acosta, 2020). Digital platforms enabled by social media and the Internet of Things (IoT) enable B2B SMEs to communicate with stakeholders and remotely monitor business operations (Corenyen et al., 2020). Business analytics allow B2B SMEs to make more sounder, evidence-based decisions and improve their business value (Conboy, Mikaelen, Dennehy, & Krogstie, 2020; Llave, 2017). As a solution to external crises like COVID-19, business analytics facilitates design thinking “with its emphasis on disruption, abductive thinking, and reframing, offers insights for the necessary pivot — to survive, and potentially, emerge stronger” (Cankurtaran & Beverland, 2020, p. 255). More importantly, digital technologies can enhance processes that comprise SMEs’ DCs and revamp their operations during exogenous shocks (Mikaelen, Conboy, & Krogstie, 2021).

At the same time, research has suggested that B2B SMEs need to open up boundaries in fighting a pandemic. Opening up provides access to knowledge from different places and leverages human capital available in the world to launch rapid solutions (Chesbrough, 2020). As an illustration, Crick and Crick (2020) highlighted that if B2B firms collaborate with their competitors, they can obtain higher performance levels, meet unprecedented demands, operate an efficient supply chain, and survive under volatile markets. Similarly, Mora Cortez and Johnston (2020) show the importance of collaboration with diverse partners (e.g., suppliers, customers, competitors) to assemble the necessary resources to deal with COVID-19 crisis. Importantly, collaboration in innovation – known as open innovation – can be the most effective strategic response to crises (Dahlander & Wallin, 2020; Wenzel, Stanse, & Lieberman, 2020). Embracing open innovation can enable B2B SMEs to obtain many external resources and pursue joint research projects to create innovations (Markovic et al., 2021). However, while the internal advantages and collaborative activities are essential during COVID-19 crisis, establishing best internal practices and coordination between partners can be challenging for SMEs (Tabaklar, Sorkun, Yurt, & Yu, 2021). In this sense, DCs can allow B2B SMEs to embrace agile principles and promote strategic agility to survive the COVID-19 pandemic.

2.3. Dynamic capabilities and survival of B2B SMEs during COVID-19 pandemic

From DCV, survival during the COVID-19 pandemic requires B2B SMEs to gain sensing, seizing, and reconfiguring capabilities. The early anticipation (i.e., sensing) of threats or opportunities can allow timely preparedness, highlighting the importance of a proactive approach (Tabaklar et al., 2021). Once sensed, B2B SMEs must interpret information to arrive at a decision (i.e., seizing) to act and plan the commitment of resources to support the actions (Teece, 2007). Accordingly, B2B SMEs need to implement the seized threats or opportunities (i.e., transforming) by continued renewal and the augmentation of resources and capabilities (Teece, 2014; Teece et al., 1997). Together, all three capabilities (sensing, seizing, and transforming) are essential if a B2B SME is to sustain itself in the longer term as crises emerge.

B2B SMEs with more robust DCs are in a position to foster their strategic agility—that is, the ability of a firm to continuously adjust and adapt its strategic directions in a core business to create value (Doz & Kosonen, 2010). First, B2B SMEs can use sensing capability to proactively create propositions about the future implications of observed events through generative sensing, sensemaking, real options analysis, or the use of scenario planning. By doing this, B2B SMEs aim not to get the future right but rather shape the focus of decision-makers and bring their attention to an area that might have been overlooked (Weber & Tarba, 2014). Thus, sensing capability provides B2B SMEs with strategic agility and options that they can utilize to configure their resources when needed (Teece, Peteraf, & Leih, 2016). Second, seizing involves retaining opportunities or overcoming threats that can preserve strategic agility through flexible sourcing arrangements, reconfiguring business models, or adopting open innovation (Battistella et al., 2017). For instance, changes in organizational structure to apprehend digital transformation can orchestrate the resources of an SME to meet changing market conditions, thereby enhancing strategic agility.
SMEs constitute 99% of firms. However, to reap the benefits of DCs for strategic agility, B2B SMEs must exploit digital technologies like IoT, big data analytics, social media, and artificial intelligence (Martínez-López & Casillas, 2013). Through digital technologies, B2B SMEs can gather market intelligence, spot market opportunities, and identify changes in customer needs (Conboy, Mikalef, et al., 2020). Also, digital technologies enable mobilizing resources to address opportunities, selecting appropriate open innovation partners, and configuring distribution channels (Conboy, Dennehy, & O’Connor, 2020; Mikalef, Conboy, & Krogstie, 2021). Moreover, by exploiting digital technologies, B2B SMEs can achieve resource recombination, re-engineer operations and business processes, and manage knowledge (Mikalef, Pateli, & van de Wetering, 2021; Vidgen, Shaw, & Grant, 2017).

As can be seen in Table 1, the literature has seen growth in studies on the B2B SMEs to survive and thrive amid COVID-19 crisis, though many studies are still theory-free. Despite considerable advances in recent times, there is a lack of deep theoretical and empirical understanding of how high-tech B2B SMEs develop and deploy their dynamic and agile capabilities to mitigate the challenges posed by the COVID-19 pandemic and leverage the opportunities triggered by the pandemic to create value in an open economy like Finland. Also, our understanding is limited concerning the enabling role of the entrepreneurs in sensing, seizing opportunities, reconfiguring capabilities, and creatively modifying business models for opportunity recognition and exploitation to deal with the impact of COVID-19. This is important to explore as the internal responding capability of B2B SMEs through digital technologies is insufficient to enhance the survival of B2B SMEs during COVID-19 without the ability to sense emerging opportunities, seize these opportunities through coordinated actions, and reconfigure processes to promote strategic agility (Mikalef & Pateli, 2017). We argue that B2B SMEs can efficiently anticipate crises and achieve strategic agility without making costly investments in nurturing strategic agility through digitally-enabled DCs (Teece et al., 2016). As such, this study aims to provide insights into the relevance of digitally-enabled DCs for the strategic agility of B2B SMEs to survive the COVID-19 pandemic. To gain such insights, we interviewed B2B SMEs from Finland, a Nordic country in Northern Europe emerging market from South-Eastern Europe, where SMEs constitute 99% of firms.

3. Research methodology

3.1. Choice of research methods

COVID-19 pandemic started to hit economies worldwide in spring 2020. The situation is new, and for this reason, and to our best knowledge, no prior studies on how the COVID-19 pandemic has impacted SMEs’ strategic agility exist. The phenomenon lacks prior theorization, testable hypotheses, and empirical evidence, resulting in our choice of qualitative research method, a multiple case study approach (Kotekivi & Choi, 2014). We use an exploratory study to understand the effects of the COVID-19 pandemic on SMEs’ businesses and how these SMEs’ top management has reacted to this external, unpredicted shock. In this regard, management studies commonly agree that qualitative methods are most appropriate for examining such an under-researched topic (Eisenhardt, 1989).

### Table 1
Summary of the existing research on B2B SMEs, research methods and theories.

| Authors                        | Key findings                                                                 | Method                      | Theory                        |
|--------------------------------|------------------------------------------------------------------------------|-----------------------------|-------------------------------|
| Ashiru, Adegbite, and Kopereci  | Relational governance triggers DCs in B2B SMEs amid the pandemic              | A qualitative study in Nigeria | Social exchange theory        |
| Coreynen et al. (2020)         | Digital technologies enable B2B SMEs to offer customized solutions to their customers and other stakeholders. | Survey-based quantitative study on the Belgian firms | Dynamic capability view and contingency theory |
| Hartmann and Lussier (2020)    | Increasing external pressure forces B2B firms to bring substantial structural changes to motivate and coordinate human force and technology. | A qualitative study in Norway | Socio-technical system theory |
| Juergensen et al. (2020)       | How recent pandemic altered behavior of customers and sales process in B2B SMEs. | A case study in Norway Dynamic capability view | None |
| Kleine and Todesco (2021)      | Strategic alliance and digital technologies are key tools allowing the B2B firms to adapt and rebound the business. | Review of literature | None |
| Miorovic (2021)                | Top managers of B2B SMEs charged with positive emotion are more engaged in investment as a response to the COVID-19 pandemic. | A survey-based quantitative study in Croatia | Cognitive appraisal theory |
| Mikalef, Conboy and Krogstie  (2021) | B2B firms leverage artificial intelligence to support DCs, which in turn improve marking activities. | A case study in Norway | Dynamic capability view |
| Rangarajan et al. (2021)       | How recent pandemic altered behavior of customers and sales process in B2B SMEs. | A qualitative study in the USA | None |
| Rieke, Vel, and Nyadzayo (2022) | SMEs adopt a new form of collaboration to survive and thrive amid COVID-19 | A qualitative study in Bosnia and Herzegovina | None |
| Todesco and Juergensen (2020)  | Strategic alliance and digital technologies are key tools allowing the B2B firms to adapt and rebound the business. | A case study in Norway | Dynamic capability view |
| Yue (2020)                     | How recent pandemic altered behavior of customers and sales process in B2B SMEs. | A qualitative study in the USA | None |
| Nyadzayo (2022)                | How recent pandemic altered behavior of customers and sales process in B2B SMEs. | A qualitative study in the USA | None |
| Grant (2020)                   | The study identifies the practices (digital transformation, leadership, decision-making process) that managers can use to navigate and survive the pandemic. | Ground theory in the USA Social exchange theory | None |

(Conboy, 2020; Khan, Majid, & Yasir, 2020). Third, transforming capability involves challenging conventional routines for timely accommodation and adjustments (Teece, 2007). As such, transformation capability can translate into strategic agility by transforming unpredictable and changing situations into profitable ones to progress and survive crises (Kale, Aknar, & Basar, 2019).
3.2. Data collection and sample SMEs’ background

In our analysis, we selected five Finnish high-technology SMEs. Table 2 presents the SMEs. With a population of just 5.5 million as of 2022, Finland is a good example of a small open economy in which firms are highly dependent on international trade due to their home country’s size limitations and ensuing open economic policies (Nummela et al., 2014). Moreover, in such an economy, government COVID-19-related actions have had an immediate and strong impact on firms’ operations. We selected our case SMEs so that they all come from the software service and software product development industry. Our case SMEs mirror a crosscut of the high-technology software industry as they range from pure software subcontracting (Epsilon) to SMEs designing and selling their own shrink-wrapped (Delta), tailored (Beta), and semi-tailored (Gamma) software solutions in international markets. One of the SMEs provides OEM services along with its own software solutions (Alpha). Hence, they comprehensively represent how the Nordic high-tech sector has responded to the COVID-19 pandemic. In selecting our case SMEs, we followed the convenience sampling method. We collected our data utilizing elite interviews from the sample SMEs that we knew from the past and in which we had good access to the SMEs’ key decision-makers and top management.

The elite interviewing method has been an increasingly popular approach to doing qualitative research and gaining rich insights into underresearched and difficult-to-access phenomena that comprise exclusive insights from the ‘elite’ group of individuals and executives with profound and wide-ranging experience in their focal industries (Aberbach & Rockman, 2002; Harvey, 2011). Recent research in marketing has utilized a similar sample size of elite interviewees (e.g., Howe-Walsh, Turnbull, & Budwar, 2019), as accessing and leveraging a large ‘elite sample’ is typically a challenging task and often not necessary (Harvey, 2011).

All five informants hold a critical managerial position (two sales directors, two vice presidents, and a chief operating officer). Therefore, they have an in-depth knowledge of their SMEs’ economic situation and consequent strategic moves. Non-probability sampling has been widely used in research (Etikan, Musa, & Alkassim, 2016), particularly management studies typically rely on convenience samples (Cuervo-Cazurra, Andersson, Brannen, Nielsen, & Reuber, 2020). Over the years, we have had close personal relationships with these SMEs’ top management and had continuous dialogue – tens of discussion instances regarding how the COVID-19 pandemic has affected the business. Now, when the pandemic has lasted longer than anyone could have expected, we felt that it was time for systematic data gathering on this topic. Consequently, we contacted the top managers of the sample SMEs to participate in this study. Personal relationships with the key informants ensured open dialogues, and on many occasions, interviewees verged on confidential information. To let the managers talk freely, we agreed on using pseudonyms (Alpha, Beta, Gamma, Delta, and Epsilon) instead of real firm names.

For data collection, we followed a semi-structured, thematic interview guide. Themes followed the COVID-19 pandemic timeline: we discussed SMEs’ initial reactions when the pandemic hit, how SME operations were rearranged as the pandemic continued, and how our case SMEs see the situation today. A loose thematic guide gave us great flexibility to further follow and continue issues that key informants raised and considered necessary. We let the interviewees speak freely; hence, discussions winded and rambled and consequently yielded rich primary data.

All five case SMEs have their origins in Northern Finland, Oulu. The first case SME, Alpha, is a software and IoT solution provider. Alpha’s services include customized IoT design, new product development, and embedded solutions for various purposes. The SME has customers from different industries. Hence, this diversification and acquisition of a new smart office business line in the summer of 2020 have smoothed the COVID-19 pandemic’s impact. The second case SME, Beta designs and sells both enterprise planning (ERP) solutions for the forest industry and e-commerce solutions for SMEs. Beta was acquired by a large Finnish high technology consulting firm in August 2020, amid the COVID-19 pandemic. However, the pandemic had a slight impact on this deal. As a result, signing the contract was postponed for three months. Nevertheless, Beta is continuing as an independent subsidiary. Besides its forest industry, sawmill ERP software, and e-commerce products, its current product portfolio also has bioenergy & recycling solutions.

The third case SME, Gamma, is a high technology SME providing floor plan solutions for real estate agents and photographers. With the solution, users can scan the facility with their mobile devices and in doing this, get a professional floor plan the next day. Gamma operates in Europe, but the SME’s main markets have been shifting to the USA for the past few years. Our fourth case SME, Delta, is designing and selling software products. Delta provides software products for process mining, enterprise architecture, business process management, and performance and quality management. The SME operates in global markets, mostly through its resellers, and relies on foreign salespeople. Delta is listed in the OMX Helsinki Nasdaq and hence, is following the corporate governance code. Finally, our fifth case SME is Epsilon, a high technology SME providing software subcontracting services. In 2017, a Finnish technology conglomerate acquired 30% of the SME. The SME’s customers have been large, mostly Finnish firms, yet during the COVID-19 pandemic, the SME has gained new remarkable foreign customers.

3.3. Data analysis

All interviews were conducted in the Finnish language, they were recorded, and in the next phase, they were transcribed and translated into English by an experienced bilingual academic researcher. In addition, we collected our secondary data from case SMEs’ web pages, newspaper articles, analyst reports, and year-end reports. We believe that the resulting triangulated data provide us with holistic and trustworthy insight into how the COVID-19 pandemic impacted our case SMEs’ operations (Eisenhardt, 1989). We adopted the qualitative content analysis method (Forman & Damschroder, 2007). In the first phase, we engaged with our data to get a holistic view of the raw data on our hands. During the next step, we rearranged our data into themes and thematic segments, and in doing this, we also removed irrelevant parts. Finally, we analyzed our data, identified the emerging topics, and collected our findings under these topics (Gamerschlag, Möller, & Verbeeten, 2011). As in most qualitative content analyses, we organized the data into themes derived from the data (Forman & Damschroder, 2007).

In the next section, we present our findings. In doing this, given the
spatial constraints and, at the same time, our rich data, we follow the recommendations of Eisenhardt (1989) regarding the use of quotations and analysis.

4. Findings

While the Finnish high-technology industry and SMEs within the industry saw the emergence of a number of changes in the market created due to COVID-19, we identified five key areas from our qualitative interviews (see Fig. 1). First, the COVID-19 outbreak and its effects, in general, are discussed (i.e., the central block in Fig. 1). Second, findings are provided about DCs and how they enabled SMEs to identify changes in the external environment. Third, we describe the strategic agility that enabled SMEs to better respond to the COVID-19 outbreak. Fourth, response strategies to COVID-19 are explained. Finally, findings related to the new normal are presented.

4.1. COVID-19 outbreak and its effects

Our analysis first revealed a variety of utmost feelings on the COVID-19 pandemic and its impact on the participant SME's business since March 2020. Participants highlighted that the COVID-19 pandemic had had an unprecedented impact on their businesses, both in terms of positive and negative aspects. For example, Alpha Sales Director notes. “For us, the pandemic has been a multifaceted issue. Covid has had an impact on some business areas, no impact on some other, negatively on some areas, and even positively on some others. We have faced all possible dimensions.” In March 2020, Alpha received 9 million euros funding, that is, right before the COVID-19 pandemic hit Finland. Hence, Alpha was lucky in terms of slack resources that can mitigate external challenges. The sales Director notes, “In this regard, we did not need to make any adjustments. In fact, we made an acquisition.” He refers to a deal in which Alpha acquired a smart office business line from a Scandinavian major IT consulting firm. Alpha did not need to lean on layoffs, on the contrary, the number of employees kept increasing, and the firm was instead facing human resources shortage.

The SME has customers in various industries, and some were affected more by COVID-19 compared to others; for instance, the hospitality industry was severely affected by COVID-19. The sales Director indicated, “Full capacity. We have...”

![Fig. 1. B2B SMEs' dynamic capabilities and strategic agility during COVID-19.](image)
needed to postpone the start of new projects. We are talking about months, and order books are full. [...] Not because of Covid. Alpha has been more in Media and for this reason, has got even a stronger foothold at the markets.” Similarly, the COVID-19 pandemic influenced only some of Delta’s business lines. While the impact on local customers was immediate, the impact was felt much longer in the case of international customers. Delta VP mentioned this in the following way.

“Our consulting business in Finland suffered from an immediate impact, customers were surprised, and many projects were stopped temporarily. […] Regarding our international software business, some kind of customers’ extra hesitation to buy came into the picture, and maybe customers found it difficult to get approval for much bigger deals in the absence of their internal face-to-face meetings. These projects continued as pilots for an extended period. In this license business, the impact of Covid lasted for a longer period and has been continuing until the first half of 2021. Making bigger decisions has been more difficult for end customers.”

At the time the COVID-19 pandemic hit, firms were facing diverse restrictions and uncertainty, with managers not knowing what would happen. The new situation also influenced Epsilon’s service business, and the SME reconfigured its strategy to cope with the impact of COVID by enacting ethical values and CSR, which delivered value for the firm. Alpha Sales Director describes it as.

“Pandemic also hit us, and we needed to make savings. Yet, from the business ethics point of view, we decided that if in 2020 we made a profit, out of this profit, we would first compensate those earnings that employees had lost. It turned out to be possible, and we did it. It had a major impact, respect of values, a positive HR impact. I believe that relatively many were thinking about an ethical way of proceeding, situation pushed many to consider ethics, what it means to be an ethical employer, ethical business. […] We wanted to do our share in this social situation.”

In short, while the COVID-19 pandemic had a sweeping and unexpected influence on the participant SMEs, including halting the recruitment of new employees, this influence was not unanimously negative. In fact, as noted above, there were some surprising positive aspects of being hit with such a severe and widespread disruption.

4.2. Dynamic capabilities relevant to external changes

DCs relate to the ability of firms to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece, 2007). Our findings suggest three capabilities, including sensing, seizing, and reconfiguration relevant to COVID-19, as discussed below.

4.2.1. Sensing and seizing capabilities to identify customers’ needs

The COVID-19 pandemic pushed SMEs to find new ways of continuing their business as they sensed and seized new opportunities resulting from the COVID-19-driven changes in people’s lifestyles. For example, Delta VP explains if they analyzed possible shifts in their customers’ needs. He says.

“We should learn from this pandemic that when we face changes, one should also consider the related opportunities in the future. I think this is a very good question. Maybe large firms should allocate 80% of their energy to mitigate the negative impact, but then again, 20% or 10% or at least 5% [...] some small share would be beneficial to be allocated to figure out how we could make money out of this. I do remember that, at the very moment when the Covid hit, I did think if it would provide us with some opportunities [...] I don’t know if those ideas were any good […] we all just thought that things will get back to normal soon […] after the summer things would be back as normal, not enough time for new ideas to initiate new business. However, when we realized that this would not be over in two months, we did not start a new round for a think tank, either. We are pretty much inside-out, we look at ourselves – how do we work, it would have more outside-in type of thinking, hey, what this new world needs.”

Beta VP explains their different track. He mentions that.

“What was most surprising is that we have made foreign sales without ever meeting these people personally, for example, we closed a big solution deal in Belarus, and we had never met these people. A totally new customer-ship. We have also made other similar deals to Baltic countries, that is, without meeting the customer personally. This is damn much more effective to have a two-hour MS Teams meeting instead of traveling for three days. Visiting Estonia inevitably requires at least two days, two days for traveling, and you can squeeze, at most, two meetings in that time. Afterward, I must note how stupid we have been. There has never been such a favorable economic trend as the last year was.”

The COVID-19 pandemic has been a great change opportunity for SMEs that could sense and seize new opportunities amidst the clouds of uncertainty and turmoil. As such, as the participants point out, the participant SMEs were keen on leveraging opportunities out of the COVID-19 pandemic and executed unique organizational processes such as finding new customers and initiating new businesses in response to new realities that underlie their sensing and seizing capabilities. In some industries, pandemic, per se, accelerated growth. Gamma COO explains.

“We got really many new customers [...] let’s focus on the US markets. We have not been investing in marketing, we have been sponsoring some events, but mostly it is mouth-to-mouth. Then, when the people see that those are using floor plans, the need for 3d and virtual tours increased, and people followed each other. Then an incredible boost got started. During the summer, real estate agents and photographers had been our initial targets, then, in the US, a Polish-Canadian guy I had seen in one conference [...] we chatted. He introduced me to his friend, whose firm might use our solutions. Today, we have 20 to 30 of these firms. We are now kind of semi-officially approved as US government-sponsored entities [...] it is ok to use Gamma to define the value of the apartment as one part of this value estimate. Since this introduction up today, less than a year, we are in a totally different situation.”

Thus, a positive side effect of the pandemic was unexpected growth opportunities. There were also further instances of how the COVID-19 pandemic provided new business opportunities and how the participant SMEs sensed and seized these new opportunities. For example, Alpha Sales Director refers to smart offices. He mentions that.

“Covid has rather been a nice carrot, but the bottom line still is that firms buy these tools to increase employees’ comfort and overall efficiency. Yet, Covid has had an impact in that firms will need more accurate information on the offices’ utilization rate. Firms are already anticipating the possible changes in their need for office spaces. Some firms will move to smaller facilities not offering dedicated workspaces to everyone.”

Epsilon Sales Director support this point by toning that.

“When we got over of the initial shock, the independence of location turned out to be a strength. Particularly in international business, it does not matter from where you operate. Through our networks, we got remarkable customers from the US and Asia. International customers buy differently from local customers in Finland. We needed to do our homework better and be prepared. Thus, we made it work [...] Through our networks, we were able to show our competence, and then, with these really big and remarkable projects, we started to catch up with the lost turnover. Those frozen projects, little by little, started to continue and grow, too.”

Under the changing circumstances driven by the COVID-19
pandemic, the participant SMEs needed to reconsider and rearrange their interorganizational governance and control activities as they sensed the quickly changing business landscape during the COVID-19 pandemic. By sensing the quickly changing business landscape and rearranging their interorganizational governance and control activities, they were able to seize opportunities unlocked by the pandemic despite the daunting challenges it engendered. In particular, they gained access to unique information through emergent technologies and utilized the information to respond to the pandemic and seize opportunities from their challenges. The participant SMEs also had to address and mitigate customer doubts, better understand the buyer perspective, and assure that business exchange could continue despite the disruptions created by the pandemic. These processes underpinned their sensing and seizing capabilities and explained the way these processes were uniquely executed.

4.2.2. Reconfiguration capabilities for sales and marketing during the COVID-19 pandemic

As part of the portfolio of DCs implemented by the participant SMEs, reconfiguration capabilities were especially relevant to sales and marketing during the pandemic. SMEs facing the pandemic were forced to reconfigure their marketing/sales strategies and practices and develop them as a key dynamic capability. For example, Epsilon Sales Director has a long track record in corporate sales. Regarding the opportunities for reconfiguration capabilities during the pandemic, he remarks that,

“Recognizing customers’ needs has not changed. However, the role of marketing and communication is now emphasized. Now, there are no events for networking, customers are looking for information from the web, and hence, the global web presence is more important. We have been polishing our brand, we have modified our core message … to meet the international demand better. To be ready to serve global customers as the independence of location will continue for sure.”

Likewise, Alpha Sales Director describes,

“Where to find those good customers, it has always been the very same challenge, Covid or not.” Automatization of marketing is playing a major role. We have been improving in this. Through this channel, we have found new leads. Because of the acquisition, we were more in the media and this, in turn, increased the number of visitors to our pages.”

In summer 2020, Alpha acquired a smart office business as part of their strategy to reconsider their key capabilities and offerings to their customers amid changing realities and customer demand pushed by the COVID-19 pandemic. Sales Director stresses that,

“Firms are looking for such solutions and end up at our web pages. Yet, their need is not necessarily exactly the smart office per se, but this is the route they come. They leave their contact details and ask for further information. This has been increasing during this Covid pandemic… We utilize social media marketing. We are trying to identify those customers who are interested in us. We have used the automation tools … during the pandemic, we have learned how to use automatization tools more effectively. […] But not because of the Covid. This has been typical learning.”

Delta VP agrees by saying that “Via the web and from the Gartner’s quadrants, large corporations look for these and make competitive tendering.” He refers to slower decision-making of a firm’s big customers and continues, “Matter, in fact, our business has often been such that when customers’ own business is slowing down, they have more time to develop, they have time to develop, and in doing this, they buy tools for developing.” Consequently, the role of marketing and reconfiguration capabilities has been amplified further during the pandemic. Participant SMEs revamped their business models and reconfigured their key competencies in the pursuit of seizing new opportunities and utilizing the pandemic challenge as an opportunity. For example, as quoted above, the marketing activities of some participant SMEs were reconfigured and automatized.

The participants also highlighted the importance of networks in reconfiguring sales and marketing during the pandemic. Delta VP stresses the importance of networks,

“We are totally dependent on our networks. They play a huge role. We had already absorbed this mode in which relationships are being created remotely. We have managed to maintain them quite well during this Covid pandemic. I have two mates with who I have been working for a year now. I have never met them … salespersons in the UK and France. Furthermore, I have many customers that I have never met. Meeting them by using the camera, this has become a new de facto.”

Alpha Sales Director shares the important role of networks.

“Word-of-mouth has become important. Recommendations have become more important. During the pandemic, people have been asking each other … someone gave a hint that they have this. Networks are always important, maybe their role has been highlighted a bit, but the big picture has not completely changed. These have always been very important. Word-of-mouth has always been the best sales channel. Yet, creating networks has become difficult. There are no events in which people could physically meet.”

Gamma COO agrees.

“Regarding networking, Covid had a major impact, particularly in Europe. I had an opportunity to make contacts, say, only 20 percent of the contacts compared to the normal times. Good that we had existing networks and customer relationships, remote meetings, and furthermore, we succeeded damn good in various competitions, which have brought us those contacts that we otherwise missed.”

Epsilon Sales Director continues.

“The power of ecosystems. The role of ecosystems is even more important. For a small firm, there are no resources to go through millions of firms. Instead, we need to rely on certain clients. When achieving a certain status in certain ecosystems, then, it is far more efficient to spread the good news within these ecosystems than approaching individual firms.”

These quotes provide evidence that SMEs that could develop and manifest reconfiguration capabilities were better positioned to leverage the pandemic-related changes as positive forces for sales and marketing, and networks played an instrumental role in reconfiguring sales and marketing during this period. They also show that processes underlying maintaining network relationships, diversifying business networks, and utilizing new network connections played a critical role in reconfiguring sales and marketing during the pandemic.

4.3. Strategic agility

In the face of a sudden hit by the COVID-19 pandemic, participants SMEs implemented practices that enhanced their strategic agility. For example, in the immediate aftermath of the COVID-19 pandemic hit, Beta prepared three possible business scenarios. These scenarios covered the period from March 2020 until the end of the year. They also show that processes underlying maintaining network relationships, diversifying business networks, and utilizing new network connections played a critical role in reconfiguring sales and marketing during the pandemic.

Scenario work is good. You can perfectly figure out the borders of the sandbox. In no scenario, our firm’s existence was jeopardized. The first one was the expected one. In this one, I anticipated that the business would be back to normal after the summer holidays, and this was the case. The worst one was a meltdown of the core business, and the third one was in between these two.” … “Even if the business had followed the worst-case scenario, we would have been able to make a decent positive result, yet on a cost of laying off employees.”

Accordingly, Beta board immediately decided that they would put on hold their recruitment for three months, with no hiring of new employees before the mid-summer. However, after the dust of the COVID-
19 pandemic settled, the SME took the mid-road and started recruiting as usual, even though familiarizing new employees to their workplace and work routines remotely was a challenge that required creativity and strategic agility.

Nonetheless, because of the pandemic, some customers got cautious and started to postpone their orders. For example, as the immediate need for software services declined, Epsilon needed to respond and take the inevitable actions. The SME was highly concerned about the possible losses and their employees' well-being. Sales Director emphasizes that.

“We could have been more agile. The situation was confusing. Relatively soon, we realized that we would be hit to some extent, nothing we can do about, what to do next to be ethical and take care of our employees and jobs, and how to move on […] Then we analyzed how much this will hit us. We sketched different scenarios and calculations … income and expenses, if need to adjust and how much. … We went through our customers and did a risk analysis based on probabilities, our own estimates of likelihoods. Then, we naturally discussed also with our customers ... cost and price pressures were high, customers needed to come up with their savings. Together with them, we speculated on the available options. Moreover, it did not make any sense to stop and worry about new plans.”

Similarly, Gamma started to analyze the new situation. For example, COO notes that.

“There were perhaps two or three weeks, a month, during which no one knew ... we also gave an alert that some layoffs may follow. We discussed with our team leaders how we would proceed without comprising the elementary activities. We drafted some scenarios ... what if volumes drop ... and so on. […] We were super agile. We did not consider that business would totally stop, but because we had been planning to grow, we thought that the planned growth might not actualize or happen at all. We did not plan to lay off anyone, yet we did not continue recruiting, either.”

In short, if not all, some participant SMEs implemented practices to enhance their strategic agility and put forth clear and effective strategies to deal with the pandemic, and for such SMEs, the shift to remote work was relatively fast and painless.

4.4. Response strategies to COVID-19

As experienced worldwide, the COVID-19 pandemic resulted in restrictions, and consequently, SMEs needed to figure out new ways of organizing and operating. As they could not meet their customers face to face, they have been forced to use virtual meeting tools. For high technology SMEs, the use of such remote tools is nothing new. Yet, in this new situation, SMEs' customers also had the same necessity regarding their own operations, and thus, virtual meetings became a new normal. For example, Alpha employees did not do business travels and started working remotely during the pandemic.

Similarly, other SMEs also enacted agile practices to cope with COVID-19. For instance, Beta VP notes.

“We had all the infrastructure needed for remote work already existing. We stamped it up and running overnight. We told the guys that from Monday on, stay home, here you have this new procedure. We were damn agile and reacted really fast. The management board had meetings more often and was tracking the direction of the business. We were following how the remote work impacted hours done and hence, our invoicing.”

Strategic agility helped the SME save financial resources. The SME benefitted from the new situation imposed by the pandemic and swiftly leveraged the unexpected impact of the pandemic as an opportunity. Agile practices and capabilities led to positive results. Due to the implementation of strategic agility, costs decreased, and the turnover was as budgeted. Hence, the profit was better than what the SME had initially planned. For example, Alpha Sales Director mentions that “Approximately 150,000 euros of costs disappeared, hotel, gasoline, and airline costs ... in my business, approximately 20,000 per month.”

Nonetheless, perhaps the most prominent impact has been that salespeople and firm representatives stopped traveling and attending seminars, conferences, or customer meetings. In this regard, SMEs quickly adapted to the new reality and promptly crafted the new remote working mode in the SME's sales practices. The ways of working have changed. For example, some participants noted that online sales meetings had become a prevalent way of conducting marketing and sales activities. Some of these changes have been noted as possibly permanent, which indicates radically less traveling and new (potentially more efficient and environmentally friendly) B2B marketing practices. Epsilon Sales Director shares this view and agrees on the increased efficiency that resulted through strategic agility and changing work routines in the following way.

“The fact, that we were totally in a remote work mode, we could not meet the customers face to face but using these remote connections, this meant that maybe we even had more time to discuss with a customer. The situation was new to everyone, a possibility to have more profound discussions. Also, customers had time to discuss. This brought remarkable cost and time savings, no need for traveling... in the beginning, no big projects started, everyone was looking around to find out what will happen next.”

Nonetheless, COVID-19-driven changes to business traveling were not radical or unprecedented for some SMEs. Especially for SMEs with the necessary know-how and technological infrastructure and for introverted employees like Gamma COO, COVID-19-driven changes were welcome and not perceived as extremely radical. Accordingly, the COVID-19-driven changes to work-life and B2B marketing practices were experienced at the spectrum, from extreme and unwelcome to incremental and welcome.

Hitherto, Delta VP expresses his concern regarding the fact that people are missing social contacts when operating remotely and, hence, those valuable unofficial chats and meetings with genuine human interaction possibilities. Specifically, he refers that.

“From our innovation process point of view, we do not have these coffee room discussions, software firm relying on innovations, in my opinion, we can see the impact of Covid. Remote operations, in principle, are very efficient. However, our company culture encourages unofficial discussions around the coffee machine, in the kitchen, and corridors to improve knowledge sharing and innovations. We are now using teams meetings instead, but it is not always the same thing.”

The challenge of the COVID-19-driven remote work arrangements and the lack of physical meetings/events was particularly pronounced for SMEs as they lack standardized procedures and need greater socialization. Furthermore, other case SMEs point out the HR-related issues. For example, Epsilon experienced HR challenges that were related to a sense of community. Remote work arrangements prevented employees from seeing each other, leading to employees losing social connections and ensuing challenges in coping with work stress without the real-time social support of colleagues. Accordingly, social connections, unofficial chats, and meetings have been a critical void felt across the participant B2B SMEs during the pandemic.

The COVID-19 pandemic has been an unusual external economic shock, it was global, and all SMEs faced restrictions to some extent. After the initial paralysis, SMEs did realize that businesses must continue, one way or another. It was clear to the participating SMEs that customers have learned to use online tools and exhibited thorough improvements in their handling of online meetings and distant management of B2B relationships. Moreover, after the initial shock and freeze in business transactions at the beginning of the pandemic, customers started to recover after realizing that the pandemic permanently was altering business. Similarly, Delta VP points out.

“Regardless of their industry, our customers have been continuing with their business development, have been continuing their development...”
projects." Epsilon Sales Director notes that “When the pandemic hit, there was this initial shock, what will happen. We had a relatively lot of customers in the accommodation and restaurant industries, also in the construction, these froze immediately and thus, it hit us … a decline in the turnover. On the other hand, as we recovered from this initial shock in April … May, we noticed that the need of doing in this business did not vanish.”

All in all, despite the unprecedented effect of the pandemic on the participant business, the participant SMEs’ adaptation was quick and effective.

Some SMEs traditionally had a relatively strong foothold in providing software solutions for industries (like the forest and sawmill industry) that have benefited from the pandemic. For example, Beta VP notes that.

“I have this consultant who is making calls. It is a foot job. Now when we cannot use our feet, it is a phone job. We had maybe a six-month period that nothing really happened in terms of sales. Then people realized that this is the new normal and if they are about to develop their business, it needs to be done under the prevailing terms.” “We had incredible luck. In the very beginning, there was this same shock. Then came the lockdowns. At the time the Covid hit Russia, Putin announced the so-called holiday, quite a few million cubic meters of timber disappeared from the markets, similarly in Central Europe. Yet, the demand stayed stable… may be increased slightly, but capacity vanished from the markets. Today, sawmills are in the middle of the so-called supercycle. Prices have doubled.”

Similarly, Gamma COO recalls that.

“I think it was October … November when we hired many new software coders. We went the summertime through with the own, existing people. Then, in November, we radically increased the headcount, especially to the application end. It took a couple of months until [newly hired software coders] got up and running. Now, we are in the middle of an excellent pace. New code is coming out. We had a big release in January, our software development process has radically evolved.”

These developments indicate that COVID-19 turned out to be a positive force for some participant SMEs once their customers realized that it would likely continue much longer than initially anticipated and demand for certain products actually jumped (more than 100% in some cases) throughout the pandemic due to changing lifestyles and priorities that fueled the economy rather than stopping as initially expected.

4.5. New normal - permanent changes due to COVID-19

As noted above, as the COVID-19 pandemic dragged, a sinking feeling that at least some of the pandemic-driven changes were likely to be permanent and businesses would wake up to a new reality emerged. This was especially prevalent in the digitalization of marketing and sales and the replacement of some work routines with new ones. Alpha Sales Director explains that the bigger picture impacting the demand for digital services is the future need for office spaces in general. He mentions that.

“Common understanding is that remarkably less office space will be needed. In this regard, there is a need of tools, how firms can efficiently adjust their use of office spaces, how firms will be able to adjust into this new situation.” Regarding sales, all meetings are on the net. Also events, there is still a lot to learn in these events. They are not that efficient. The situation has pushed all of us to digitalization.”

Before the pandemic, people met in a face-to-face fashion, and, in this regard, Sales Director notes, “Communication, less cross-organizational communication, you do not meet R&D people compared the time before.” In its entirety, Sales Director considers that the SME has survived the pandemic extremely well and speculates that “Also after the pandemic, we will be spending less time in the office.” Beta VP has an opposite opinion on remote work but shares the burden of traveling, “Every team still have a meeting every morning, now one can sense some kind prevailing boredom, something that has not been there before, mental sickness … I have been in the office throughout the whole time, remote work does not suit to me. […] I wish that all the business traveling will be less also in the future, it so useless, waste of time. … I sincerely hope that we will travel less in the future.”

When discussing possible permanent changes, Delta VP considers, “This is not a big issue for us. Consultancy customers had already adopted the remote way of working, and this became a new de facto. This became obvious at the end of the summer … When people get back on-site, you may feel like an outsider if you are not there. Thus, this is a big question, how to do it. These customer meetings, it has been really efficient to arrange meetings to take place the same day, right away, let’s have a meeting today, things flow much better compared to having a meeting once in a month … sitting in a meeting the whole day.”

He continues, “For us, for the past five years, it has been a big issue if customers dare to buy remotely, without meeting physically even once. Sure, those who dare have bought already. Yet, we do not know how many did not buy because they did not dare. Large firms had done remote projects earlier; now, smaller firms have learned to do this too. In the bigger picture, what a firm needs to do by itself, firms will be outsourcing those services that can be provided remotely.”

Epsilon Sales Director agrees by saying that.

“I wish that there would no longer be such a need to visit customers’ premises … many of my big customers have noted that they will rearrange their facilities. It makes no sense to invest in office walls. There is no need to have these 100 consultants on their premises as they can do the same work remotely.”

Thus, while some COVID-19-related changes were temporary, others were permanent. It has become increasingly clear that businesses will not be able to go completely back to old ways after the COVID-19 pandemic, and some changes will stay as constituents of the so-called ‘new normal’.

4.6. Conclusions

This study set out to explore DCs and strategic agility-related resources and abilities utilized by B2B high-tech SMEs during the COVID-19 pandemic. Using DCV and exploratory case studies of 5 Finnish high-tech SMEs, we find that the case SMEs enacted sensing, seizing, and reconfiguration activities to generate DCs, thereby surviving and thriving amid the disruptions the COVID-19 pandemic brought about. The sensing capability allowed identification of the market threats and/ or opportunities, seizing supported resource mobilization to capture the value from the recognized opportunities/threats, and reconfiguration facilitated re-organizations and restructuring of business model in the incumbent SMEs. Specifically, we note that sensing the repercussions of the pandemic, SMEs seized the chance to create value-creating capabilities, such as shifting to remote work, attending virtual conferences, utilizing slack resources (reserve funds, reduction of unnecessary expenses), and pausing hiring. Further to reconfigure and transform the business model, these SMEs started integrating digital technologies, diversifying business networks, and tapping new markets in Asia and the USA. Moreover, new industries have emerged, and SMEs have expanded their businesses into new ones. The high technology software business has been able to cope with the situation very well, leading to increased demand for skilled software developers. This phenomenon used to be global, but along with the remote work, SMEs have realized that location plays no role. Thus, demand is now global. SMEs recall that they only
considered how to minimize the damages, not if the new situation could benefit them.

We also find that DCs (i.e., sensing, seizing, and reconfiguring) reinforce strategic agility. For instance, the sensing capability of B2B SMEs helped detect the changes in the business environment. In turn, the seizing capability facilitated agile practices such as remote meetings that saved travel costs and other financial expenses while maintaining customer relations. In addition, the reconfiguring capability (integration of digital technologies and access to new markets and customers) enhanced strategic agility due to the alteration of the traditional business model to a digital business model using online platforms, including Microsoft teams. Taken together, DCs heightened the strategic agility of B2B SMEs, fostering networks, new projects, international markets, and digital transformation.

5. Discussion and implications

The COVID-19 pandemic has created significant challenges for firms across the globe, and a large number of firms have failed to cope with the challenges posed by the pandemic (cf. Amankwah-Amoah, Khan, & Wood, 2021). Those firms that have survived or coped well during the pandemic offer interesting insights to study their behavior and the capabilities that they have utilized to create value during the pandemic. In this paper, we aim to shed light on the role of dynamic and agile capabilities of B2B high-tech SMEs originating from Finland and demonstrate the role of dynamic and strategic agility capabilities in the survival and growth of these SMEs during the COVID-19 pandemic.

The European economy is dominated by SMEs (99% of the 15.8 million businesses in the EU region) (European Commission, 2017), and the B2B sector is dependent on SMEs’ products and services (Kottika et al., 2020). However, the current COVID-19 pandemic created unfavorable social, economic, and financial conditions for B2B SMEs. For example, the overall GDP of the European area fell by 6.8%, and SMEs’ turnover suffered at least an 80% loss, with an EU average loss of about 50% (SME United, 2020). In this paper, by focusing on the case of high-tech B2B SMEs in an advanced economy (Finland), we explore how DCs and strategic agility facilitate the survival of B2B SMEs during different phases of the COVID-19 pandemic.

The findings suggest that the case SMEs enacted different processes and utilized resources and capabilities in creative ways to mitigate the impact of COVID-19 on their operations. Our findings establish that the case SMEs adjusted their business models to deal with the pandemic, such as remote working and efficient use of IT and communications tools to connect with the employees and customers. These findings support the past scholarship in that SMEs are driven toward digital capabilities since the COVID-19 inflicted disruptions may open new business opportunities that can create sustained value for SMEs.

The case SMEs also became more agile in dealing with COVID-19. They used the sensing capability to proactively create propositions that offered the strategic agility and options that they could utilize to (re)configure their resources when needed (Teece et al., 2016) to seize the opportunities (Cannas, 2021; Matarazzo et al., 2021). The findings further suggest that the outbreak of COVID-19 triggered a fight-or-flight survival instinct among B2B SMEs due to unprecedented levels of market uncertainty. The business activities were adversely impacted and many projects were stopped temporarily, thereby putting customer relations at risk. As such, the sensing capability of B2B SMEs further allowed them to identify the market threats and opportunities and understand the prevailing market situation, as stressed in some past studies (e.g., Kaile et al., 2019; Matarazzo et al., 2021). Accordingly, B2B SMEs seized the identified threats and opportunities by reconfiguring their business models, face-to-face, and online operations. The digital technologies facilitated the online presence and promoted communication with existing and new customers. Drawing on our empirical findings and borrowing from the B2B and entrepreneurial literature, we propose a framework, as shown in Fig. 1, which highlights the stages of the COVID-19 pandemic and the B2B SMEs’ evolution based on their DCs and strategic agility.  

5.1. Theoretical implications

Our study makes four key theoretical contributions. First, in understanding the survival of B2B SMEs in uncertain times, we provide insights into the role of DCs (Teece, 2007). Much research has been on the importance of DCs to attain a competitive advantage in uncertain environments (Cannas, 2021; Mention, Barlatier, & Josserand, 2019; Wilhelm, Schömer, & Maurer, 2015). However, the conventional wisdom and findings might not be generalized to the COVID-19 pandemic (Clampit et al., 2021; Papadopoulos et al., 2020). We, therefore, conducted this study during COVID-19 and explored the relevance of DCs for the survival and performance of B2B SMEs during the COVID-19. Our fine-grained analysis discovers sensing, seizing, and reconfiguring related DCs supporting the survival of B2B SMEs during difficult times of COVID-19. More specifically, we find that sensing the implications of COVID-19, our case SMEs made several adjustments (seizing and reconfiguration) in their business practices. Those include a quick shift to online meetings, temporary pause on new hiring, virtual conferences, constant communication with employees and business partners, re-budgeting of costs, utilization of slack resources (reserved funds, reduction of unnecessary expenses), diversifying business networks, and approaching new markets in Asia and the USA. Sensing and seizing the opportunities is imperative to meet customer needs in uncertain environments like COVID-19 (Wang, Hong, Li, & Gao, 2020). Further, the reconfiguration capabilities could help the B2B SMEs to continue operations in turbulent business environments by re-organizing and restructuring the resources and capabilities (Cannas, 2021).

Second, our study adds new knowledge and insights to strategic agility literature. Although the unpredictable nature of COVID-19 presents threats to the survival of B2B SMEs, it also comes up with potential opportunities (Kyllner & Nielsen, 2021). These opportunities were only retained by those SMEs that demonstrated strategic agility (Garcia-Vidal et al., 2020). The agile practices made it easy for B2B SMEs to cope with the COVID-19 crisis by quickly adapting their business practices. Specifically, our findings suggest scenario planning is a crucial strategic agility practice that facilitated B2B SMEs to draft various possibilities without comprising the elementary business activities. Scenario planning helped B2B SMEs to navigate the crises and survive COVID-19 times. Previous studies on strategic agility suggest that agile firms can respond to market dynamism and show concentration in their actions through decisive leadership (Ismail, Poolton, & Sharifi, 2011; Pereira, Badhwar, Temouri, Malik, & Tarba, 2021; Shin, Lee, Kim, & Rhim, 2015). We extend this line of research by showing that strategic agility helped B2B SMEs during the COVID-19 due to their ability to develop strategic alternatives and make thoughtful decisions in a timely manner.

Third, we revealed that DCs (i.e., sensing, seizing, and reconfiguring)
provide the bases for strategic agility, thereby promoting customer retention and business success in an uncertain environment (Doz & Kosonen, 2010; Teece, 2007). Our findings highlight that the sensing capability of B2B SMEs helped them anticipate the environmental changes (e.g., going back to normal, remote working, price cut-down, etc.). Furthermore, the seizing capability facilitated the agile practices through flexible sourcing arrangements like remote meetings that saved travel costs and other financial expenses while maintaining customer relations. Finally, the reconfiguring capability (integration of digital technologies) enhanced strategic agility due to the alteration of the traditional business model to a digital business model using online platforms, including Microsoft teams. DCs enhanced B2B SMEs’ strategic agility, which ultimately helped them foster networks, initiate new projects, expand to international markets, and attain lost turnover.

Fourth, our study makes an empirical contribution by focusing on a unique context: high-tech B2B SMEs in Finland. SMEs represent 98% of business in Finland and account for 59.6% of value-added and 65.2% of employment (European Commission, 2019). The Finish high-tech B2B SMEs were no exception to other world firms facing the damage caused by COVID-19. However, our study findings indicated that the DCs and strategic agility of high-tech B2B SMEs in Finland allowed them to escape the crises with limited longer-time damage. These SMEs established new relations and managed existing ones by promptly altering their business practices.

5.2. Limitations and future research directions

Despite the important insights of this study, it has several limitations which offer useful avenues for future research. First, in this study, we focused on a small number of cases from Finland. Thus, future studies should examine B2B SMEs from other developed markets and developing economies to understand the role of different types of capabilities in enabling SMEs to mitigate the impact of COVID-19. Second, future studies could conduct a large-scale survey and examine the role of capabilities on SMEs’ survival and performance during the different phases of external shocks. The current paper found strategic agility to be of vital importance for SMEs in surviving the COVID-19 shock. However, we analyzed strategic agility at a general level by focusing on sensing, seizing, and reconfiguring. Future studies can go more in-depth and adopt a more focused approach by analyzing context-specific agility dynamics in organizations during external shocks (e.g., marketing agility, HR agility, or supply chain agility). Also, reverse causality analysis in this context can enrich our understanding of the dynamic relationship between strategic agility and organizational survival in shocks. Future studies can focus on undertaking exploratory studies to assess whether strategic agility helps SMEs survive external shocks, whether external shocks make SMEs agile, or whether it is a fluid two-way process? Lastly, the role of entrepreneurs and their social network is important to sense and seize opportunities. Therefore, it would be interesting to examine the role of such networks on opportunity realization and discovery as SMEs deal with prolonged external shocks.

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