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Business model innovation for resilient international growth

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ABSTRACT

Our knowledge concerning the link between internationalization and business model innovation remains limited. This study investigates the change in small and medium-sized enterprises (SMEs) searching for organizational resilience. It particularly focuses on discovering *how SMEs innovate their business models when seeking organisational resilience through international growth*. In order to answer this research question, we conducted a multiple-case study of three Finnish SMEs. The critical sources of resilience were digitalization, strategic collaboration, customer intimacy, agile use of resources/expertise, and an improved revenue model. For all the case firms, significant business model innovation was required for resilient international growth. Based on the study findings, a new concept is proposed for future research: SME international resilience.

KEYWORDS

Resilience; business model; SME internationalization; organizational change; innovation

Introduction

‘Nothing is permanent but change’, people say. Fast-paced and continual changes in today’s business environments make companies’ adaptation inevitable. This external change drives a need for internal organizational change, which allows businesses to better cope and thrive amidst market turbulence. This kind of preparedness has been referred to as *organisational resilience* (Sabatino, 2016). Most small and medium-sized enterprises (SMEs) do not have the kinds of buffers against risks that large firms may have accumulated; as such, they perform worse during crises than larger companies (Lai et al., 2016). However, compared to large firms, SMEs are often considered more flexible and adaptable, which may be connected to better resilience (Arbussa et al., 2017). This presents an intriguing contradiction that calls for an in-depth examination of the factors behind SME resilience.

Organizational resilience refers to the characteristics that allow some organizations to respond faster or recover quicker than other organizations (Linnenluecke, 2017). Accordingly, previous research has examined resilience in the SME context from two different angles: preparedness to face potential crises/disruption (*ex-ante*) or the ability to bounce back after disruption (*ex-post*) (Korber & McNaughton, 2018). Additionally, SME resilience is linked with innovation (Lai et al., 2016) because it provides a means

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of renewal and adaptation amidst change. In today's turbulent world, this is particularly important, as research has shown that while SMEs deal relatively well with the first response to crises, in the long run, their growth and innovation are at risk (Kuckertz et al., 2020). The COVID-19 pandemic has demonstrated that firms that have possessed the agility to adapt quickly have been able to ensure business continuity; however, the transition paths that firms have used to adapt their business models deserve attention accordingly (Seetharaman, 2020). This study focuses on how SMEs with international growth strategies innovate their business models to increase their organizational resilience.

Business model innovation has been investigated widely during the past decade. When the company is seizing a novel opportunity, the need for business model innovation is increasing. Furthermore, literature addresses that resilience can be achieved with business model innovation (Carayannis et al., 2014). However, the links between internationalization, resilience and innovation of different business model elements is still less investigated. Therefore, this research contributes to the existing literature by analysing the interplay between business model innovation, internationalization and resilience.

This study aims to understand the means by which internationalizing SMEs build organizational resilience as they innovate their business model. It particularly investigates *how SMEs innovate their business models when seeking organisational resilience through international growth*. The study focuses on international opportunity-development processes that result in the adaptation of an existing business model or the creation of a completely new business model for international expansion.

In order to answer the research question, we conducted a case study of three SMEs. The case selection was based on the aim of the study – what the researcher wants to be able to say about the unit of analysis – and information access (Fletcher et al., 2018). The cases are Finnish SMEs representing diverse industries and engaged in developing a data-driven service innovation to broaden their portfolio or to replace it in the future. In addition, all case companies aim at growing their business internationally in the future.

In accordance with previous research (e.g. Ayala & Manzano, 2014; Parker & Ameen, 2018), we consider resilience building as a process in which companies adapt their business models and reconfigure their resources to meet future harsh market conditions. Even though none of the SMEs completely discarded their existing business model, a significant business model innovation was required for resilient international expansion. The key sources for resilience were found to be digitalization, strategic collaboration, customer intimacy, agile use of resources/expertise, and an improved/enhanced revenue model. Based on the study findings, a new concept is proposed for future research: SME international resilience.

This study contributes both to international entrepreneurship and business model innovation literature and suggests avenues for further research. Building on previous research (Asemokha et al., 2019; Child et al., 2017), it integrates perspectives from organizational resilience and business model literature to better understand the dynamics of international growth and business model innovation. Furthermore, this study contributes to the discussion on organizational resilience as it examines the less researched areas of how resilience can be purposefully developed (cf. Duchek, 2020). Hopefully, this research sheds more light on what kind of role business model innovation plays in the resilient international growth of SMEs.

Literature review

Organizational resilience and SME internationalization

For an SME, internationalization may be a strategy to gain organizational resilience. SME internationalization is a process of international opportunity development (Johanson & Vahlne, 2009; Jones & Coviello, 2005). International opportunities emerge in an iterative process of shaping and development, during which the initial ideas are elaborated, refined, changed or rejected (Dimov, 2007). This can also be reflected in the business model of the SME as business models are opportunity-centric (George & Bock, 2011).

Internationalization is accompanied by multiple types of change in the SME: the product, delivery, partners and/or competencies may need to be renewed in order to successfully expand in international markets (Nummela et al., 2006). Sometimes the changes are quite significant, leading to the reinvention of the business altogether, (Rask, 2014) but often it is a question of smaller changes in business model, including changes in customer offering, addressing customers' needs and reflections in the company's value proposition and value chain (see, e.g. Heikkilä et al., 2017). However, internationalization does not always require a business model innovation (Hennart, 2014; Hennart et al., 2021). Unfortunately, previous research has produced partly conflicting findings, and our knowledge concerning the link between internationalization and business model innovation remains yet limited (Child et al., 2017; Sainio et al., 2011).

Notably, successful business model innovation is linked to organizational resilience, that is, entrepreneurs who are able to renew over time and adjust to turbulence (Reinmoeller & Baardwijk, 2005). They not only are able to adapt to the current harsh conditions but must also be able to look ahead and prepare for any future uncertainties (Ayala & Manzano, 2014). These characteristics are in high demand when expanding operations overseas. However, entrepreneurs also need to ensure that the organizations they manage share the same characteristics when heading to international markets.

What characteristics does the international resilience of an SME incorporate? According to a systematic literature review (Linnenluecke, 2017); organizational resilience research can be classified into five lines of inquiry: (1) organizational responses to external threats, (2) organizational reliability, (3) employee strengths, (4) the adaptability of business models, or (5) design principles that reduce supply chain vulnerabilities and disruptions. This study pays particular attention to organizational resilience, which is reflected in the company business model during internationalization.

Thus, organizational resilience incorporates two fundamental characteristics: *adaptability* and *robustness*. The latter refers to stress endurance, preparedness and recovery, while the former refers to capturing new opportunities, innovation and continuous learning (Buliga et al., 2016). Resilient organizations employ different strategies when coping with changing environments, with some organizations emphasizing robustness and others focusing more on adaptability. Based on earlier research on SMEs, these companies could be expected to rely more on adaptability than robustness.

In line with previous research (Ayala & Manzano, 2014; Korber & McNaughton, 2018), we understand SME resilience as a dynamic, adaptive process of recovery and/or transformation. During SME internationalization, the company builds international resilience through stages of anticipation, coping and adaptation, resulting in a metacapability that allows it to effectively handle unexpected events and bounce back from near-

failures (Duchek, 2020). This study investigates how internationalizing SMEs build organizational resilience by innovating their business models.

Business model innovation

Business model is a widely accepted concept both by academia and the industry to describe the logic of how a company creates, captures and delivers value to the customers (Wirtz et al., 2016). Typically, it consists of elements describing what kind of product or service is offered, who the customers are, how the production is organized, who the partners are and how the company generates income. Additionally, digital technology is an integral part of the business model; in fact, the concept of business model was initiated to describe the new ways of doing business in the dot-com era (Bouwman et al., 2008; Nielsen & Lund, 2014; Osterwalder, 2004).

A company's business model is not static; whenever there are notable changes in the business environment (either in the current markets or in new target markets), the company should reconsider whether they need to innovate the elements of the business model to ensure its viability. These changes vary with regard to scope and novelty (Foss & Saebi, 2017), described in literature as business model innovation (Schneider & Spieth, 2013), business model evolution (Demil & Lecocq, 2010) or business model adaptation (Saebi et al., 2017). The use of the term *business model innovation* in this study reflects the contingent situation of the SMEs aiming to expand their business in current markets and enter new international markets.

The business model and business model innovation are both strongly linked with SME resilience. An existing business model supports SME resilience if it is robust enough to cope with changes in the environment (Haaker et al., 2017). On the other hand, by innovating its business model, an SME can capture new opportunities emerging from the changing environment (Buliga et al., 2016; Niemimaa et al., 2019). This means that an SME can seek resilience by emphasizing the robustness of the existing business model or by focusing on adaptations to the business model. Resilient SMEs have business models that are better equipped to deal with disruptions, in turn predicting entrepreneurial success (Korber & McNaughton, 2017).

There is a good amount of academic research on business model innovation (DaSilva & Turkman, 2014; Foss & Saebi, 2017; Schneider & Spieth, 2013), also with a focus on SMEs (Albats et al., 2021; Asemokha et al., 2019; Heikkilä et al., 2017; Rissanen et al., 2020; Sainio et al., 2011). However, the link between the different elements of the business model and organizational resilience is less investigated. Recent studies on organizational resilience during the COVID-19 pandemic provide us with some clues, though. First, it seems that the adoption of digital technologies and smart utilization of data played an important role when redesigning or adapting existing business processes both in big and small companies. The companies have increased the digitalization of delivery channels and production as well as created modular product portfolios so that they would better serve the changing customer needs and demand (Klein & Todesco, 2021; Margherita & Heikkilä, 2021; Seetharaman, 2020; Zahra, 2021). Second, SMEs have been increasingly seeking different forms of collaboration, strategic alliances and resizing of their supply chains (Klein & Todesco, 2021; Zahra, 2021). The third clue from the recent research is that internationally operating SMEs have invested in retaining

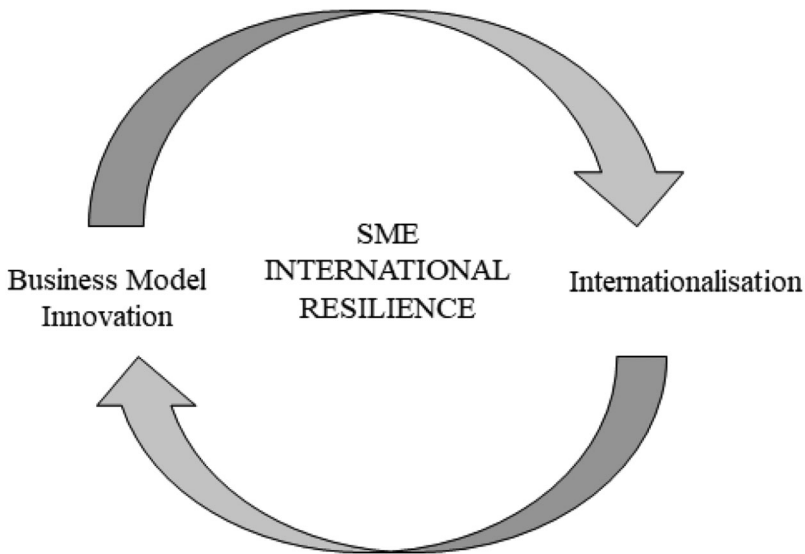


Figure 1. Organizational resilience in international growth.

existing customer relationships (Arslan et al., 2021). Last, during the pandemic, some SMEs have been able to refocus their expertise even to the extent that they have introduced additional or temporary business models (Clauss et al., 2021).

Synthesis

This study investigates how SMEs seek organizational resilience via internationalization and the accompanying business model innovation (Figure 1). It builds on literature on business models, organizational resilience and SME internationalization and investigates the key sources for resilience. Conceptually, it opens the ‘black box’ of international organizational resilience for SMEs, something that has been ignored in previous research.

The company’s business model innovation provides a suitable means of capturing the change due to internationalization and identifying the sources utilized by the company to build organizational resilience. Based on our literature review, four main sources of resilience are identified as relevant to this study: (1) digitalization to enhance the products and production with data, (2) strategic collaboration, (3) stronger customer relationships and (4) agile use of resources and expertise. These sources align quite well with the elements of a company’s business model, with one notable exception, (5) the costs and revenue streams. In order to take a holistic view of the business model that element was also included in our analysis.

Research design

This study seeks to answer how SMEs innovate their business models when they seek organizational resilience by international growth. Given the exploratory nature of this study, an inductive, qualitative approach seemed appropriate (on methodological fit, see Edmondson & McManus, 2007). This study follows a multiple-case design. In line

with Eisenhardt and Graebner (2007), we think that each case provides an interesting, rich view of the phenomenon under investigation in real-world contexts using multiple cases. Recursive cycling among the cases, emerging theory and existing literature resulted in a stronger theoretical framework.

In the case selection, purposeful critical-case sampling (Fletcher et al., 2018) was applied; thus, stressing appropriateness and access to relevant knowledge in order to get to information-rich cases producing a deep understanding of the phenomenon (Patton, 2014). The case selection criteria were the following:

- The case company had to meet the criteria of an SME in the European Union
- The case company was aiming for international growth and improved resilience
- The case company was developing data-driven services to achieve its aims

Three suitable case companies were found through a business development programme that facilitates the development of data-driven innovations. All case firms operate in international business-to-business markets, but they vary in terms of industry, age, size and international experience. This diversity was important since previous research has shown that the home-market context plays a role in the business model change of internationalizing SMEs (Child et al., 2017; Rissanen et al., 2020). Moreover, we selected case companies, which are developing data-driven services, to reflect the fact that, recently, there has been a growing interest among SMEs to search for new business opportunities based on data generated in their or their customers' operations (Ulander et al., 2019). Data-driven innovations use data as a core ingredient (Jetzek et al., 2014) to produce added value for the company's internal use or for customers. From the viewpoint of this study, it is significant that data-driven innovations can potentially change the underlying value creation mechanisms and, in turn, have a significant impact on business models (Huberty, 2015).

The organizational resilience-building process of the case companies was monitored for 1.5 years. The selected SMEs started business model innovation already before the emergence of the global pandemic and have continued the development since. We followed this development process in real-time from the start of the programme in 2020, and access to different data sources was available throughout this time. The study benefited from data triangulation (Denzin, 1978) as the data set was compiled from multiple sources, including interviews, documentary data and a survey. Additionally, secondary data, such as company websites and newspaper articles, were used to check the validity (see Table 1).

When applying to the programme, the companies had to describe their business model with a 'business model canvas' (Osterwalder & Pigneur, 2010). During the programme, the canvases were updated and in the interviews, we also asked them to evaluate their BM change. In all cases, the changes were substantial.

For the interviews, key informants (i.e. the most knowledgeable persons related to the expected business model innovation and its aims) from each company were chosen. Typically, these persons were also actively involved in the business development programme as participants; additionally, they were responsible for business development and data-driven innovation initiatives in their respective organizations. The number of

Table 1. Data sources used in the study.

Data source	Data type	Time of data collection	Use of the data in this study
Applications to the programme	Qualitative	April- June 2020	Understand the goals of the companies and their situation prior to the programme
Responses to Innovation Radar survey	Quantitative	October 2020	Grasp the companies' know-how in innovation management
Companies' new business model canvases and change plans	Qualitative	January- February 2021	Understand companies' future goals, innovative business models and the roadmap to achieving those
Interviews of directors responsible for business development	Qualitative	March- April 2021	Understand the rationale for developing data-driven innovation and the related business model innovation
Websites and news	Qualitative	April 2020 - December 2021	To gather general information on the case companies, their actions and strategies during the research period

interviewees varied from one to three in each company. The details of the case companies and the interviews are summarized in [Table 2](#).

The data analysis followed the mainstream pattern of inductive theory-building: starting with thick descriptions from the data, coding it with first-order codes, raising the abstraction level with second-order themes (see [appendix 1](#) for the coding framework), and constantly comparing emerging theory and data (see Eisenhardt et al., 2016). In the first stage of the analysis, a detailed description of the case was constructed. In the second stage, inductive analysis was performed to identify themes related to business model change, data-driven services and international growth. In this phase, the QSR NVivo 12 software was used to facilitate the searching, coding, and organizing of the data. In order to assure a systematic and rigorous analysis of the data, the emergent themes were clustered into thematic categories, following the recommendations of Gioia et al. (2013).

The interviews served as the main source of data due to their richness. In case an aspect of the business model remained unclear, additional information was searched from the business model canvases. They also offered a useful validity check in order to avoid memory bias, together with the applications to the programme. The applications contained detailed information of the companies and their future goals, which were also discussed in the interviews. The diverse sources of data complemented each other and allowed us to form a more holistic overview and a 'thick description' of both business model innovation and internationalization processes.

Table 2. Case companies and the conducted interviews.

Company	Established	Employees	Industry /Sector	Product/ Service	Interview duration & interviewees
Alpha	2007 (has a 70+-year history)	48	Metal and engineering	Products	60 min Managing director Sales director Project manager
Beta	1975	120	Management consulting	Service	57 min Business Development Director
Gamma	2004	21	Engineering services	Product & service	56 min Director of Business Development

Findings

Business model innovation in the case companies

Case company *Alpha* has over 70 years of history and operates in the domestic and international markets. The company specializes in kitchen, shop and hospital fixtures for various purposes. Until today, the company's offering has consisted of physical products, and the data-driven service under development is the first service concept for the company. As the company is preparing to add a service element to its physical products, it also needs to introduce some alterations to its existing products. The fixtures need to be equipped with sensors, allowing them to be integrated into the data processes. Moreover, the company is planning to take a completely different approach to product delivery.

The company was motivated to engage in data-driven service innovation in order to enhance its competitiveness, offer higher value-added to the customers and grow internationally. Additionally, market change has opened up an opportunity to deliver the same physical product with additional services to the same end users in a very different way.

In the future, the core value propositions to the customers and to the end users are expected to remain unchanged. Nevertheless, the offered value to customers will be more comprehensive due to the additional service and therefore the way the solution will be sold and delivered to the customer will change. Furthermore, the customers deciding on procurement will also change, but the end users will remain the same. The relationship with customers and end users will be different compared to the current project-based business in which the customer buys fixtures when building or renovating their premises. With the solution containing data-based services, the company will be in continuous contact with the customers and are expected to continuously deliver value-added; the revenue streams will concurrently become continuous.

In order to successfully deliver the new solution, the company needs to develop some capabilities and acquire new resources. It also must collaborate with new kinds of network partners in the development and delivery of the service. In terms of collaboration, there are two options: collaborating with multiple, equal international partners or collaborating exclusively with a selected partner.

Case company *Beta* is an established service provider that operates its international offices in multiple countries. At the time of the study, the company operated in Europe and Asia but was preparing to withdraw from Asia after a strategic decision. The company had followed its customers to the markets they operated in; however, with the data-based service solution, it decided to take a more selective approach to its geographical scope. The company is developing a continuous service for human resources management within organizations. The service builds on the data created by existing operations but it needs to be refined with data analytics tools before it can be utilized in data-based services.

With these novel services, the company is seeking to expand. On the one hand, the company strives to offer higher value-added to its customers. On the other hand, the developed data-based service offers the possibility to improve the efficiency of internal operations and, thus, become a more solid basis for scalability.

The customer value proposition is complemented through novel elements enabled via data. The company has also decided to be more selective in terms of the customer

segments. New offerings are not available to all existing customers; the company concentrates its energy on medium-sized companies that it perceives as the most promising customer segments for growth and scaling.

Moreover, the aim is to build a continuous customer relationship to replace the existing project-based relationships. This entails two important implications for the company's operations: first, the revenue stream is continuous as opposed to the current project-based fluctuations. Second, the company needs to engage more proactively with the customer to maintain an up-to-date understanding of the customer's situation and needs. This requires changes in how the customer relationships are managed; the company is currently about to launch a key account-manager model that introduces new activities into the organization.

In addition to setting up new internal activities, the company needs to collaborate with new kinds of partners. There is a need for technological partners, particularly in the development phase but also in the longer term.

Case company *Gamma* is an internationally operating, well-established company that offers physical products to customers in over 30 countries. The company has distribution partners in Europe, Asia and Latin America. Their offerings consist mainly of a physical product (testing equipment) but also includes some technical services. The company is developing a data-based service that utilizes the data that their products currently accumulate. Hence, there is no need to alter the physical product; the way the data is utilized is the focal area of development.

The company targets its existing customers using the data-based service but reaches them through novel channels: instead of relying on channel partners, the company sells the service directly to customers. In addition to their current customers, the company is also planning to reach new customers. Serving the customers directly without intermediaries entails closer customer relationships.

The delivery of this data-based service is based on activities that are fundamentally different from the production of the current physical offering. In addition, algorithm-based service production requires different resources and structures than the company's physical offering. Furthermore, the company is also seeking to collaborate with new kinds of network partners. The revenue logic of the new services is based on monthly invoicing as opposed to the project-based investments of the physical product offering.

As described above, the business model innovation is evident in all case SMEs. The following table highlights some of the key aspects emphasized by the companies. Thereafter, the following sections link the changes of business model to the development of SMEs' international resilience (Table 3).

In terms of robustness and adaptability, each of the three examined firms are seeking to enhance both of them along quite similar lines. Interviewees from all three companies tell that they are striving towards higher value added and international growth that can be seen to add to the robustness of the business as shown in the following quotes:

'International growth, strengthening the brand and our visibility and the possibilities we offer to our customers are kind of drivers behind this also' (Alpha)

'Our biggest goal is that around 2025, 70 percent of our customer relationships will be continuous, it is now around 20 percent ... Our strategic objective is to grow from 13 million Euros to 20 million Euros.'(Beta)

Table 3. Summary of the drivers of change and the case companies' approaches to the business model innovation.

	Alpha	Beta	Gamma
Change driver	Markets are changing, which necessitates company change and opens an opportunity for higher value-added offering	Company wants to increase the continuous invoicing business role and reduce the investment-type business role; it strives to achieve growth	Company seeks to grow its business by adding subscription- type services to its offering
Role of data-driven service in the firm	Current initiative concerns only one product line in the company; new solution largely (not completely) replaces existing business	Data-driven service is envisioned to become a focal part of the future offering	Data-driven service will be offered alongside the existing selection of physical products and accompanying maintaining service
New value proposition	Novel, higher value-added to same users	Novel, higher value-added to same users, but also new kind of customers	Novel, higher value-added to same users, but also new kind of customers
Customer segmentation	The end users remain the same, but the customer purchasing the solution changes. Focus on high-end products, which delimits the potential customer segments	Sharper focus on selected segments to enable meeting customer needs with reasonable costs	Novel services are offered to the same customers as the existing product-based offering. New kinds of customers are also expected

'The longer term goal is to create more of these kinds of service offerings ... it is growth that we are seeking' (Gamma)

On the other hand, the firms also report goals related to adaptability through the BM innovation at hand. Alpha pursues a mutually beneficial partnership model with its customers. According to the interviewees, this type of partnership entails developing the services and products together with customers. Quite similarly, Beta perceives that the service and BM innovation brings orderliness and method to the operations of the firm and the customer, and it is an important factor in responding to customers' changing needs. Finally, representatives of Gamma report that the BM innovation that builds on an innovative combination of the existing base of installed equipment and novel services, is an essential resilience-adding factor for them.

Building international resilience through the digitalization of the service

The nature of the new offering is one of the factors driving the case companies' resilience. Alpha is introducing a novel digital element to its solution, Gamma is beginning to make use of the data that the physical products they deliver are producing, and Beta is also preparing to make use of the data that is accumulated by its services in a completely new way: *'we see the value in combining data sources and thereby processing more diverse data into a business'* (Beta).

Introducing a digital element into the solution enables Alpha to offer higher or more holistic value-added to the users: *'We envision that we are no longer the supplier of one piece of metal or a wall element, but that we deliver something else to the customer's value chain and this way bring them cost savings'* (Alpha).

In a similar vein, Gamma builds on the digital element of the new service. Importantly, there is the potential to grow internationally by offering novelty to the existing customers:

‘The long-term goal is to create more of these kinds of service offerings that naturally build on the installed equipment base we have delivered all over the world’ (Gamma).

In addition to leveraging digitalization and the accumulated data for higher value-added, Gamma and Beta see the potential to serve also new kinds of carefully selected customer groups:

By raising the value-added of the data, we can offer new services to our existing customers ... Being able to forecast system-level performance adds value to new customer groups, where we have some activity currently, but in the future, I see there are good possibilities to sell them this service a lot more than we sell them our current products. (Gamma)

In other words, the companies are drawing benefits from digitalization in terms of offering novel value to existing customers but also expanding the customer base, both in the existing markets, but also new markets.

Building international resilience through strategic collaboration

The companies are building new kinds of collaborative relationships with various partners for improved resilience. First, all of the three examined companies collaborate with new partners in the development of the service. This is natural since the companies are developing something novel to them: *‘kind of development partners, those we need especially in the beginning when we don’t have the skills in-house’* (Gamma).

More interestingly, the new data-based service model means that at least two of the companies, Alpha and Beta, will develop long-term strategic collaborations with new kinds of partners. For Alpha, the need for new kinds of partners is connected, on the one hand, to the diverging nature of the activities needed to realize the new service and, on the other hand, to the firm taking a different position in the value chain.

Both Alpha and Beta are pondering on the longer-term setup in terms of their strategic collaborations. Beta may develop the service towards a platform, where they could offer services to their current competitors, whereas Alpha has the option of partnering exclusively with a selected international operator and adjusting their offering with the partner or collaborating with multiple international partners with a more generic service.

The big question here is that will we sell this only as part of our own services, or could this be developed into a platform that also our competitors could use, or in other countries some other firm. (Beta)

Well, yes, it [= the network] may be different and most probably will be somehow different ... There is some difference because we integrate this into a larger whole, and there, we have two options: we either continue as an independent operator and collaborate with different global big players equally, or we seek to develop a partner model where the value-added are interwoven with one or a few players. (Alpha)

Strategic partnerships for international resilience may hence open some alternatives to SMEs. The partnership model or logic (exclusive vs. non-exclusive) is one critical question, and the potential for platform-type business with multidirectional value exchanges is another one.

Building international resilience through customer intimacy

The examined companies are building the data-based service in response to an observed customer need. The companies have already developed good customer understanding and are therefore in a good position to boost their resilience through customer intimacy. All of the companies, however, are developing a new kind of model to interact with the customers.

Linked to the customer relationships, key account management activity will have a significantly bigger role since our consultant cannot sit at the office and wait for assignments' (Beta).

As the quote above indicates, the new customer relationships entail a different type of commitment from both the service provider and the customers, as the data-based services will be integrated into the customer organization's processes. An interviewee from Gamma stated that *'we are moving to the direction where we can automatically collect data if the customer wishes so'*.

Also, the two other companies reported development towards tighter customer integration:

If a customer buys a continuous service package from us, we integrate the customer's data and our data. (Beta)

We are producing solutions to the customer, and we want to refine the collaboration and know-how so that we can form these kind[s] of mutual partnerships between us and the customers. (Alpha)

To integrate with the service provider, the customer often needs to adjust some operational aspects. In the majority of contexts, data and the interfaces for sharing data are neither commensurate nor standardized, and hence the integration may be highly specific to the service provider. Therefore, some degree of customer lock-in can be expected. The lock-in may be favourable for the service provider, but from the customer's perspective, there needs to be a balance between the value-added and the potential drawbacks of the lock-in.

Instead of analysing the lock-in effects, the interviewees emphasize the mutual benefits from the use of data. It was noted that the benefit of data-based service *'is kind of reliability and order both to us and the customer'* (Beta).

The customers appeared to be truly engaged in the development process:

'The customers with whom we have developed this have been enthusiastic and co-operative, and they see this as an opportunity to develop their operations models also in the future' (Alpha).

Genuine customer involvement in service development enhances the possibilities of offering lasting value-added to the customer and is thus a potential contributor to the customer's willingness to be tied to a business relationship that is difficult to replace. Moreover, the examined companies are SMEs, and hence, the power balance between them and their customers is very different from the situation in, for example, consumer (B2C) markets where a service provider often dictates the rules.

Beta and Alpha are targeting narrower, more carefully focused segments than earlier. On the one hand, this is a necessity for them to deeply understand the needs of the

customers; on the other hand, there is a sufficient market to be targeted in the international arena.

We have also defined customer segments more specifically. Even though we have many large corporations as customers, in this strategic service development, we have medium-sized enterprises as our main customer segment. (Beta)

Even though digital products typically are scalable by nature, this is not necessarily always the case. The need to be close to the customer hinders the scalability of the data-based solution in the case of Beta. Their service is quite human-centred, and therefore there are considerable differences between countries or market areas.

Building international resilience through the agile use of resources and expertise

All of the three examined companies are also driving their resilience through changes in their resource base. Primarily there is the need to make the resource pool of the company more versatile, but also to enhance the capabilities to make use of the resources.

Particularly, the companies with a strong track record in producing physical products recognize the potential in developing their resource base and the use of resources:

We are a traditional hardware manufacturer, and we have welders in house, so he [the former CEO] playfully said that what if in the future the welders would-be coders. So, we are seeking new business with an open mind. (Alpha)

Selling and producing these services is fundamentally different from the activities for delivering our products, so there are operative requirements that we probably cannot meet with our existing operative structures. (Gamma)

Alongside deeper connections with customers and more profound strategic partnerships, the companies are facing the need or an opportunity of recalibrating their processes.

In the sense that we start with focal partners, key activities, resources ... so more from welders to coders, so the world of software and apps becomes more and more important, and the question of how we can integrate to the customers' logistics processes/systems. (Alpha)

Operationally there is a huge difference in how you sell this kind of subscription-based licence and how you manage it. It is a very different world. (Gamma)

We believe that we have [the] know-how, which will continue to be important for our customers, but we have to make sure that we don't work in old-fashioned ways or without utilizing data. (Beta)

Introduction of novel services to new markets requires expertise, which the company does not yet possess. Instead of building a resource base within the company, the case companies rely on a pool of resources, which they can access through their partner network. However, the business model innovation also changes the nature of some of the partnerships, which become strategic for the company operations. Therefore, the agile use of resources as a driver of SME international resilience is closely connected to the strategic partnerships driver.

Building international resilience through an improved revenue model

All three companies are evidently developing their revenue model from reliance on project-based investments to continuous invoicing.

In terms of the cash flow, our current business is investment-based, and in that sense, the new data-based business is more like subscription-based, [a] kind of continuous invoicing. And there is a significant difference. (Gamma)

Yes, it is probably a monthly fee plus project-based income. We have interviewed 50 CEOs, and it was a positive surprise to us that so many of them wanted to share data and how many of them were ready to pay thousands of euros per month to get good service. (Beta)

When it comes to the revenue model, the case companies did not mention that there would be differences between countries that they are targeting; however, the companies face new requirements from the customers to be able to shift to continuous invoicing.

If it [the service] doesn't offer cumulative data, there is no reason [for a customer to pay monthly]. If we can offer them value-added because we know more than they do, there is a reason to buy the service on an ongoing basis. (Beta)

The change of revenue logic is tightly intertwined with the change in customer relationships and increasing intimacy due to the data-based services. Continuous exchange of data increases the need for regular interaction between the case companies and their customers, which creates a sound basis for continuous invoicing.

To highlight the most notable findings presented above, [Table 4](#) summarizes our findings of the SMEs' means to build international resilience. As it can be seen in the

Table 4. Means to build international resilience.

Means	Impact on Internationalization and Resilience
<i>Digitalisation of the Service</i>	All case companies added novel digital elements to their solutions, in most cases utilizing the data collected from the installed equipment base. With the novel digital services the SMEs offer higher and more comprehensive value-added to their customers. This allows the SMEs to gain a more prominent position in the market, also internationally.
<i>Strategic Collaboration</i>	Alpha and Beta aim at changing their position in the value chain. Alpha is considering collaborating exclusively with one international operator and adjusting offering accordingly, or collaborating with multiple international partners with a more generic service. While the first option provides an easier way to enter new countries, the second option requires more resources but would be more resilient (not dependent on one single collaborator). Beta, in turn, is developing their service towards a platform serving international markets. They could potentially offer services to their current competitors as well. Gamma focuses on the collaboration with critical product development partners.
<i>Customer Intimacy</i>	The companies have already developed good customer understanding and are therefore in a good position to boost their resilience through customer intimacy. Relationships with customers are developed to be tighter, as the data-based services are integrated into the customer organization's processes. The new offering can increase customer stickiness or lock-in.
<i>Agile Use of Resources and Expertise</i>	The companies are increasing their resilience by developing the resource base to be more versatile. Particularly the companies involved in producing physical products engage in augmenting their resource base. This includes the in-house resources, but also the ones accessed through partnerships. Both, the value-adding, and the sales processes are re-calibrated.
<i>Improved Revenue Model</i>	All case companies are moving from project based pricing to monthly fees. Continuous invoicing provides steady money flow, and thus increases robustness of the businesses.

table, all four means of building international resilience are relevant to all of the three examined companies.

Implications on the SMEs' business models

As the changes in the business models of the case companies are sizable, the respondents also discussed the relationship between the old and new business models.

One of the companies, Beta, is currently in the service business and considers that the adaptations needed to provide the new data-based service is not contradicting their old business model. They see that the resilience towards changing customer needs can be secured by the changed business model.

[The] Recruitment service business has been gradually changing in the past years and in the near future, it will change a lot. Of course, we need to find effective ways to serve our customers, or otherwise, they will turn to somewhere else... This new data-based business model will replace our old business model. I do not see this as cannibalism, but on the contrary, I see that the old business models are changing even if core service is maintained. It transforms the business, the way it is carried out and value-added. (Beta)

Beta sees the old business model being replaced by the new one and recognizes that there will be a necessary transition period. Similar to Beta, Alpha sees that the new business model may not serve the smallest B2B customers whose operations do not generate enough data to provide enough value-added.

Some small hospitals may still want certain old-fashioned cabinets because, with their current operation volumes, they do not really need our high-end data-based service. (Alpha)

Two other companies, Alpha and Gamma, consider the changes in their business model so fundamental that they have decided to separate the new service from the old product business altogether. Already during the research period, Alpha divided into two parallel companies and in a few years, Gamma will operate two separate companies:

In order to get this new service on its feet and flourish, it needs to be separated from the existing business altogether... It means that there's a future where we have two companies, one provides the physical product, and the other focuses on this new service business. The journey will take a few years; now we have a team of people, later a business unit will be providing the service, and at some point, a separate service business company will be established. (Gamma)

To summarize, in Beta the new business model will replace the old business model after a transition period, whereas Alpha and Gamma will be separating the new business model into an independent company to better enable its development.

Discussion

This study investigates how SMEs innovate their business models when seeking organizational resilience through international growth, particularly in the context in which the business model innovation includes the development of data-driven services. Thus, in contrast to the born-digital firms examined by Monaghan et al. (2020), the SMEs studied here were *in the process of becoming digital*. In spite of the early phases of this development, all the case companies agreed on the importance of data-driven services

and considered them the key to resilient international growth. A business model innovation was visible in all case companies in order to improve the value-added to customers, for example, via accumulated customer data.

Our findings contribute to the literature on organizational resilience by unifying the key changes in the business model. The sources of organizational resilience for internationalizing SMEs were digitalization, strategic collaboration, customer intimacy, agile use of resources/expertise, and an improved/enhanced revenue model. Furthermore, we respond to the calls for better understanding the link between international growth and business model innovation (Child et al., 2017; Sainio et al., 2011). All case companies made significant changes in their business models in order to achieve international growth. The findings support recent literature that new data-based service models open possibilities for the SMEs to take different positions in the value chain in the hopes of entering into new strategic collaborations with international companies and even favours co-opetition (Klein & Todesco, 2021; Zahra, 2021). However, as evidenced by one of the examined companies, SMEs may be unable to envision what kinds of partners can help enhance the adaptability and/or robustness of the service and, thus, may opt to perform the production services internally, which may hinder resilience.

The new services of the case companies mainly build on data accumulated while customers are using the products or solutions. By combining different data sources and utilizing advanced analytics, the firms can provide their customers with value-adding information. To achieve this in a resilient manner, the firms must deeply understand the needs of their customers and be able to foresee potential changes in their needs. In other words, they must have a good understanding of the customers' operations and use of their products/services (Arslan et al., 2021). Moreover, the companies must be able to analyse potential additional customer groups; that is, which kind of actors have needs with similar characteristics to those of their existing customers. Interestingly, the accumulating data may also lead to 'customer lock-in' (Fliess & Volkers, 2019); that is, due to high customer intimacy and sunk costs, changing to another supplier can become impossible or an unprofitable option. This highlights the liabilities that tighter customer integration may include, an aspect, which has been less discussed in prior research.

Driving resilience also necessitates changes to the resource base. The case firms brought up the need for greater digitalization and analytics expertise and capabilities to sell the data-based services to international markets. The firms note that despite the offering being digital, the need to be close to the customer somewhat hinders scalability. In addition, despite the increasing role of digitalization, physical infrastructure and location play an important role to these firms, which is notably different from the setting of born digital firms (Monaghan et al., 2020; Vadana et al., 2019). The means and resources to offer support services internationally or substantially differing customer needs between countries has affected the firms' decisions on market entry.

All three case companies are seeking resilience by changing the revenue model from a project- or transaction-based pricing to continuous subscriptions, thus towards a more profit-sharing revenue logic (see Sainio & Marjakoski, 2009). Compared to the fluctuating revenue flows of current business models, constant income makes a big difference in the stability of the SMEs' operations. It also adds to the operational predictability of the firm.



Figure 2. Construction of SME international resilience.

Transforming an SME into an international data-based service business requires substantial and highly interrelated changes; thus, simple incremental adaptations to the current business model are not a viable option. Instead, the case companies have recognized a transition period of a few years during which the firm needs to run two business models in parallel. The firm may either gradually give up the old business model or separate the two business models into different companies. Notably, this transition period is a challenging time for SMEs that have limited resources. Therefore, it is possible that the international growth of these companies will have features of ‘resource scavenging’; a phenomenon, which has been previously identified among internationalizing high-tech companies (Hewerdine et al., 2014).

Based on the findings of our exploratory study, a novel construct, SME international resilience (Figure 2) combining organizational resilience, business model innovation and international growth in the SME context is proposed for use in future studies. At the heart of the construct lies the organizational transformation process (cf. Pettigrew, 1987), in this case, the company’s internationalization via business model innovation. Successful transformation leads to increased international organizational resilience through the five forces identified in the empirical research: digitalization, strategic collaboration, customer intimacy, agile use of resources/expertise, and an improved/enhanced revenue model. Hopefully, the construct will prove useful in later studies on the resilient international growth of SMEs.

From managers’ perspective, this study adds to the understanding of the drivers of resilience for an internationalizing SME. Grasping these interconnected drivers may aid managers in discerning ways to strengthen the robustness or the adaptability of their firm’s business model. Moreover, the research findings help in building awareness of the extent of business model innovations that are associated with building international resilience.

Conclusions

This study analysed how SMEs innovate their business models when seeking organizational resilience through international growth. We conducted a multiple-case study of three Finnish SMEs. The findings show how the internationalizing SMEs improved their resilience by innovating their business models. For all the case firms, significant business model innovation was required for resilient international growth.

Our study contributes to international entrepreneurship research by deepening our understanding on how SMEs with international growth strategies innovate their business

models to increase their organizational resilience. Based on our findings, we propose a new construct of SME international resilience, which brings forward the interplay between business model innovation, internationalization and resilience. It proposes that international resilience is created in a process of business model innovation especially through the five forces identified in our empirical research: digitalization, strategic collaboration, customer intimacy, agile use of resources/expertise, and improved revenue model. The construct highlights the possibility that SMEs can purposefully build resilience and our framework can be applied in future studies in which scholars want to investigate this process. We would naturally hope that other scholars would adopt our construct and apply it in their research. When applying the construct in empirical studies, they should be aware of the intertwined processes of business model innovation and internationalization. Especially with a qualitative approach, they should be able to produce a more nuanced narrative of the two processes and identify links between them. On the other hand, quantitative studies would benefit from the construct when operationalizing their key variables.

Our study has also important managerial implications: the first is the need for fostering digital capabilities of SMEs. All our case companies recognized the potential of building international organizational resilience through the digitalization of the service, but also sought help from an accelerator programme to improve their understanding of and practical capabilities regarding digitalization. This implies that it could be beneficial, for example, to include support actions for digitalization as part of different international accelerator programmes. The second is a call for strategic network thinking in SMEs. Two out of the five drivers for resilience – strategic collaboration and proximity to customers – require the company to have the courage to open up and share information with outsiders, but at the same time may necessitate breaking away from previous cooperation arrangements. In practice, this may mean radical change in the organization culture. Without investment in strategic network thinking this radical change may never be realized in SMEs.

This study is a promising beginning for further research but we have only scratched the surface. However, as any study, also ours has some limitations. Our findings are drawn from a study of a small number of case SMEs. Therefore, we aimed at theoretical generalization (cf. Eisenhardt & Graebner, 2007), not at generalization to a specific population. Consequently, the developed framework may be useful and valid beyond the observed cases. Nevertheless, we think that it would not be transferable, for example, to micro-sized companies. As the development of the data-driven service calls for some resources, it might not be feasible for such a small venture. Yet, becoming part of a data network is very well an option for the smallest enterprises. Clearly, this is a research topic that could be explored further. Second, the influence of the home market context may have an effect on the research findings. The Finnish home market is very limited in size, and therefore, the findings might not translate well into large home market contexts. More research is needed to clarify how the characteristics of the home market affects business model innovation for resilient international growth.

A further interesting research topic could be to link organizational resilience also with nonlinear internationalization (cf. Vissak & Francioni, 2013), in particular what kind of impact de-internationalization has on international resilience. Additionally, the model could be extended to cover internationalization outcomes. Future research could

empirically study the implications of international resilience on internationalization outcomes, for example, through a more nuanced narrative of the processes, or alternatively through quantitative evaluation of resilience and internationalization variables.

Indeed, this paper is an outcome of a collaboration between scholars with differing backgrounds but sharing an interest in advancing research of SMEs. We argue that such interdisciplinary efforts are needed to prepare SMEs to respond to the smaller changes in the markets, or to unexpected crises and disruptions, such as Covid-19 or the War in Ukraine.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix 1. Coding framework

First order codes

(based on the business model canvas, (Osterwalder & Pigneur, 2010)

Key partners
Key activities
Key resources
Value proposition
Customer relationship
Channels
Customer segments
Cost structure
Revenue streams

Second order codes

(derived from analytical examination of the data on the first order codes

- Digitalization of the service
- Strategic collaboration
- Customer intimacy
- Agile use of resources and expertise
- Improved revenue model