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Leveraging Digital Platforms Through Business Model Innovation in SMEs: A Capability Perspective

Completed Research Full Paper

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Abstract

Digital transformation affects all industries and becomes crucial to firms' success. Yet, especially small and medium-sized enterprises (SMEs) lack the competency and capacity to digitalize their processes. Importantly, mere technological solutions are not sufficient for sustained competitive advantage. Firms need to adjust their business model to benefit from digital technologies. We investigate SMEs' capabilities to leverage digital platforms through business model innovation. Our analysis is based on a multi-year case study of a business network of four textile firms, who together built and introduced a platform to collaborate on new product developments. The extent of changes in these firms' business models varies significantly after implementing a digital collaboration platform. We identify critical capabilities enabling firms to leverage the platform through changes in business models. More importantly, we find SMEs' operational capabilities closely related to dynamic capabilities, ultimately determining how firms leverage digital platforms.

Keywords

Business Model Innovation, Digital Platform, Capabilities, Small and Medium-Sized Enterprises, SME.

Introduction

In today's increasingly connected world, firms need to embrace digital transformation (Fitzgerald et al. 2014; van der Meulen et al. 2020). Digital transformation is a process that triggers significant changes in organizations through "combinations of information, computing, communication, and connectivity technologies" (Vial 2019, p. 4). In developing and introducing digital technologies, firms aim for sustained competitive advantage (Baiyere et al. 2020). The associated digital transformation projects involve extensive investments in information technology (IT) (Gregory et al. 2018). Technology itself, however, has no objective economic value until it is directly or indirectly leveraged through a firm's business model (Chesbrough 2010). Hence, to benefit from digital technologies, firms need to consider the implications for their business model. Such considerations may result in adapting the current business model or introducing a new business model.

In business networks, digital platforms as modular infrastructures connecting different actors have become a dominant approach for digital transformation (De Reuver et al. 2018; Vial 2019; Yoo et al.

2010). Business networks are defined as loosely coupled, flexible, and evolving systems that span more than two firms that engage in relationships to achieve a joint (business) objective and overcome resource limitations (Halinen & Törnroos, 2005). Small and medium-sized enterprises (SMEs), which are characterized by limited resources (e.g., assets, employees) and by highly specialized skills, are often organized in business networks to work closely with other local SMEs (Mendikoa et al. 2008). Hence, it is not surprising that SMEs often rely on digital platforms on their path toward digital transformation (Cenamor et al. 2019). At the same time, SMEs' limited resources and capabilities make the introduction of digital platforms challenging (Li et al. 2018). Costly digital transformation projects can threaten the existence of SMEs if the technology is not directly or indirectly leveraged through an appropriate business model (Chesbrough 2010). Understanding how SMEs introduce digital platforms and adjust their business models is of utmost importance for their survival. SMEs' success is crucial for the European economy, as the firms account for over 99% of all economic entities, 50% of the value-added, and almost 70% of employment in the European Union (Muller et al. 2018). However, research on SMEs introducing digital platforms, especially the role of their capabilities in this endeavor, is scarce in the digital transformation literature (Blaschke et al. 2019; Cenamor et al. 2019; Li et al. 2018; Mandviwalla and Flanagan 2021; Soluk and Kammerlander 2021). Recent studies highlight that while SMEs' digital platform use is being studied, the capability configuration (the set of observable capabilities) enabling SMEs' business model innovation in the context of digital platforms is almost entirely unexplored (Xie et al. 2022).

Thus, the following research question arises: How do SMEs' capabilities enable them to leverage digital platforms through business model innovation?

To answer this question, we accompanied a business network of four German textile firms over three years as they developed and introduced a digital collaboration platform to coordinate product development. The firms underwent the same digital transformation process together and introduced the same IT. Yet, two firms ended up with a new business model, while the remaining two firms integrated the platform into their existing business model. Following a case study approach with four firms, we adopt a capability perspective seeking to explain the different outcomes in terms of business model change triggered by the introduction of a digital platform. We start with building our conceptual framework for our study design and derive two propositions on the relationship of capabilities of different levels. We contribute to the understanding of the observed outcomes by uncovering the role of four operational capabilities – namely digital capability, agility capability, knowledge management capability, and network capability – and their interplay with the firms' dynamic capabilities.

The remainder of the paper is organized as follows. First, we provide a theoretical background on dynamic capabilities and business model innovation. Then we introduce our research approach. In the subsequent section, we present the empirical findings, followed by a discussion of our case comparisons. The paper ends with a conclusion.

Theoretical Background

Two literature streams are of particular interest for our purposes: business model innovation and dynamic capabilities. A business model describes how a firm creates value and captures it (Chesbrough 2007). Hence, it specifies the value proposition (i.e., products or services serving certain customer needs) and how it is generated and delivered to the target customer. The viability of a business model depends on its costs and revenues (Osterwalder and Pigneur 2010).

Changes in business models result from alterations and reconfigurations of the different business model elements. Firms change their business models in response to evolving market conditions (Teece 2018). According to Saebi (2015), the degree of business model changes is divided into three types. The weakest modification is the business model evolution, where only standardizations, replications, and above all, maintenance are carried out on the existing business model. In contrast, advanced adjustments are referred to as business model adaptation. Here, various business model elements are changed with varying degrees of radicality to react to external conditions. Business model innovation is the highest form of change. It includes a significant revision of a business model or even the creation of a new business model. Business model innovation always results in a radical change, such as new core activities, processes, or a reorientation of the firm.

Business models and dynamic capabilities are interdependent (Teece 2018). Changes in business models rely upon strong dynamic capabilities (Teece 2018). Dynamic capabilities are defined as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Teece et al. 1997, p. 516). They are underpinned by organizational routines and managerial skills (Helfat and Winter 2011). Firms’ overall capabilities are organized in a hierarchical structure: operational capabilities (operational routines that keep the business running), micro-foundations of dynamic capabilities (adapting and adjusting operational capabilities for making managerial decisions under uncertainty), and high-order dynamic capabilities (strategic modification of operational capabilities to address opportunities) (e.g., Teece et al. 1997). Firms frequently adapting and adjusting their operational capabilities develop micro-foundations through learned patterns, which ultimately allow them to build high-order dynamic capabilities (Helfat and Winter 2011). High-order dynamic capabilities include sensing, seizing, and transforming competencies (e.g., Teece 2014). In the context of business model changes, sensing refers to the identification of opportunities. Seizing involves changes in the business model and allocating the necessary resources to address the sensed opportunity. Transforming includes reconfiguring existing operational capabilities, investing in additional capabilities, restructuring the organization, and a cultural shift in a firm (Teece 2018).

In smaller firms, which often depend on individuals such as the owners, whose acquired skills are directly linked to the skills of the SME itself, dynamic capabilities are built upon operational capabilities and rely on the learned operational patterns (i.e., micro-foundations of dynamic capabilities) (Li et al. 2018). Based on the strong link between operational and dynamic capabilities in SMEs, we propose the following:

Proposition 1: The ability to leverage digital platforms through business model innovation is linked to SMEs’ operational capabilities, as these capabilities determine the dynamic capabilities of SMEs.

In the context of dynamic capabilities, exploration, and exploitation represent two opposing approaches to seizing opportunities (O’Reilly and Tushman 2008). Firms following an exploitative approach focus on efficiencies and short-term benefits when seizing opportunities. An exploitation approach results in minor business model changes that lean on past investments and established processes (Teece 2018). Firms with an explorative approach are more likely to experiment and innovate their business model (Chesbrough 2010). Both approaches are legitimate to seize opportunities (O’Reilly and Tushman 2008). However, firms with overall weak dynamic capabilities will seize opportunities following an exploitative or ambidextrous approach (Teece 2018). Strong dynamic capabilities, on the other hand, enable firms to additionally explore opportunities by developing new business models (O’Reilly and Tushman 2008).

Proposition 2: The ability to leverage digital platforms through business model innovation is linked to SMEs’ exploitation and exploration orientation toward the digital platform.

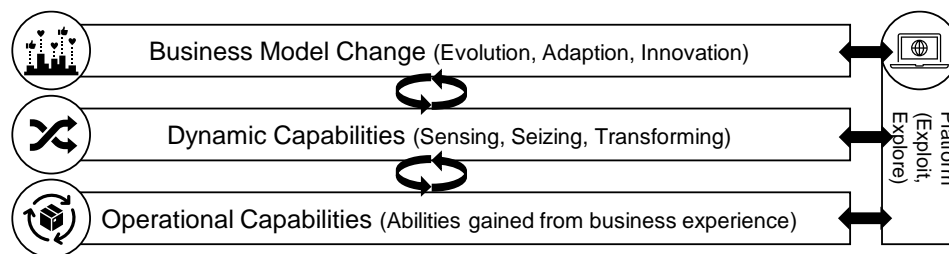


Figure 1: How SMEs Leverage Digital Platforms

The ability to simultaneously exploit and explore opportunities enables firms to change their business model to commercialize the introduction of new technologies (Chesbrough 2010). Using the lens above for our case setting of an SME network, we focus on SMEs’ operational capabilities and their interplay with micro-foundations and dynamic capabilities to investigate which factors determine the degree of the business model change. Figure 1 summarizes the foci of analysis in a conceptual framework.

Research Approach

This paper is based on a multi-year case study that examines the introduction of a digital platform in an SME network and the resulting business model changes of the network partners from a capability

perspective. The SME network constitutes the context, and the four firms serve as the unit of analysis (Yin 2018). A longitudinal case study is particularly well suited to observe the transformative impact of introducing a digital platform in our network. Our case allows us to approach theoretical constructs and unravel the underlying dynamics of phenomena that occur over time (Siggelkow 2007).

We relied on theoretical sampling for investigation (Glaser and Strauss 1967). Therefore, we selected four firms from the German textile industry along the textile value chain, working closely together as cooperating manufacturing partners. We observed interactions between the firms on the introduced platform and their business models change over three years. The partners are a weaver, a knitter, a coater, and a finisher. Without indicating arrangement or size, we label the firms hereafter as A, B, C, and D for anonymity reasons. The weaver and the knitter produce substitutes, while the coater and the finisher are downstream of the textile value chain. Hence, our network shows a typical phenomenon in that firms in the textile industry have to collaborate in a network and compete simultaneously (Hodges and Link 2018). The observed firms serve a niche market, demanding high-quality custom textiles for dedicated purposes.

Developing and producing custom textiles involves intensive communication with the customer (to capture customer requirements) and between the firms (to coordinate processes). The distributed character of the complex value creation process and the close interlocking between the firms inevitably leads to coordination and efficiency problems as well as information losses. The firms opted for a digital platform as a remedy. The entire textile development process in the investigated network can be accompanied by the introduced platform, from capturing customer requirements, through network and production process configuration, to delivery. The digital platform can compare new requirements with all previously produced products to find similar solutions. Particular focus is placed on exchanging information and knowledge between the network partners (internal processes were mostly mapped already, e.g., via ERP). Even though the focus is on the usage in the network, customers can specify requirements and manage orders as well. The shared digital platform is composed of three logical components: service configuration component, analysis component, and centralized knowledge base.

We collected data from mid-2017 (SME network before platform introduction) until the platform's introduction in the SME network in end-2020. We conducted interviews, recurring meetings, and feedback loops with the firms. All interviews (24 semi-structured interviews, ranging from 30-200 minutes) and observations (including production and office) were revisited. We followed an abductive coding approach, using dynamic capabilities as a deductive framework. Then we used inductive open coding to identify the underlying operational capabilities in the case firms. Via case comparisons, we classified the four firms according to their capabilities and determined the capability prerequisites for business model innovation.

Empirical Findings

Dynamic Capabilities and Business Model Changes

In our case study, all firms sensed that a digital platform constitutes a great opportunity to develop custom textiles. The firms realized that the full potential would only arise if different firms along the value chain were integrated due to the interdependency of the processes. Four firms came together, formulated a vision statement, and worked on a technical solution: a digital collaboration platform. Hence, all firms possess dynamic capabilities to sense new opportunities.

Seizing requires firms to identify new business models to utilize sensed opportunities (Teece et al. 1997). After the platform release, all firms integrated the platform as a resource into their existing business model. The firms use the platform as a communication tool to collaborate on textile developments. All firms instrumentalize the platform to increase efficiency and reduce costs. As mentioned, such reactions are referred to as exploitation (O'Reilly and Tushman 2008), resulting in minor business model changes that lean on existing structures and past investments (Teece 2018).

Firms C and D changed a few elements of their business models after the platform introduction. Firm D reports no changes in any business model elements except for costs through efficiency. Through decreased communication efforts with partners along the textile value chain and a growing database on textile specifications, the firm hopes to reduce the cost of product development. When asked why the firm does not facilitate the platform as a new channel to address customers, the firm states: “[...] they

[customers] will not sit down with the configurator [function of the platform to capture customer requirements] and go through all my stuff.” The statement illustrates the missing exploration focus, as the firm does not consider using the platform to address new customer segments who are willing to use the platform. Additionally, the firm stresses its exploitation focus by stating: “I only try to do what pays off.”

Contrary to firm D, firm C considers using the platform to capture customer requirements. Following the question of whether the platform will be used to address customers, the firm states: “Yes-no [...] only in step two or three [after first meeting the customer]. I could not imagine giving every customer immediate access to the platform.” Hence, firm C is only willing to use the platform for existing customers, not to address new ones. Firm C does not actively create a new business model but instead integrates the new technology into the existing business model.

Firms A and B also want to capture the efficiency in communication along the textile value chain through the platform. Unlike firms C and D, firms A and B additionally wish to use the platform to address customers. The focus of the firms lies rather on the value proposition resulting from efficiency than the reduced costs. Firm A argues the platform would increase not only efficiency but also effectiveness in communication. Both aspects reduce communication effort for the customer, allow significantly shorter delivery times, and save cost resulting from misspecifications (e.g. because the customer forgot to mention some relevant information). The firm reports: “However, the customer sometimes only specifies, for example, ‘washing and drying.’ There is no [information on] temperature. If I only wash and dry [...], for example, [at] 130, 140 degrees. And then, the coating comes on at 170 degrees, and the textile curls. [...] Then he [the customer] says: ‘Uh, what did you do to my textile?’ That means we must know what temperature the coater uses [...] to prevent this from happening.” The platform allows the exchange of such information directly between the firms without bothering the customer and avoids situations as described above. This saves time and cost on all sides and creates great value for the customer.

Moreover, firms A and B want to explore additional possibilities for utilizing the platform. Unlike firm D, firms A and B aim to address existing customers and new customer segments via the platform. Firm A states: “We may be able to address new customers. [...] we can get customers more excited about us [...]. That means we have more orders.” Firm B hopes the unique value proposition of reduced communication effort, reduced delivery time of custom textiles, and avoidance of misspecifications will increase customer loyalty and attract new customer segments. New customer segments include “[...], for example, architects who choose textiles for interior furnishings [...] they like to play with such software solutions. I think these are segments that are very innovative [...] and tech-savvy.” The firm also wants to explore the possibility of retaining and attracting employees by signaling the firm’s innovativeness.

Investigating the firms’ seizing capabilities, we find that the two firms focusing on exploiting the new technology do not significantly change their business models. The two firms creating a new business model have focused on exploring opportunities to utilize the platform.

To realize their new business model, firms A and B form a strategic alliance creating a new brand where the two firms act as one entity. The brand allows the firms to communicate the new value proposition. Them acting as one entity eliminates the risk for the customer due to misinformation (see example above). The firms commit resources to realign their structure to the new business model. For example, one firm digitized its existing data of past textile developments, hired a new employee, and set up a new working space – a substantial investment for a firm with less than 25 employees. The other firm realigned its existing resources and created a new branch, which represents the newly created brand. The firm also aligned its processes with the new business model by making the use of the platform mandatory for its sales personnel. Hence, both firms go beyond seizing to transforming their organizational structure and devoting resources to support the new business model.

The firms follow an explorative approach, as the firms repeatedly state that they do not know yet how the new brand will work out and pay off: “[We have to be] more open towards new ideas [...] without knowing from the beginning the exact outcome. You just have to try things out; there is no way around it when it comes to digitalization. You just have to do it.” (Firm B) A mindset that allows experimenting is necessary for business model innovation (Chesbrough 2010).

Analyzing the changes in business models leads us to the following conclusion. Firms C and D make minor changes in their business models. Both firms instrumentalize the platform to save costs through efficiency in product development. Changes in business models resulting from efficiency are considered a

business model evolution (Saebi 2015). As Firm C considers using the platform as a new channel to address customers, one could argue that such changes go beyond evolution and can be interpreted as business model adaptation. Firms A and B, on the other hand, use the platform to create a new business model. The firms have not only enhanced the existing value proposition (development of custom textiles more efficiently and effectively) but added new aspects to it (eliminating risk for the customer) and created a new brand to communicate the new value proposition. Such significant changes are considered a business model innovation (Saebi 2015).

Operational Capabilities

Following an open coding approach, we inductively uncovered the operational capabilities of the firms and relate them to their dynamic capabilities and changes in their business models. We were able to identify four key operational capabilities that were linked to the ability of firms to manage and adapt to changes in their dynamic environment effectively. These capabilities are digital capability, agility capability, knowledge management capability, and network capability. We analyzed the organizational factors enabling and hindering exploitative and explorative platform use within the firms to identify these capabilities.

The significance of digital capabilities was first identified. The level of digitalization has varied among the firms prior to the introduction of the platform, with the largest firm having the highest degree of internal digitalization. Nevertheless, it is noteworthy that all firms have digitized their critical operational processes to a significant degree. In contrast, the digitalization of communication between firms is relatively low. Through the introduction of enterprise information systems, all four companies have been able to build up digital capabilities for almost 20 years. However, they lack experience with inter-firm digitization. The digital capabilities represent an operational capability that enables the effective utilization of platforms. The presence of digital capabilities allows organizations to integrate technology into their operations, processes, and decision-making. This enables the firms to automate manual processes, streamline operations, and enhance collaboration and communication by exploring the new digital platform. Thus, without pre-existing digital capabilities, firms may struggle to utilize digital platforms and may miss out on the benefits that these technologies can offer.

The second critical ability is agility capability, which is closely tied to the ability and experience to manage uncertainty in business processes effectively. Our analysis revealed two of the firms had relatively stable and predictable processes with minimal external impact, while the two others faced a high degree of variability. For instance, Firm C says: “Let me put it this way, [my product] is relatively uncomplicated in terms of the pure [manufacturing process].” Firm D describes that its value creation process permits determining fairly accurately the production time. In contrast, firm A describes: “We set a production plan every day. [...] In the course of the day, it is always changed one way or another. There has never been a day where what we have previously planned has been carried out in the planned way [...]”. Whereas firm B describes that it has highly standardized and externally certified internal processes, however says the following about material deliveries from other partners: “Sometimes we cannot use the deliveries we get in the article area at all [...]”. For this reason, ad hoc subcontracts for pre-processing have to be assigned regularly so that “[...] our process is more stable, runs more efficient, or can run at all [...]”. The agility capability is thus reflecting the firms’ ability to reconfigure processes under high uncertainty quickly. In addition to the pure reconfiguration of process steps, this also includes the prompt integration of new tools and digital solutions. Therefore, the operational agility capability was also identified as a prerequisite in the observed network, which is particularly relevant for the companies’ propensity to exploration as a seizing mechanism.

The third important ability is knowledge management capability. This capability is particularly pronounced in firms where the day-to-day business is knowledge intensive. In the observed network, the knowledge intensity of the firms’ processes is heterogeneous. Firm C says regarding the imitability of its product, “[...] if you have the fabric, you just look at it, what kinds of yarn are in it? Can we do that? If so, then you can imitate the thing more or less identically”. Firm D, meanwhile, emphasizes that, in addition to pure technical knowledge, experience is the most important resource for its production and that this expertise is irretrievably lost when skilled workers leave the firm. Firm B describes an even greater knowledge intensity, which can also be a distinguishing feature: “You can’t just switch to other customers. And they can’t go to another [manufacturer] either because they don’t have anyone else who can do this.

Because sometimes things are developed over years". Firm A articulated the dependency on knowledge during observations in a factory visit by saying that if its knowledge base were deleted, its business would cease to exist. We identify the firms' ability to deal with the complexity of knowledge-intensiveness as a critical operational capability. The greater the experience with knowledge-intensive work, the more realistic the companies' assessment of the positive impact of the digital platform on information accessibility. This influenced the willingness to explore the platform. In the context of digital platforms, knowledge management capability is crucial for ensuring that the platform is being used effectively and that the organization can fully leverage the benefits of digitalization. A strong knowledge management capability enables organizations to integrate and utilize information from the digital platform effectively.

Finally, network capability plays a major role in platform adoption. The network capability is affected by the firm's position in the network, as the intensity and quantity of partner and customer relationships need to be managed depending on it. Looking at the position in the network, it becomes clear that all partners have a high level of trust in each other and work closely together. Firm D says: "Well, when we produce something, that's only half of it, and the other half is brought by [other manufacturers]. And this cannot be stressed often enough [...] they [we] simply belong together". Likewise, firm C has close relationships with the other partners; for example, it handles about 50% of its orders with firm A. However, in addition to the tight integration in the network, the two firms have outstanding network positions. Firm B particularly takes the role of the network coordinator, including customer contact. For instance, firm D says about firm B: "[B] can take direct action up to [A] or the other side [up to us]." Firm A has a different unique role, as they describe themselves as a "kind of part of the operational process" of the other firms. Firm A represents a central linkage point of the process flows in the network. The observed network capability of the firms involves building trust, communicating effectively, and coordinating activities across firms. Pronounced network capabilities can help to navigate digital ecosystems emerging around digital platforms. The strong network capabilities enable the two firms to envision the benefits of tapping into the collective knowledge and resources of a digital ecosystem, leading to a stronger engagement with the platform.

Discussion

In our case study, we observe four firms leveraging a digital collaboration platform through different business model changes. Although all four firms urge to digitize their business to be competitive, firms C and D rely on their existing business models. In contrast, firms A and B create a new business model to leverage the digital platform by establishing a brand that market the network offerings as a holistic product. Our analysis provides insights into the interplay of operational and dynamic capabilities as explanatory factors for firms' business model changes. Figure 2 summarizes the findings in our conceptual framework. By linking the firms' operational and dynamic capabilities, we can see that three of the four identified operational capabilities impact the exploratory use of the digital platform, which populates through a transformative action into a business model innovation for two of the companies. This means our first proposition, "the ability to leverage digital platforms through business model innovation is linked to SMEs' operational capabilities, as these determine the dynamic capabilities of SMEs," was confirmed in general. But it does not apply without qualification. Some of the operational capabilities, in our case, act as direct prerequisites for certain dynamic capabilities, while others are only enablers, like digital capabilities. When zooming in on the platform use, it is evident that the operational capabilities regarding agility, knowledge management, and network are related to the explorational use. The two companies with explorative use patterns were more successful in seizing the platform's opportunities. By building a new brand around the digital platform, they started a transformative process in their businesses. The new business orientation can be seen as business model innovation. Thereby our second proposition, "the ability to leverage digital platforms through business model innovation is linked to SMEs' exploitation and exploration orientation toward the digital platform," was corroborated.

Our study has several theoretical implications. First, our data indicate that their mediocre operational capability for digitalization was sufficient to identify the digital platform as an opportunity. The capability for digitalization was furthermore sufficient to enable the firms to exploit the new digital platform. Therefore, our study does not support the assumption that higher degrees of digitization may generally lead to a stronger inclination to engage with new technologies, such as a digital platform (Cenamor et al. 2019; Li et al. 2018). Our findings show that the low digital capabilities of SMEs in the absence of other

enabling capabilities tend to lead to an exploitative strategy in IT adoption and hence to business model evolution rather than innovation. This can explain why many SMEs pursue bottom-up and incremental digital transformations (Li et al. 2018; Mandviwalla and Flanagan 2021; Soluk and Kammerlander 2021).

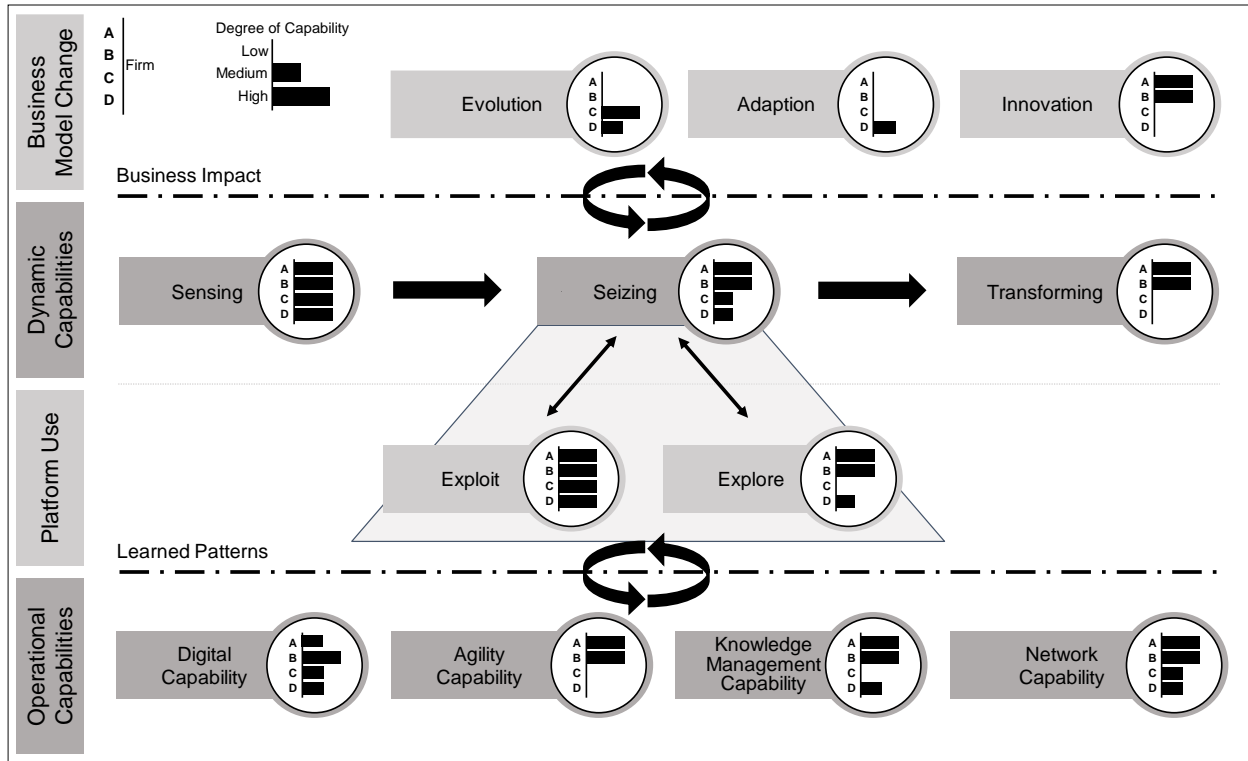


Figure 2: Case Comparison of the Capabilities and Business Model Change

Second, the ability to use the platform in an exploratory way is strongly linked with the operational capabilities of agility capability and knowledge management capability.

We observed that particular patterns learned in the operational capabilities echoed in their dynamic capabilities, resulting in an enhanced ability to innovate business models. This was evident in the exploratory approach employed by case firms A and B in utilizing the platform. On the one hand, their adeptness in managing high levels of uncertainty in daily operations facilitated the acceptance of the uncertainty associated with the digital platform's introduction. Resulting mindset: Just try it! Vial (2019) highlights that a vital capacity in digital transformation is to manage uncertainty and build mechanisms in the firm to address it. On the other hand, the capability to navigate a very complex solution space in a knowledge-intensive textile development environment enabled the firms also to navigate the complex opportunity space the digital platform offers. Resulting mindset: Consider a million possibilities! However, some studies on the use of digital platforms by SMEs also point out that a strong focus on exploration can lead to the "FOMO - fear of missing out" and fragmentation in heterogeneous IT solutions (Mandviwalla and Flanagan 2021). Thus, small firms with high knowledge management demands must consider that negative effects can arise from integrating multiple new systems.

Third, the capability to interact with other firms from a coordinating position in the network provided the firms with the imagination and the will to invoke other firms (e.g., customers) into their digital transformation. Resulting mindset: Join my transformation! This clearly emphasizes previous studies that the firm's network position shapes the firm's network capabilities and the way it manages its relationships. Network capabilities are a core competency for SMEs and determine how they create value (Cenamor et al. 2019; Mendikoa et al. 2008). We could further show empirically how the capabilities of individual network members positively affect the more passive members. The fact that all companies use the platform together creates a new business model and value streams at the network level, although only a few network companies have taken the transformation step at the company level.

The practical implications for business owners of SMEs in the digital transformation based on the study's findings are that while limited digitalization skills are sufficient for utilizing digital platforms for business model evolution, a more robust set of skills such as agility, knowledge management, and network capabilities are crucial for an exploratory and effective use of digital platforms for business model innovation. These capabilities enable SMEs to respond to uncertainty, manage and leverage knowledge, and build strong partnerships and networks, which are essential abilities for success in the digital age. Hence, business owners of SMEs should invest in building and strengthening these capabilities to leverage the benefits of digital platforms fully and drive innovation. Our observations support the notion that dynamic capabilities are based on inimitable capabilities (Teece 2014). Our case demonstrates that in SMEs, the operational capabilities are closely tied to the strategic ones, with means the firm's daily business is impacting the tools the firm can employ for digital platform exploration and related business model innovation.

As with any research, our study has some limitations. First, our sampling focused on a network in a specific industry. That way, we have no insights outside the investigated network in the German textile industry. However, we believe the results relate to prior research findings and are likely transferrable to other industrial SME contexts. Second, given that the platform was introduced but is still in further development, it is too early to tell how the business model changes impact the firms' overall business performance. Additionally, our data are mainly based on communication with the firm owners. However, the success of the introduced platform and the business models based on it will highly depend on employees' acceptance and use of the platform and how they will use it. To investigate the acceptance, we prepared a quantitative study showing good acceptance. Still, the study might have gained deeper insights from broader interviews with all platform user groups.

Conclusion

In this study, we aim to contribute to the understanding of the role of SMEs' capabilities in enabling them to succeed in digital transformation. More specifically, our results provide promising insights into which operational capabilities allow firms to commercialize digital platforms through business models. These capabilities are critical for the successful implementation of IT as part of digital transformation. By linking operational and dynamic capabilities through learned patterns, we suggest that firms can undertake feasible actions on the operational level to develop high-order dynamic capabilities, which in turn, enable and trigger them to leverage digital platforms through business model innovation. We find operational and dynamic capabilities to be closely related in SME networks. As daily and strategic operations come hand in hand, operational capabilities determine the SMEs' dynamic capabilities.

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REFERENCES

- Baiyere, A., Salmela, H., and Tapanainen, T. 2020. "Digital Transformation and the New Logics of Business Process Management," *European Journal of Information Systems* (29:3), pp. 238–259.
- Blaschke, M., Riss, U., Haki, K., and Aier, S. 2019. "Design Principles for Digital Value Co-Creation Networks: A Service-Dominant Logic Perspective," *Electronic Markets* (29:3), Springer Berlin, pp. 443–472.
- Cenamor, J., Parida, V., and Wincent, J. 2019. "How Entrepreneurial SMEs Compete through Digital Platforms: The Roles of Digital Platform Capability, Network Capability, and Ambidexterity," *Journal of Business Research* (100:4), Elsevier, pp. 196–206.
- Chesbrough, H. 2007. "Business Model Innovation: It's Not Just about Technology Anymore," *Strategy and Leadership* (35:6), pp. 12–17.
- Chesbrough, H. 2010. "Business Model Innovation: Opportunities and Barriers," *Long Range Planning* (43:2–3), pp. 354–363.

- Fitzgerald, M., Kruschwitz, N., Bonnet, D., and Welch, M. 2014. "Embracing Digital Technology: A New Strategic Imperative," *MIT Sloan Management Review* (55:1), pp. 1–12.
- Glaser, B. G., and Strauss, A. L. 1967. *The Discovery of Grounded Theory Strategies for Qualitative Research*, New Brunswick: AldineTransaction.
- Gregory, R. W., Kaganer, E., Henfridsson, O., and Ruch, T. J. 2018. "It Consumerization and the Transformation of It Governance," *MIS Quarterly: Management Information Systems* (42:4), pp. 1225–1253.
- Halinen, A., & Törnroos, J.-A. (2005). Using case methods in the study of contemporary business networks. *Journal of Business Research*, 58(9), 1285–1297.
- Helfat, C., and Winter, S. 2011. "Untangling Dynamic and Operational Capabilities: Strategy for the (N)Ever-Changing World," *Strategic Management Journal* (32), pp. 1243–1250.
- Hodges, N. J., and Link, A. N. 2018. *Knowledge-Intensive Entrepreneurship: An Analysis of the European Textile and Apparel Industries*, Cham: Springer.
- Li, L., Su, F., Zhang, W., and Mao, J. Y. 2018. "Digital Transformation by SME Entrepreneurs: A Capability Perspective," *Information Systems Journal* (28:6), pp. 1129–1157.
- Lusch, R. F., and Nambisan, S. 2015. "Service Innovation: A Service-Dominant Logic Perspective," *MIS Quarterly* (39:1), pp. 155–175.
- Mandviwalla, M., and Flanagan, R. 2021. "Small Business Digital Transformation in the Context of the Pandemic," *European Journal of Information Systems* (30:4), Taylor & Francis, pp. 359–375.
- Mendikoa, I., Sorli, M., Barbero, J. I., Carrillo, A., and Gorostiza, A. 2008. "Collaborative Product Design and Manufacturing with Inventive Approaches," *International Journal of Production Research* (46:9), pp. 2333–2344.
- van der Meulen, N., Weill, P., and Woerner, S. L. 2020. "Managing Organizational Explosions during Digital Business Transformations," *MIS Quarterly Executive* (19:3), pp. 165–182.
- Muller, P., Mattes, A., Klitou, D., Lonkeu, O.-K., Ramada, P., Aranda Ruiz, F., Devnani, S., Farrenkopf, J., Makowska, A., Mankovska, N., Robin, N., and Steigertahl, L. 2018. "Annual Report on European SMEs - The 10th Anniversary of the Small Business Act."
- O'Reilly, C. A., and Tushman, M. L. 2008. "Ambidexterity as a Dynamic Capability: Resolving the Innovator's Dilemma," *Research in Organizational Behavior* (28), pp. 185–206.
- Osterwalder, A., and Pigneur, Y. 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*, Hoboken: John Wiley & Sons.
- De Reuver, M., Sørensen, C., and Basole, R. C. 2018. "The Digital Platform: A Research Agenda," *Journal of Information Technology* (33:2), pp. 124–135.
- Saebi, T. 2015. "Business Model Evolution, Adaptation or Innovation? A Contingency Framework on Business Model Dynamics, Environmental Change and Dynamic Capabilities," in *Business Model Innovation: The Organizational Dimension*, N. J. Foss and T. Saebi (eds.), Oxford: Oxford University Press.
- Siggelkow, N. 2007. "Persuasion With Case Studies," *Academy of Management Journal* (50:1), pp. 20–24.
- Soluk, J., and Kammerlander, N. 2021. "Digital Transformation in Family-Owned Mittelstand Firms: A Dynamic Capabilities Perspective," *European Journal of Information Systems* (30:6), Taylor & Francis, pp. 676–711.
- Teece, D. J. 2014. "The Foundations of Enterprise Performance: Dynamic and Ordinary Capabilities in an (Economic) Theory of Firms," *Academy of Management Perspectives* (28:4), pp. 328–352.
- Teece, D. J. 2018. "Business Models and Dynamic Capabilities," *Long Range Planning* (51:1), Elsevier Ltd, pp. 40–49.
- Teece, D. J., Pisano, G., and Shuen, A. 1997. "Dynamic Capabilities and Strategic Management," *Strategic Management Journal* (18:7), pp. 509–533.
- Vial, G. 2019. "Understanding Digital Transformation: A Review and a Research Agenda," *Journal of Strategic Information Systems* (28:2), Elsevier, pp. 118–144.
- Xie, X., Han, Y., Anderson, A., and Ribeiro-Navarrete, S. 2022. "Digital platforms and SMEs' business model innovation: Exploring the mediating mechanisms of capability reconfiguration" *International Journal of Information Management*, (65), Article 102513.
- Yin, R. K. 2018. *Case Study Research and Applications: Design and Methods*, Los Angeles: SAGE Publications, Inc.
- Yoo, Y., Henfridsson, O., and Lyytinen, K. 2010. "The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research," *Information Systems Research* (21:4), pp. 724–735.