Digital strategy aligning in SMEs: A dynamic capabilities perspective

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Highlights

- Provides a digital strategy aligning model for SME organizations.
- Adopts a dynamic capabilities perspective to investigate digital aligning.
- Recognizes the importance of micro-behaviors in digital strategy aligning.
- Identifies reorganization by reconfiguration as critical for IS alignment in SMEs.
- Provides a holistic understanding of SMEs' digital practices.

Abstract

Digital strategy alignment is a dominant concern for today's managers and information systems researchers. Yet research in this area remains fragmented, particularly on the digital strategy alignment of small and medium-sized enterprises (SMEs), which is concerning owing to their value to European economies. Employing dynamic capabilities as an analytical lens, we investigate how 43 British, Irish, Italian, and Spanish SMEs, across five industry sectors, enact digital aligning. We identify a model of digital alignment comprising five phases, which we term "passive acceptance," "connection," "immersion," "fusion," and "transformation," as well as the specific combinations of sensing, seizing, and reorganizing capabilities associated with each phase. Our model provides a holistic, practice-based perspective and highlights the role of micro-behaviors and leadership in SMEs implementing digital strategy.

Keywords: Digital strategy aligning, SMEs, Europe, Dynamic capabilities, Five-phase model.

Introduction

Digital technology offers small and medium-sized firms (SMEs) significant business and competitive opportunities (OECD, 2019). It can transform their business functions (Peltier et al., 2012), assist in brand promotion (Kitchen, 2017), improve customer communication and information management (Harrigan et al., 2011), level the competitive playing field (Borges et al., 2009), and facilitate growth (Kurnia et al., 2015). Given the strategic importance of digital technology for SMEs, extant literature has tried to identify factors that support or hinder the successful digitalization of these organizations. Li et al. (2016) found that culture, trust, and the attitude of the SME owner/manager are critical for the development of collective knowledge in information systems (IS) adoption, whereas Cenamor et al. (2019) highlight the supporting role of digital, network, and platform capabilities. Furthermore, the barriers identified in the literature include poor planning (Gutierrez et al., 2009), lack of formal processes (Kitsios and Kamariotou, 2015), lack of understanding of the value of digital technologies and business performance (Cenamor et al., 2019), and dependence on external sourcing of IT competency (Wang and Rusu, 2018).

Despite the literature identifying specific factors that may hinder or enhance the digitalization of SMEs, research on how SMEs can leverage their potential through the alignment of digital and business strategies is lacking (Gutierrez et al., 2009; Kamariotou et al., 2018; Mohd Salleh et al., 2017). This is an important knowledge gap because the alignment between IS strategy, including digital IS, and business strategy has a critical impact on firm performance (Renaud et al., 2016), is a key managerial concern (Kappelman et al., 2014), and remains a critical challenge for SME leaders (Li et al., 2016). It also constitutes a knowledge gap for the IS strategy field in general, given that insights from studies conducted with large firms may not be transferable to SMEs.

Strategic digital alignment is a dynamic process of adaptation and change (Henderson and Venkatraman, 1993; Li et al., 2016) that, rather than being static, demands continuous feedback between business requirements and digital technologies. Aligning digital strategy can be viewed as progressive and intentional (Coursey and Norris, 2008), with behaviors that move from being reactive to purposeful uses and integration of technology (El Sawy, 2003). However, this ongoing set of dynamic changes is not necessarily linear (Iannaci et al., 2019), and the integration of IS with business to leverage the technology's potential remains a challenge.

To investigate this process and, in particular, the dynamic relationship between business requirements and digital technologies, we draw on dynamic capabilities (DCs) as a theoretical lens. The DCs lens, as epitomized by Teece (2007), focuses on strategic change in the organization (Helfat and Peteraf, 2009) and aids in analyzing and explaining how firms change their resources and behaviors as a result of external pressures (Arndt et al., 2018; Daniel et al., 2014). This includes how firms become aware of the need for change and leverage opportunities, thus leading to the enactment of change. Therefore, use of the DCs lens to probe digital aligning in SMEs is pertinent and valuable.

Given the limited research on digital strategy alignment in SMEs, the aim of this paper is to extend theory to identify the combination of DCs associated with different patterns of technology adoption and use. In response to the lacuna of practice-based knowledge (Karpovsky and Galliers, 2015) and Mohd Salleh et al.'s (2017) call, we investigate digital strategy aligning in SMEs to identify the practices that allow them to leverage digital technologies. Specifically, we examine the following research question: *How do SMEs enact digital strategy alignment?*

We pursue this aim through the analysis of 43 case studies of SMEs in four European countries and across five industry sectors. This analysis allows us to develop an overarching

perspective of phases of digital strategy aligning and to delineate the characteristics and behaviors of organizations at each phase. Furthermore, we identify the conceptual relationships between constructs, which can form the basis for future hypotheses development, testing, and measurement.

The relevance of this study goes beyond the conceptualization of digital aligning in SMEs in two ways. First, we provide insight that enables targeted managerial action and policy development in this economically significant organization type (OECD, 2019). Second, as SMEs are often key partners of large firms (Woldesenbet et al., 2012), examining digital strategy aligning in SMEs can also help IS scholars understand the balance and interactions between small and large organizations.

Theoretical background

Digital strategy aligning

While scholars disagree on whether IS strategy should adapt to business strategy, co-evolve with it (Peppard and Ward, 2004), or even challenge it (Chan and Reich, 2007), they largely agree that IS strategy alignment is desirable and has a positive impact on business performance (Renaud et al., 2016). However, aligning fixed IT assets with ever-changing business imperatives is a challenging endeavor (Galliers, 2004), meaning that alignment should be considered an ongoing process requiring continuous adjustments (Hirschheim and Sabherwal, 2001; Li et al., 2016) rather than an either-or state (Luftman, 2000).

Reflecting this fluidity, various scholars have conceptualized IS alignment as a matter of degree and the type of use of technology. For example, Luftman (2000) proposes a model of alignment maturity consisting of five levels, ranging from initial to optimized. Davison et al. (2005) also consider five stages of aligning, though their model starts from rhetorical intention and progresses to transformation. In turn, El Sawy (2003) refers to three views of IS

evolution (connection, immersion, and fusion), progressing from reactive to purposeful uses of technology, until there is no division between the business strategy and the technologies used to drive it. Yeow et al. (2018) also propose a digital strategy alignment model consisting of three phases: exploratory, building, and extension. The first two phases mirror El Sawy's (2003) view, while the third, extension phase, goes beyond his conceptualization. While these models vary in the nomenclature used (i.e., levels, stages, views, and phases) and the number of gradations considered, they all treat alignment as something the organization "does" rather than something the organization "has" (Karpovsky and Galliers, 2015). Furthermore, these models characterize aligning as a progressive, albeit non-linear (Iannaci et al., 2019), process, with higher levels reflecting increasingly intentional and integrated uses of technology (Coursey and Norris, 2008).

In recent years, research has moved away from normative models of alignment to drawing on real-world experiences (Karpovsky and Galliers, 2015) and from a focus on the alignment itself to the practice of aligning (Wilson et al., 2013). The emphasis is on the actions and activities performed across the organization to achieve a fit between IS and business strategy (Orlikowski, 2010) and recognizing that aligning does not occur in a stepwise manner, in which organizations progress sequentially through stages of increased IT sophistication (Iannaci et al., 2019). For example, Li et al. (2016) define strategic alignment as the dynamic adjustment between business requirements and information technologies (including digital). Furthermore, they specify that alignment is ongoing and evolving and that it alters according to the needs of the business. This view of aligning echoes that of Henderson and Venkatraman (1993), who posit that strategic alignment is a process of continuous adaptation and change.

A growing body of work has examined how different social factors (e.g., organizational actions) result in specific emergent experiences of aligning that integrate IS and business strategy (Karpovsky and Galliers, 2015). Extant literature highlights the critical role of

individuals or small groups, rather than whole departments in large firms, such as IT, in leading digital alignment processes. That is, the transformation of organization processes to leverage digital opportunities is influenced by the attitudes toward the technology of those leading the alignment (Li et al., 2016; Morgan-Thomas, 2016; Orlikowski and Scott, 2015), their willingness to take risks (Grant et al., 2014; Jones et al., 2014), and their personal curiosity and open-mindedness (Day, 2011). Furthermore, organizational actors shape, reshape, and appropriate technology through their goal-oriented actions (Whittington, 2014). Yeow et al. (2018) investigate the behaviors that support progression through the three phases of their model. However, their study focuses on only one firm and thus cannot account for the variety of approaches to alignment reported in the literature (see Karpovsky and Galliers, 2015). In particular, their analysis does not reflect how the conditions faced by different organizations may affect their strategic alignment (Street et al., 2017), which limits the application of this model to SMEs.

Digital strategy aligning in SMEs

Given the strategic importance of digital technology for SMEs, understanding how the alignment of IS and business occurs in this type of firm is valuable (Spinelli et al., 2013; Street et al., 2017). Research on IS strategy alignment in SMEs is limited and usually draws on models developed for large firms (Mohd Salleh, 2017; Wang and Rusu, 2018). While well-established models such as Luftman's (2000) strategic alignment maturity model may be of value to investigate this phenomenon in SMEs, with some adaptations (Gutierrez et al., 2009), the findings from empirical studies conducted with large firms may not be transferable to SMEs, as the latter exhibit unique features (Kitsios and Kamariotou, 2019) that may affect the IS aligning process. For example, predetermined factors such as environmental, technological, and organizational aspects of the business ecosystem have been commonly used in research on

large firms but misguidedly applied to smaller firms (Kendall et al., 2001). Furthermore, Gutierrez et al. (2009) found that while organizations of different sizes perceive alignment in similar ways, they adopt distinctive integration strategies and rate the importance of some factors (e.g., governance, system architecture) differently. Such observations imply that while SMEs' digitalization *may* be partly reliant on the deployment of capabilities also found in large firms, these firms may also follow specific approaches because of their unique characteristics, beyond size and resource constraints (Kitsios and Kamariotou, 2019).

On the one hand, SME characteristics such as the inclination to improvise or speed of decision making (Baker and Sinkula, 2009; Libaers et al., 2016) may assist in strategic digital alignment. Given their greater flexibility, SMEs may have an advantage over large firms in terms of discovery and idea generation (Libaers et al., 2016). Moreover, SMEs' agility and opportunistic behavior may breed success in fluid and rapidly changing environments (Baker and Sinkula, 2009). SMEs also tend to be more effective than their larger counterparts in their use of open innovation (Spithoven et al., 2013). These characteristics highlight an ability to implement digital alignment. On the other hand, SMEs' financial limitations may hinder the absorption of learning into the firm (Sirén and Kohtamäki, 2016). For example, financial constraints may inhibit the acquisition of information, the adoption of new processes, and the renewal of operating resources (Nieves, 2016). The instability of IT systems and the dependence on external IT sourcing competences can also impede digital alignment in smaller firms (Wang and Rusu, 2018). These characteristics have a negatively impact on digital alignment in SMEs.

While the lack of planning and formal processes can negatively affect IS development in firms (Gutierrez et al., 2009), its relationship to alignment in SMEs remains unclear (Kamariotou et al., 2018; Kitsios and Kamariotou, 2019). One challenge is the limited research examining how digital leadership in SMEs drives the successful alignment among business

needs, IS, and innovation (Li et al., 2016). Cenamor et al. (2019) also allude to the cognitive inertia of SMEs and their lack of understanding of the linkages among digital technologies, information and communication technology, and business performance, as well as of the importance of managing information flows. They outline the lack of insight into SMEs' implementation of digital technologies and agree with Mohd Salleh et al.'s (2017) call for further research on SME dynamic digital aligning and performance.

DCs as a theoretical lens to examine digital strategy alignment in SMEs

Teece et al. (1997, p. 516) define DCs as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." These capabilities emphasize "the development of management capabilities and difficult-to-imitate combinations of organizational, functional and technological skills" (Teece et al., 1997, p. 510). Indeed, they constitute a planned strategic approach, beyond ad hoc solving of business problems or the repeated execution of good practice.

DCs are a pertinent and valuable lens through which to probe digital aligning because they account for technology in combination with organizational and functional abilities of a firm (Teece et al., 1997) and thus allow the analysis of changes in behavior and resource allocation (Arndt et al., 2018). In particular, DCs can facilitate an understanding of the actions undertaken across the organization to effect change (Yeow et al., 2018), which is relevant because digital strategy alignment is multi-functional and each function cannot be considered in isolation (Bharadwaj et al., 2013). This aggregative approach is particularly appropriate to evaluate digital aligning in SMEs, as in these organizations, functional areas may merge together, and roles and people must often be flexible rather than fixed (Gao and Hafsi, 2015; Peltier et al., 2012). In addition, DCs are an established lens in the investigation of SMEs (e.g., Adeniran and Johnston, 2016; Lane et al., 2006; Lindblom et al., 2008). For example, Adeniran

and Johnston (2016) found that DCs had a positive impact on IT utilization, in terms of helping SMEs generate long-term returns on technology applications, functions, and tools.

The DCs lens also facilitates the identification of behaviors that effect change in IS strategy aligning (Yeow et al., 2018). Core components of DCs include "sensing," "seizing," and "reorganizing." Sensing is the ability to detect changes (Teece, 2007) and to learn quickly (Winter, 2003). Roberts et al. (2016) emphasize that sensing is related not to the volume of ideas available to the organization but rather to the organization's innovativeness. For example, many companies have excelled in the digital environment by proactively identifying customer needs (Sebastian et al., 2017). Environmental factors, including the organizational context, are key elements in IS strategizing, as changes can present both opportunities and threats (Marabelli and Galliers, 2017).

Seizing involves addressing the opportunities in the marketplace by mobilizing resources, embracing prospects for innovation, and executing actions to optimize those opportunities and capture value (Teece, 2016). It includes investing in backbone operational components, identifying data requirements, and building support systems, as well as developing solutions to deliver value to key stakeholders (Sebastian et al., 2017). Seizing is pivotal within DCs as it involves demonstrable action and moves organizations forward through the commitment to change (Yeow et al., 2018). SMEs may have an advantage in seizing, as their shorter decision-making chains and communication flows allow them to respond quickly (Libaers et al., 2016).

Finally, reorganizing involves altering company processes and routines, leveraging resources in new ways (Yeow et al., 2018), accessing new resources to fill the previously identified gaps (Eisenhardt and Martin, 2000), and releasing resources to create optimal combinations (Girod and Whittington, 2017). It is the most challenging DC, as it requires a change in culture and may necessitate discarding long-standing products and practices

(Sebastian et al., 2017). Purposeful reorganizing can occur through restructuring or reconfiguration. On the one hand, restructuring includes fundamental changes across the whole firm, including its structures (Girod and Whittington, 2017), but can be irregular, owing to its significance and the resources required, as well as the level of disruption involved. On the other hand, reconfiguration refers to localized, incremental changes, which are small in scale and do not affect the firm's fundamental structure. Reconfiguration might be a suitable approach for the digital alignment of SMEs, due to their limited financial and human resources. Moreover, given that SMEs tend to have flat organizational structures, it should be easier for them to routinize localized changes and extend them to the whole organization, thus avoiding the limitations of reconfiguration faced by large organizations. Table 1 summarizes the key concepts we use in this paper.

Table 1
Key concepts and definitions.

Concept	Definition
Digital strategy alignment	Dynamic process of adaptation and change between the firm's digital technology strategy and its business strategy. It is an ongoing process that requires continuous adjustments between business requirements and digital assets and can result in different configurations of degree and type of use of technology.
SMEs	Non-subsidiary, independent firms that employ fewer than a given number of employees and generate turnover below a certain level. The specific number of employees and turnover level vary across countries. This study adopts the parameters used by the European Commission: o Micro firms: fewer than 10 employees and/or turnover below €2m/year o Small firms: fewer than 50 employees and/or turnover below €10m/year o Medium firms: fewer than 250 employees and/or turnover below €50m/year
DCs	"The firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997, p. 516).
Sensing	Ability to detect changes and to learn quickly.
Seizing	Ability to address the opportunities in the marketplace by mobilizing resources, embracing prospects for innovation, and executing actions to optimize those opportunities and capture value.
Reorganizing	Ability to alter company processes and routines, leverage resources in new ways, access new resources to fill the previously identified gaps,

and release resources to create optimal combinations. Reorganizing can occur through restructuring or reconfiguration. The former refers to fundamental changes across the whole firm, including its structures, and the latter to localized, incremental changes that do not affect the firm's fundamental structure.

In summary, digital strategy alignment is a process of adaptation and change in the interrelationship between digital assets and business strategy. Organizations, including SMEs, need to understand how to adapt and integrate technology with business functions, so that they can leverage their competitiveness. Extant research has stressed the importance of digital strategy aligning for business success, but how SMEs accomplish this is under-researched. Although known characteristics of SMEs suggest the ability to enact digital strategy aligning, the constraints these firms face create structural challenges to aligning. Furthermore, the impact of certain behaviors on SMEs' approaches to digital strategy aligning remains unclear. Much of the evidence on digital strategy aligning comes from large-scale studies, with limited empirical research on SMEs' aligning processes. DCs offer an aggregative approach to investigate the set of SMEs' aligning activities, from specific core capabilities to adaptation and change. Through the use of this lens, we can identify the sensing, seizing, and reorganizing activities of SMEs and provide insight into their relationship to digital technology aligning. Specifically, we focus on the micro-behaviors of SMEs, considering the subjective experiences of the key actors in these firms and how, through the deployment of DCs, they draw on digital assets to adapt to the dynamic, turbulent, and rapidly changing environments (Quinn et al., 2016) in which they operate.

We treat aligning as a dynamic process that can assume different configurations of IT assets and business imperatives. These configurations differ in the level of sophistication of digital technology use and the level of intentional and integrated use of technology. Similar to Yeow et al. (2018), who investigate digital alignment using a DCs lens, we refer to each type of configuration as a "phase." Here, we do not suggest that one configuration is inherently

superior to another or that organizations should strive to move between configurations in one particular direction to follow a specific path; rather, we aim to understand the social, material, and embodied ways of aligning (Jarzabkowski and Spee, 2009) that characterize the different degrees of the intentional and integrated use of technology.

Method

As phenomenon-driven research, our goal was to create a holistic, practice-based understanding of digital strategy aligning in SMEs. We adopted an interpretive approach, based on an a priori framework (Patton, 1990). This framework provided "seed categories" (Miles and Huberman, 1994) to structure our questions and initial deductive analysis but were complemented with additional categories emerging inductively from the coding of the data.

As our study involved an area in which theory is nascent and, as such, we did not know what issues might emerge from the data, we deemed an exploratory case study appropriate (Edmondson and McManus, 2007; Eisenhardt and Martin, 2000) to develop emergent insight (Flick, 2013) within the context (LeCompte and Schensul, 1999). Specifically, we investigated the digital strategy alignment processes of North European (Britain and Ireland) and South European (Italy and Spain) SMEs. The international data provided robustness for the consistency of the findings across different contexts (Merriam and Tisdell, 2015).

The semi-structured interviews allowed the informants to share their experiences (Denzin and Lincoln, 2008; Edmondson and McManus, 2007) and enabled us to capture their knowledge and experiences to refine our emergent model (Benbasat et al., 1987; Eisenhardt, 1989). As we wanted to understand the "how" and "why" of SME digital strategy aligning, we interviewed SME managers who had oversight of digital strategy in their organizations. In many of the SMEs, only one interviewee met this criterion. Thus, to be consistent across the various organizations studied, in terms of the profile of interviewees, we conducted only one

interview in each organization, with the understanding that the interviewees are influenced by their environment and that the information they provide is colored by this framing (Philips and Mrowczynski, 2019).

Although the value of interviews is well-established in social science studies (Kvale and Brinkmann, 2009), we also incorporated key information about the organization's digital presence by conducting desk research (Beverland and Lindgreen, 2010). For example, we collected available data on external-facing digital technologies, such as the functionality of websites and the type and extent of social media presence. Furthermore, when external drivers were mentioned, such as the presence of legislation or government financial incentives, we investigated the content of those drivers (e.g., what the law required, how much funding was available). We found no significant discrepancies between the interview accounts and our independent observations. Our triangulation approach emulates Pattinson et al.'s (2018) investigation of sensemaking in SMEs. Complementarity is a valuable goal of triangulation in studies that follow a constructive stance, such as ours, because it offers additional perspectives on the phenomenon being studied (Farquhar et al., 2020).

Sample

The sample (Table 2) comprised 43 SME firms in five industries identified by the European Commission as core and investigated in previous studies (see Eggers et al., 2013); agriculture, manufacturing, retail, professional services, and tourism. We adopted the European Commission's definition of SMEs in this study (see Table 1). Appendix 1 lists the characteristics of the sample as supplementary information on the case organizations. When empirical saturation was achieved (Tracy, 2010), data collection ceased. The number of sample cases recommended for case study research is contentious (see Dyer and Wilkins, 1991; Lillis and Mundy, 2005). Challenges are acknowledged in reporting results from a large number of

cases and the trade-off in terms of data depth, but Piekkari et al. (2009) argue for greater methodological pluralism and a greater appreciation for context and purpose. Thus, although our number of cases was high (43), this number is appropriate in relation to the context and purpose of our study, as it enables us to capture diverse experiences from practitioners in multiple industry sectors and provides the base for building a holistic view of SME digital strategy alignment.

Table 2
Firm profiles.

| Size | North Europe | | South Europe | |
	Industry	Type	Industry	Type
Micro	agriculture: 1	B2C	agriculture: 1	B2B
	manufacturing: 2	B2B	manufacturing: 0	/
	retail: 1	B2C	retail: 1	B2C
	services: 1	B2B	services: 2	B2C/B2B
	tourism: 0	/	tourism: 1	B2C
	sub-total: 5		*sub-total: 5*	
Small	agriculture: 0	/	agriculture: 1	B2B
	manufacturing: 2	B2B	manufacturing: 2	B2B
	retail: 2	B2C	retail: 2	B2C
	services: 2	B2C	services: 2	B2C/B2B
	tourism: 1	B2C	tourism: 1	B2C
	sub-total: 7		*sub-total: 8*	
Medium	agriculture: 1	B2B	agriculture: 3	B2B
	manufacturing: 2	B2B	manufacturing: 3	B2B
	retail: 2	B2C	retail: 1	B2C
	services: 2	B2B	services: 2	B2B
	tourism: 1	B2C	tourism: 2	B2C
	sub-total: 8		*sub-total: 11*	
	Total: 20		Total: 23	

Data collection and analysis

A native researcher of each country conducted the interviews, to capture nuances in language. Eleven questions (Appendix 2) took account of multiple influences, as called for by Morgan-Thomas (2016) and Amit and Han (2017). Following Yeow et al. (2018), who investigate the role of DCs in strategy alignment, we sought to identify the sensing, seizing, and reorganizing behaviors supporting digital alignment. In addition, we asked about the external environmental drivers of digital alignment (Marabelli and Galliers, 2017) and the

influence of key individuals (Day, 2011; Gao and Hafsi, 2015; Orlikowski and Scott, 2015; Vaccaro et al., 2012) within the three components of DCs.

Subsequent to transcription and translation of the interviews, we analyzed the data independently and, then, collectively using Yin's (2013) three-step analytic framework. The first step involved coding and categorization of each transcript. Drawing on the descriptions El Sawy (2003) and Yeow et al. (2018) used for their respective frameworks (some of which overlapped, as discussed previously), we coded each organization in one specific phase of IT strategy alignment: the first, as per El Sawy's Connection and Yeow et al.'s Exploratory phases; the second, as per El Sawy's Immersion phase; the third, as per El Sawy's Fusion and Yeow et al.'s Building phases; and the fourth, as per Yeow et al.'s Extension phase. Following this stage of deductive categorization, we identified the organizations that exhibited a configuration of IT alignment that matched neither El Sawy's nor Yeow et al.'s typology. Specifically, we identified a small number of organizations that adopted a narrow range of IT tools, driven by pressures from the external environment rather than internal logic. We added this phase, which we developed inductively from analysis of the data, to our typology, leading to the five phases of digital strategy aligning shown in Table 3. We termed this new precursor phase "passive acceptance" to denote the lack of progressive engagement with digital technologies and the reluctant acknowledgment of the need to participate in digital strategic aligning at a basic level. Pursuant to this, at the other end of aligning was the finding that, in a few instances, SMEs were not only aligning their digital strategy but also reframing and transitioning to a transformative state that incorporated but also moved beyond the extension phase proposed by Yeow et al. (2018). We termed this phase "transformation."

The second step focused on categorical aggregation and the search for patterns. Mirroring Yeow et al.'s (2018) approach, we mapped the DC behaviors that characterized each of the five phases—namely, how the firms in each phase learned (sensing), mobilized their

resources (seizing), and adapted their processes and routines (reorganizing) to align digital strategy.

In the third step, we revisited the data to search for relationships among the core themes of "phase of strategic digital alignment" (i.e., passive; connection/exploratory, immersion, fusion/building, and transformation), "context" (i.e., size of SME, region, and industry), and "DCs" (i.e., sensing, seizing and reorganizing). Any outliers within each element were swapped across the research team and followed the convergent interview approach (Rao and Perry, 2003). To enhance qualitative legitimacy, we applied Guba and Lincoln's (1994) criteria of trustworthiness and authenticity.

Table 3
Examples of coding and thematic analysis.

Firm	Raw data	Coding ("•" denotes behavior illustrated by the selected quote)	Phase of digital aligning
Small-Spain-Agriculture	"Legislation and our clients lead us to adopt digital practices…. Being a food company we are obliged to provide product traceability."	• Reactive behavior to external pressures ○ Imitation • Compliance to external factors ○ No strategic planning	Passive acceptance

Micro-Ireland-Services	"The way I invoice clients, the way we communicate, through email or through video or through any of those things; it's all got a trail online and everything is connected with it. And that makes my business incredibly easy because as a consultancy the majority of my work is the actual work that I'm doing, so how technology helps me is that it just streamlines all of that…. I can see where projects are and keep on top of them…. My competitors are using similar tools and this will only increase as digital becomes normal in business."	• Process efficiency • External threat recognition o Shared understanding of the digital potential	Connection/ exploratory
Micro-Italy-Services	"We move with an overall strategy, and digital helps to achieve it…. The use of various tools aimed at reducing difficulties and helping us use information better, for example, the way we manage documentation and work flow … my team now relies on these digital systems and couldn't work without them."	• Digital supports strategy • People, processes, and technology are interdependent o Digital used to understand the market o Digital planning is key	Immersion
Medium-Britain-Manufacturing	"The way that the digital arena will change for us over the next 10 years is going to blow our socks off. Digital integration is giving us the capability to consolidate inventories, to train people across countries using YouTube videos … it is helping us to achieve our overall strategy of internationalization."	o No distinction between digital and business strategy • Multi-digital channels to support business innovation o Mindset of leader • Integration of digital across business functions	Fusion/building
Micro-Ireland-Agriculture	"I'm developing my personal app … for my own personal market of 100 people or households, and I will be a grower for them and they will be able to track, develop and see how their fruit, vegetables and meat are growing. Make orders on the app at specific times of the year through the app, and when it's ready for them they can come and collect."	• Digital disrupts business models o New culture across all functions • Openness/vigilant/ experimentation capabilities	Transformation/ extending

Findings

Data analysis led to the identification of five phases of digital aligning among our sample (Table 4), from reluctant engagement with digital technology to the embrace of its transformative power. We describe the phases and behaviors that support them next.

Phase 1: Passive acceptance

This phase is characterized by the limited, almost reluctant, use of digital technology, driven solely by external pressures (see Table 4). The four firms in this phase displayed limited use of a small number of digital tools, such as creating a basic website for their firms, using e-mail and Internet search, or making the occasional international phone call via Internet telephony services such as Skype. All firms were from different sectors (agriculture, manufacturing, retail, and tourism) and of different sizes (two small and two medium). Two were based in South Europe and two North Europe.

When probed for the rationale for adopting such tools, the firms described having to do so, as a result of external pressure and the rules and conditions with which the business had to comply. For example, government initiatives encouraged digital filing of taxes in Britain, EU farming regulations required the digital recording of animals in Ireland, and health and safety regulations and customer expectations dictated food handling activity in Spain:

> Legislation and our clients lead us to adopt digital practices…. Being a food company we are obliged to provide product traceability. (Small-Spain-Agriculture).

> Government initiatives that made us file paperwork online was a factor that made us start thinking about digital technologies. (Micro-Britain-Manufacturer)

Table 4
Key characteristics and behaviors of each phase.

Phase	Technology use	Sensing	Seizing	Reorganizing
Passive Acceptance (4 firms)	Limited use – e.g., Informational website, email, search engines, internet telephony for international calls	Regulatory requirements; Customer pressure	Government grants if available; Imitate competitors; Process efficiency, time and cost risk.	No long-term view, explicit budget or metrics. Staff fear change and aim to maintain status quo.
Connection (13 firms)	Ad-hoc use of selected tools to support service delivery – e.g., ERP, SAP, EDI and Cloud, e-commerce, internal communications (e.g.: Yammer), Online advertising (e.g., AdWords), some social media presence, but mostly for 'push' communications	External threats; Customer behavior change; Willingness to keep-up with competitors	Some investment in tools which support specific processes, and enhance efficiency and control; Lack of in-house expertise leads to use of external specialists. Staff training.	Informal planning, ad-hoc measurement. Employee reticence towards digital.
Immersion (19 firms)	Growing vertical integration, and interdependence of technology and human resources. Technology supports business strategy. E.g., Google analytics, smart working (cloud services for data storage, etc), interactive channels for customer-client communications (e.g., two-way interaction via social media), loyalty clubs, online communities, CRM data mining	Focused on the possibilities; Digital adds value to customer and staff experience.	Integration with third-party systems, testing digital across functions.	Some systematic measurement. Questioning previous strategy, internal communications to assist digital plan implementation, belief throughout the company about benefits start of cultural shift.
Fusion (4 firms)	Horizontal integration of technology and processes, across business functions, to meet specific business objectives. Extensive use of measurement tools, embedded e-commerce solutions, strategic use of social media.	Leader's curiosity and enthusiasm. Focus on how real time data offers flexibility in decision-making.	Integration across firm and alignment of systems, integration of internal and external data, new resource configuration.	Opportunities for change in direction for the business. Seamless use of multi-media linked to measurement tools, technology facilitates internationalization, welcomes change, digital mind-set of leader.
Transformation (3 firms)	Technology, processes and strategy managed synchronously and symbiotically. App development, co-creation practices, experimentation with virtual reality, 3D images and other technologies.	Seeking opportunities, desire to lead and be viewed as example of best practice.	Quick adoption of new technologies, proactively requesting feedback from customers (e.g., beta testing).	Openness from top of firm to innovate, fluid use of staff expertise Positive disruption to business model, innovation, New capabilities are leveraged, innovation demonstrated which encourages continued growth, experimentation across business redeploying staff.

In terms of seizing, limited resources and the speed of technology change generated

concern: "The learning curve is too long and requires too much time which affects the return"

(Small-Spain-Agriculture). The constrained resources led these firms to seek out external sources of funding, such as government grants. Then, they proceeded to scrutinizing their competitors' actions, such as what product information was displayed on websites. They might also explore ways of using technology to cut costs and improve efficiency, though, overall, they perceived investments in technology as risky.

The use of digital technology did not progress beyond the localized use of tools. There was no formalized planning, no systematic use of metrics or other tracking efforts, and no specific budget for digital activities: "They come to me for project money every now and again" (Medium-Britain-Retail). Furthermore, the managers reported general discomfort in using technology, adding that staff resisted further innovation:

> Staff are afraid of not knowing how to use and control [the technologies]. This makes them feel useless and they are fearful both of losing their jobs and of being watched. (Small-Spain-Tourism)

In this first phase, there was no articulation of aligning digital strategy, skills, planning, or decision making for the benefit of the organization. No explicit relationship was articulated between IT strategy and business needs or objectives. While sensing had occurred as a result of external factors, the seizing of any opportunities was highly limited, and no reorganizing had been implemented. Indeed, the limited use of digital technologies could even be perceived as a distraction, undermining other processes in the organization: "Our competitors and suppliers have influenced us to move to digital practices, but doing this stops us completing other activities in the business" (Small–Spain-Agriculture).

Phase 2: Connection

This phase is characterized by the ad hoc, but voluntary, use of some tools for both internal and external activities, illustrating a progression from the previous phase in which the use of digital tools was minimal (Table 4). The 13 firms in this phase used digital technology on an ad hoc basis, including tools to engage with customers, such as having a limited social media presence or experimenting with search engine marketing. They also had back-office systems (e.g., Yammer) to facilitate internal communication.

These organizations justified adoption of digital technology as a means to deal with perceived threats in the environment and also as a result of changes in consumer behavior. They also reported monitoring their competitors' actions and feeling pressured to keep up with their competitors, particularly direct ones:

Competition and the environment push us to be digitized, competition is important and we follow its movement to be at the same level and use the same tools. (Micro-Spain-Services)

The firms had made some investments in digital tools to support productivity and/or improve process efficiency. For example, cloud services allowed staff to access key documents remotely, at any time and from anywhere, while enterprise resource planning (ERP) systems helped reduce mistakes:

Use of software and digital tools have been wonderful in terms of control improvement and error reduction. (Small-Spain-Manufacturer).

These firms are experimenting with new channels to communicate with customers, such as social media, online advertising, and even e-commerce. However, they deem these as complementary to traditional media and use them only when they are likely to improve operations:

The way I invoice clients, the way that we communicate, through email or through video or through any of those things; it's all got a trail online and everything is connected with it. And that makes my business incredibly easy because as a consultancy…. So how technology helps me is that it just streamlines all of that … to allow me to have the time and freedom to just get on. (Micro-Ireland-Services)

While staff were using various tools, overall, they were resistant to broader changes. There was no formal plan or budget in place for further investment in digital technology. In addition, while there was some measurement of results, this did not happen systematically: "We are implementing some specific digital tools but are not sure how much benefit they provide" (Medium-Spain-Services).

Within the connection phase of digital strategy, we noticed certain developments from the passive acceptance phase. The sensing capability now requires a need to engage in digital IT tools to gain process efficiencies from limited investment. The progression of seizing is evident in the linking of content across social media platforms or the connecting of e-commerce with internal systems, to achieve a determined purpose, such as better, up-to-date supply information. For example, one Italian firm had created an online space for customers to ask questions, and it linked this information to the product database and the communication team's group information. In this case, the firm was prepared to invest in expertise, as it did not have the internal skills required to align various technologies but appreciated the potential value. However, the relationship between business objectives and strategic implementation of IT technologies remains unrecognized in this phase. Finally, reorganizing is minimal and limited to the short-term.

Phase 3: Immersion

This phase is characterized by a somewhat sophisticated use of digital technology and a growing interdependence between business and technology (Table 4). The immersion phase is a "watershed" point, as the relationship between business and technology is acknowledged and some steps toward integration are taken. More sophisticated sensing emphasizes that positive potential is apparent, firms are seizing opportunities to integrate systems, and a certain systematic evaluation of the integration now occurs as part of reorganizing, including cultural shifts.

Nineteen firms displayed competent use of digital technology, such as the creation of online communities or the mining of data from Google analytics and customer relationship management systems, in contrast with the previous (connection) phase, in which firms deployed tools without integration. Moreover, we found evidence of interdependence between IT and people, as in the case of smart working solutions. Digital technology is deemed supportive of the business's overall strategy: "We move with an overall strategy and digital helps to achieve it" (Micro-Italy-Services).

The firms adopted digital technologies when they believed they would offer opportunities. Moreover, rather than focusing on how automation could reduce time, money, or errors, as in the previous connection phase, the firms noticed how technology could add value—be it in the form of enhancing the customer experience, enabling flexible working, or freeing up employees to explore new projects and activities:

> People in the business can work remotely and at different hours, across the same
>
> virtual cabinets…. Technology allows us to think in a broader [way]. (Micro-Britain-
>
> Services)

To tap into the perceived opportunities, firms invested in third-party solutions to improve service delivery: "[The third-party solution] advises [our clients] of liabilities and

deadlines, sends appreciative texts for paying on time" (Micro-Britain-Services). They also tested the deployment of solutions across functions:

> I'd like us to embrace anything that's available in terms of intelligent systems, which are capable of substituting for human time and attention. In this way, we can focus on the three, in my view irreplaceable, human practices which are social influence, social intelligence and social creativity. (Small-Italy-Services)

We found evidence of some systematic monitoring of digital use, as well as the use of metrics to inform further investment. Occasionally, firms used these to rethink previous business strategy: "Digital has been the driver to disintermediation and to a new unique brand building. We were suppliers, now we are competitors" (Small-Italy-Manufacturer).

In this phase, firms believe in the benefits of digital technology and the possibilities it may provide for business. Digital strategy aligning was enacted by drawing staff and the integration of processes closer. For example, the development of digital skills by specific employees was supported by some of the SMEs in Britain and Italy, so that current market data could be better exploited to inform forward planning. Designated staff were made responsible for certain digital activities in the firms, such as cloud systems, to assist in implementing alignment. Firms engaged in internal communication initiatives to support the adoption and use of digital tools. As a result, staff regarded digital technology as a positive force for the business.

Phase 4: Fusion

This phase is characterized by the extensive use of digital tools, deployed to meet business objectives. Here, digital strategy aligning is visible. Unlike in the previous phase, in which firms used technology to support business strategy, there is now a sense of interaction

between business and IT strategy (Table 4). The four firms in this phase fuse digital technology with the business:

> Our business strategy does not differ from our digital one. The second does not depend on the first one. They are completely blended, it's not separated. (Medium-Italy-Services)

Firms deliberately seek ways to use technology to improve their position and increase flexibility. For example, they explore ways to obtain real-time data, accelerate the process of analyzing existing datasets, and make any insights available for decision making:

> When you work with … real-time data, all our business practices have changed, which is positive. (Medium-Italy-Services)

In this phase, management perceives technology as a means to go beyond the firm's defined and well-established environment. Although this vision may not yet be implemented, it is a progression from the immersion phase. A deep sense of curiosity and a focus beyond the immediate emerges:

> The bit I love is thinking about what you can use technology for going forwards; that is huge, absolutely massive. (Medium-Britain-Manufacturer)

Resources (financial and human) are deployed to support this investment, for example, by reassigning budgets or recruiting staff with specific technical skills. Moreover, firms seek to integrate internal and external data (e.g., social media insight is integrated with internal customer data), to maximize the benefits from operating in a digital environment. They look beyond the current use of technology to also consider how it might shape the future business

environment, such as what new geographic markets can be made viable because of digital technology:

> We are changing how we operate at a core level…. It is costing a lot of money but I believe it will transform us, our structures, the interactions we have … and all our experimentation will make us the leader. (Small-Britain-Manufacturer)

The fusion phase of digital strategy alignment relies, in part, on the mindset and characteristics of the organization's leader, which is more apparent than in the previous phases and encourages a sense of curiosity about digital technology. Multiple digital channels and technologies are embedded within the organization, which supports innovation through the trial and measurement of new technologies and then, accordingly, the adjustment of business activities. For example, one firm achieves a broader business strategy of internationalization, having been created by the leader, by combining the use of digital communication technologies to reach international business audiences, the improved manufacturing accomplished through digitally controlled laser cutting of materials, and social media to train local installers. Thus, in the fusion phase, sensing is often led by enthusiasm from the top, which encourages the seizing and implementation of new resource configurations, which then facilitates the potential for reorganizing in the firm.

Phase 5: Transformation

This phase is characterized by the intentional use of digital technology to transform the business (Table 4). While firms in the fusion phase were open to the possibility of reorganizing, those in the transformation phase pursue the realization of such reorganizing. This marks a substantial progression from the previous phases of aligning.

We classified three firms in this most advanced phase. Two were middle-sized enterprises based in South Europe, and the other was micro-sized and based in North Europe. The firms had partially, rather than fully, achieved this phase but were aspirational in progressing toward full transformation.

The firms have a culture that promotes discovery, vigilance, and implementation of opportunities. Technology has become second nature, with no difference between non-digital and digital activities. These firms proactively adapt to market shifts through the use of digital technologies. For example, they engage customers in the development and beta-testing of new products and seek feedback from them. The openness to change is evident not just in the manager championing the digital agenda but across functions and roles as well, and there is a noticeable development from the fusion and immersion phases:

> A lot is changing [more competition, less resources, surveillance, privacy and data complexity are the most important]; we need to be prepared and to listen to these changes. We need to cope with these changes. (Medium-Italy-Services)

In this phase, firms have managed to overcome organizational silos, particularly in relation to social media practices. Respondents discussed the development of a new culture of digitalization, in which the mindset, tools, and capabilities added to the firm's creativity and competitiveness:

> All social media from Instagram to Twitter are connected and everybody, even those who work in production, use our Facebook account…. The Internet rewards content more than the amount of money you invest…. Creativity rewards the digital. Our portal is more innovative than…, we are dimensionally superior compared to the size of our company. (Medium-Italy-Manufacturer)

Digital strategy aligning, when achieved, may disrupt established business models, anticipating fast-changing market signals and offering creative opportunities for small firms. For example, developing a customized mobile app allowed disintermediation by engaging directly with end consumers, who became highly involved in the new form of interaction:

I'm developing my personal app … for my own personal market of 100 people or households, and I will be a grower for them and they will be able to track, develop and see how their fruit, vegetables and meat are growing. Make orders on the app at specific times of the year through the app, and when it's ready for them they can come and collect. (Micro-Ireland-Agriculture)

In the transformation phase, the concept of "how" to align technology and business subtly changes to extend beyond how to bring strands together to how the firm might use a different lens to anticipate the future of the business. An example of how alignment can lead to positive disruption comes from an Italian organization:

The success of our YouTube video and social media activity on the handmaking of shoes made us rethink our whole business, and now we are going to open a training school for handmade shoes. This will be totally new for us as a manufacturer. (Medium–Italy-Manufacturer)

The sensing, seizing, and reorganizing capabilities are all cohesive and interwoven, such that digital strategic aligning has moved an organization beyond aligning to new territories, progressing the business into experimentation.

State of digital strategy aligning among the SMEs in our sample

The findings from SMEs in two European regions reveal a concentration of firms in the connection and immersion phases of aligning, with digital technologies being used mostly on

an ad hoc basis or as support to the business strategy. The bulk of firms in the early phases of DCs indicates that while the SMEs in our sample are engaging with digital technology, benefiting from the transformative potential of digital technologies remains aspirational for most (Peltier et al., 2012). As in Sebastian et al.'s (2017) study of large firms' digitalization, in our SME sample, firms found articulating the need for a digital strategy easier than actually pursuing it.

The lack of homogeneity of firm characteristics within each phase, and particularly in the least and most advanced ones (see Appendix 1), suggests that the difference in engagement with digital technologies among SMEs and also between SMEs and their larger counterparts cannot be explained by size and sectorial factors alone. Instead, technology adoption and strategy alignment are closely tied to the attitudes and behaviors of the people within the firms (Morgan-Thomas, 2016; Orlikowski and Scott, 2015), with personal curiosity and open-mindedness being key individual capabilities driving them:

> I am not afraid of learning new technologies and this is really important. First, I evaluate whether or not it is worth introducing into the company and then I teach my colleagues…. It is important not to reject changes. On the contrary, I am always looking for new technologies or tools to integrate them into the company. I select them and prioritize based on the level of interest for the company. (Medium-Spain-Manufacturing)
>
> I think there's an openness from the top, from the board, to say we understand we're in a digital age and we do want to embrace it. (Small-Britain-Manufacturer)

Our findings also show that, similar to large organizations, SMEs do not adopt one approach to digital aligning, and the phase of alignment cannot be measured in terms of whether particular digital technologies (e.g., social media, cloud services) have been adopted. Rather, it is the effective integration of technology with the business's strategy, following a localized, incremental, reconfiguration approach, that leads to alignment (Tanriverdi et al.,

2010). For some firms, this integration leads to adopting a small number of technologies, while for others, a large number.

Discussion

Our conceptualization of digital alignment and subsequent fieldwork resulted in the identification of five phases, each exhibiting different types of technology use (ad hoc vs. integrated) and different approaches to technology adoption (reactive vs. purposeful), as illustrated in Fig. 1. Consistent with previous conceptualizations of IS alignment (e.g., Yeow et al., 2018), our model depicts intentional and integrated uses of digital technology as higher levels of digital strategy alignment. However, this representation does not mean that some phases are superior to others or that SMEs should or do progress linearly from one phase to the next (see Iannaci et al., 2019). For an SME competing on price rather than innovation or customer service, for example, it may not make sense to move from "fusion" to "transformation"; conversely, a new venture whose business model is based on disrupting the market may move quickly to the "transformation" phase, skipping some or all of the others. Within each phase, there are moments of technology exploitation and exploration, in response to perceived changes in the firm's environment (Marabelli and Galliers, 2017), and use of different combinations of the sensing, seizing, and reorganizing capabilities.
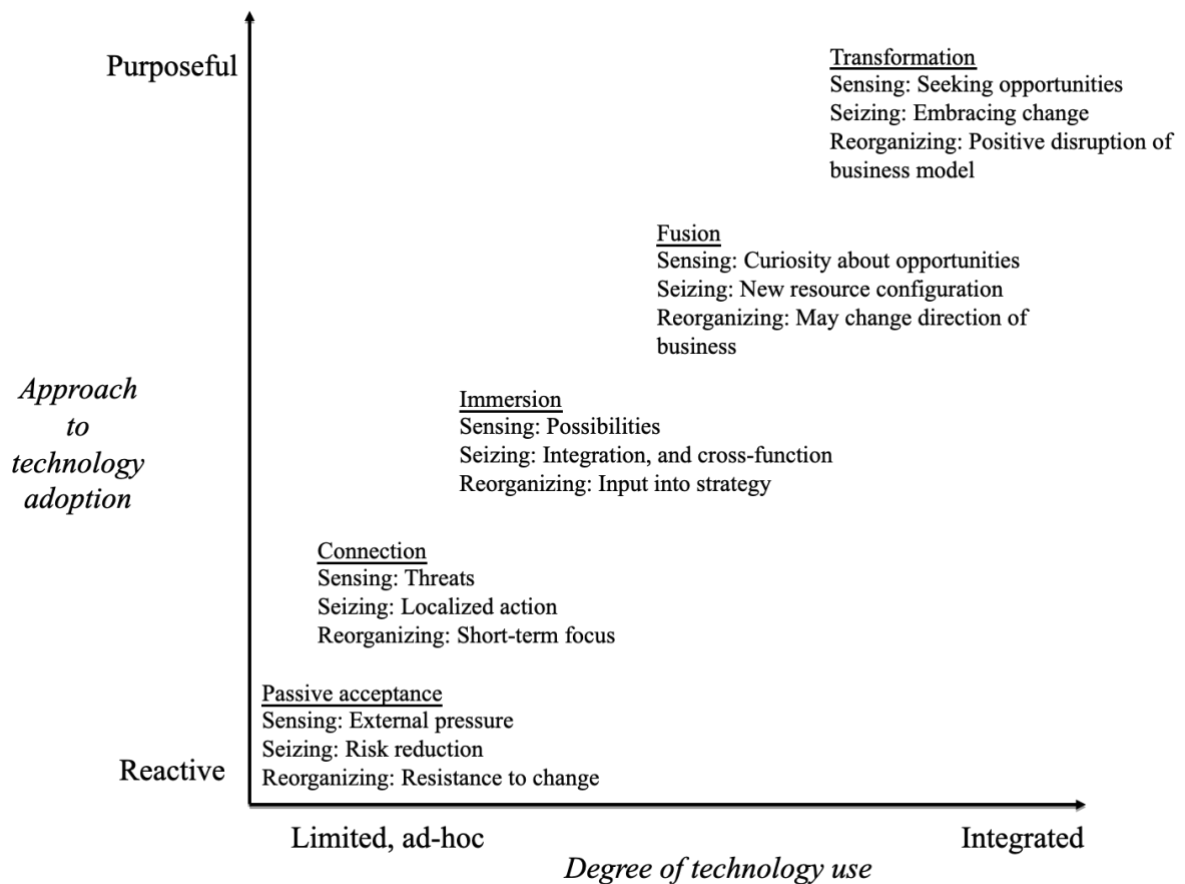
Fig. 1. A five-phase model of digital strategy aligning in SMEs.

As mentioned previously, our five-phase model builds on the work of Yeow et al. (2018) and El Sawy (2003). Although Yeow et al. commence with the "exploratory" phase, when managers articulate and acknowledge the potentiality of digital technologies, our model identifies an important prequel phase—passive acceptance. In this phase, the external environment exerts pressure on the firm such that it must adopt digital technology to continue in business. Yeow's et al.'s framework pays limited attention to the impact of the external regulatory environment on the adoption of digital technologies as a trigger for digital strategy aligning. Our results revealed a recognition of the need for change based on external regulatory and, sometimes, customer pressure, rather than internal, firm-led drivers and resultant activities. The detection of this prequel phase among our sample is consistent with Cenamor et

al.'s (2019) observation that many SME managers lack an understanding of the connections between digital technologies and broader business strategy and performance.

By introducing this phase, we acknowledge that firms may deploy digital technology even though they have little or no intention to progress toward more intense or more strategic use of the technology (Iannaci et al., 2019). This phase can be compared with Sebastian et al.'s (2017) "defining" phase or Davison et al.'s (2005) "rhetorical intention" phase, in which there are some visible uses of the technology and even public statements of intent, but these are not supported by planning or structured implementation.

Moreover, in this phase, the sensing, seizing, and reorganizing elements of DCs are present but embryonic. They form the bases for further digital activities, though progression is by no means guaranteed. Sensing is mostly focused on obligations and compulsory regulation, policy, or other external forces (Kurnia et al., 2015). Seizing aims to identify shortcuts and opportunities to reduce costs, while reorganizing is reactive and lacking in detailed planning (Gutierrez et al., 2009; Jones et al., 2014; Kitsios and Kamariotou, 2019).

The second phase, "connection," differs from the first phase, with more extensive use of technology (albeit still limited) and, more important, a change in attitudes toward technology use (Li et al., 2016). Specifically, we find an intentional, if tentative, use of various tools. Employees use technology particularly for repetitive tasks or for collaborative work, though the lack of internal expertise in digital technologies presents a challenge (Wang and Rusu, 2018). Both Gebhardt et al. (2006) and Libaers et al. (2016) observe similar localized responses to the sensing of an external threat to the business, with seizing activities focused on process efficiencies. This phase shows investment in some of the core components of the organization's backbone (Sebastian et al., 2017), but it is short-term, not strategic. This phase echoes Yeow et al.'s (2018) exploratory phase and El Sawy's (2003) connection view, in which

environmental scanning occurs and employees commence cross-functional communication to identify and acquire specific resources.

The results of our study also identified a phase between the "exploratory" and "building" phases of Yeow et al. (2018). Our more nuanced phase of "immersion" draws on the work of El Sawy (2003) and includes a recognition by leadership of the potential of digital technology as a support structure for the business (Li et al., 2016). This intermediary phase is important because now firms explicitly consider the possibilities and benefits of digital strategy alignment (Morgan-Thomas, 2016) and begin enacting a cultural shift. Processes, people, and technology become interdependent (Orlikowski, 2010), which is reflected in the organization's activity. The characteristics of the owner/manager are influential in the decision to commit to digital technologies (Belso-Martinez et al., 2013; Gao and Hafsi, 2015; Li et al., 2016). There is an appreciation of the need for adaptive change across the whole firm (Girod and Whittington, 2017), though full integration remains an aspiration. The working environment changes with, for example, the adoption of Internet-enabled applications, customer relationship management systems, online order management, and e-commerce. Digital technologies support the strategy, both internally and externally. Much emphasis is put on internal communications and the use of technology to assist in understanding the market, and actions move beyond problem solving to leveraging knowledge. This phase is the tipping point mentioned by El Sawy (2003) but absent in Yeow et al.'s (2018) model.

In our fourth phase, "fusion," there is no division between business strategy and the technologies used to drive it (Mithas et al., 2013; Sirén and Kohtamäki, 2016). This phase manifests through "always-on" digital technologies, the use of multimedia, data mining, cloud storage, and real-time supply chain management. Tanriverdi et al. (2010) label this phase the "integration quest," and Gebhardt et al. (2006) highlight the embedding of change through formalization of activities and processes. Yeow et al. (2018) term this the "building" phase and

El Sawy (2003) the "fusion" view, in which systems are reconfigured to support strategic initiatives. The effectiveness of implementation may depend on the experience of key individuals (Ates et al., 2013; Li et al., 2016), their level of risk aversion in their decision making, and the presence of core technological assets, such as an operational backbone and a digital services platform (Sebastian et al., 2017). Learning from the changes adopted to develop DCs (Sirén and Kohtamäki, 2016; Teece, 2007) is a feature of this phase for SMEs.

The fifth phase of alignment is the "transformation" phase. While the final phase in Yeow et al.'s (2018) model involves growing the firm and leveraging its capabilities, our final phase moves beyond these activities to a culture in which strategic unsettling is deliberately created. Technologies are used to reappraise business models, enable positive disruption (Henderson and Venkatraman, 1993), encourage innovation in the firm, and "facilitate experimentation" (Sebastian et al., 2017, p. 203), in the form of dynamic, ongoing responses that evolve with the needs of the business (Karpovsky and Galliers, 2015). Organizations demonstrate openness, vigilance, and readiness to experiment, often through visionary leadership (Li et al., 2016), which enables them to keep up with larger direct or indirect competitors. Our evidence shows that firms in the transformation phase challenge the status quo and then begin shaping their environment by enacting novel ideas (Libaers et al., 2016), thus creating a new culture. Transformation also involves constant awareness and absorption of feedback from the market to maintain this state of readiness (Calabretta and Kleinsmann, 2017).

Uniqueness of the SME context

Our new five-phase model (Fig. 1) presents a conceptualization of digital strategy aligning in SMEs based on real-world experiences (Karpovsky and Galliers, 2015) and provides a holistic understanding of the phenomenon and the capabilities that shape it (Spinelli

et al., 2013; Street et al., 2017). It illustrates the nuances in the digital aligning strategies of SMEs and can help identify the current position of an SME relative to others. We propose an indicative model that encompasses the principles of analytical theory proposed by Gregor (2006). Analytical theory in IS is valuable when little is known about the phenomenon in question. When relationships between factors are associative, this type of foundational theory can help develop further theory for predicting, designing, and taking action (Gregor 2006). Furthermore, the proposed model attempts to redress Renaud et al.'s (2016, p. 88) criticism that "[m]odels describe sociotechnical systems through geometric representations in which practitioners and the social dimension of the IS disappears behind theoretical abstractions." Accordingly, our model encompasses a sociotechnical approach that acknowledges the role of human actors in business strategy and strategic alignment and answers Renaud et al.'s (2016) call for a broader non-functionalist model of strategic aligning. Our model shows the processes of connection between IS and business strategy within the context of SMEs and demonstrates how this happens in practice, as called for by Vial (2019), Street et al. (2017), and Mohd Salleh et al. (2017). Our model is meant not to be normative or predictive but inductive; it does not suggest that SMEs should adopt specific behaviors or progress through each of the five steps in order.

Building on our findings, we offer five observations with regard to SMEs and large firms. First, as for large organizations (Sebastian et al., 2017; Yeow et al., 2018), different phases of digital strategic alignment are associated with the deployment of specific sensing, seizing, and reorganizing capabilities (Roberts et al., 2016; Teece, 2007). Second, this deployment is commonly influenced by social actors' perceptions (Li et al., 2016; Morgan-Thomas, 2016; Orlikowski and Scott, 2015) and behaviors (Whittington, 2014). However, unlike their larger counterparts, in SMEs this subjective assessment of the environment is

largely dependent on the cognition of the firm's leader (Cenamor et al., 2019; Li et al., 2016), rather than the groups or departments leading technology deployment.

Third, digital strategy aligning in SMEs has specific characteristics not generally found in large firms—namely, that how key individuals in the organization interpret external influences is highly consequential for organizational innovation and change, with the role of individuals in strategizing being highly determinant (Vaccaro et al., 2012). We found that individual digital leadership influences the level and approach to technology use in SMEs, echoing Li et al.'s (2016) findings. Moreover, cognitive inertia (Cenamor et al., 2019) was apparent in the earlier phases (passive acceptance and connection) of digital aligning, as firms' leaders did not demonstrate appreciation for the linkages between digital technologies and business performance.

Fourth, the financial limitations (Sirén and Kohtamäki, 2016) and lack of technical expertise (Wang and Rusu, 2018) in SMEs conditioned the purchase, implementation, and support of digital assets with which to bring about digital aligning (Nieves, 2016). However, these firms' flexibility and agility to effect change (Libaers et al., 2016), as well as their rapid decision making (Baker and Sinkula, 2009), enabled this enactment to occur rapidly, particularly in later phases (immersion, fusion, and transformation). Fifth, compared with large organizations (Girod and Whittington, 2017), SMEs may benefit from reorganization by reconfiguring rather than restructuring, as a means to adapt to the digital environment.

When enacting strategic digital aligning, SMEs need to look beyond single initiatives and consider how strategy can be embedded through organizational practice (Kamariotou et al., 2018; Marabelli and Galliers, 2017) and the broader environment (Bharadwaj et al., 2013; Orlikowski et al., 2016). Our study shows that some firms do this, particularly in the connection and immersion phases. We uncovered the underpinning concepts of learning (Winter, 2003), opportunistic behavior (Baker and Sinkula, 2009), and fluid IT development (El Sawy, 2003;

Hao and Song, 2016; Tanriverdi et al., 2010) in the connection, immersion, and fusion phases and demonstrated digital aligning in the fusion phase.

Research contributions

This study set out to develop a holistic view of how SMEs deploy DCs to achieve digital strategic alignment. Our conceptualization of digital alignment as a nuanced process comprising five phases of aligning addresses many of the limitations specified in prior work on digital alignment. In our study, we identified different combinations of sensing, seizing, and reorganizing behaviors associated with different types of IS strategy aligning, thus addressing Yeow et al.'s (2018) inability to account for the variety of approaches to alignment reported in the literature (Karpovsky and Galliers, 2015). Furthermore, our research dissects the process of IS strategizing described in Marabelli and Galliers (2017) and extends Yeow et al.'s (2018) digital alignment model.

The contribution of our new conceptualizations—the passive acceptance and transformation phases of digital aligning—helps extend strategic IS scholarship in several ways. First, our conceptualizations provide nuance to previous models. Thus, we offer insight into the shaping of attitudes and behaviors at the outset of digital alignment activity, the recognition of the intertwining of people and digital technologies during alignment, and the potential transformative outcomes of digital alignment when realized.

Second, these more nuanced phases shed greater light on the nature of alignment. Unlike hierarchical models (e.g., Churchill and Lewis, 1983; Scott and Bruce, 1987), our model is not based on a single measure (e.g., the number of digital technologies adopted) and therefore provides a more robust indication of the characteristics of each phase and the variety of behaviors that SMEs may exhibit. Moreover, our five-phase model identifies the behaviors associated with different phases, including the mindset of those leading the organization.

Third, IS strategy literature is lacking in practice-based research data, with prior research focusing on macro-level thinking rather than micro, everyday practices that enact strategy (Marabelli and Galliers, 2017). Our study incorporates both organizational behaviors and changes in strategizing, while accounting for how individuals practice strategy. In doing so, it situates the individual within the behavior of the organization as it pursues strategic digital alignment (Orlikowski et al., 2016).

Fourth, our findings, though focused on SMEs, may hold relevance for digital strategy aligning in large organizations as well. SMEs often operate in the same markets as large firms, so a failure to investigate how they pursue digital alignment provides an incomplete understanding of the context in which large firms operate. In addition, while SMEs are more flexible with less structural complexity and have fewer legacy constraints than large organizations, sometimes large firms are either broken into smaller units (e.g., geographical units) or internally divided in the hope of mirroring the flexibility and innovative behaviors of their smaller, more entrepreneurial counterparts. Moreover, the enacted behaviors associated with SME digital strategy aligning may be relevant for large organizations. For example, detecting that a business unit is in the passive acceptance phase of aligning may inform subsequent interventions, such as making funding available or sharing best practices from similar units in the immersion phase to reduce risk. Conversely, if a business unit is in the transformation phase, it can serve as an exemplar for other organizational units.

Finally, our study answers some ongoing questions in the SME literature. For example, our findings support the view that a lack of planning hinders IS development in SMEs (Gutierrez et al., 2009) and also explain how digital leadership drives IS strategy alignment in SMEs (Cenamor et al., 2019; Li et al., 2016).

Practical implications

Our study reveals the relative importance of external drivers for organizations at the more reactive, ad hoc phases of technology adoption versus internal drivers for firms using digital technology in a more proactive, integrated manner. Specifically, we did not find that SMEs of a particular size, industry, or region were more likely than others to be in the early or late phases of digital alignment. Instead, we found that when digital alignment was driven mostly by external factors (e.g., regulatory pressures, consumer expectations), SMEs tended to adopt arbitrary initiatives, with technology serving as a supportive element. By contrast, when digital alignment was driven mostly by the enthusiasm and mindset of key individuals, SMEs embraced transformative strategies, with technology intertwined with the business.

Three insights for SMEs derived from our findings may provide directional assistance in digital strategic alignment. First, the influence of core personnel, especially managers, as the drivers and facilitators of alignment should not be overlooked in digital strategy alignment. Managers in SMEs may compensate for the lack of resources in comparison with large organizations. SME leaders should act as key environment "sensors" and "learners" for their organizations in terms of disseminating knowledge of trends, competitor activity, and technological possibilities, to embed DCs in their organizations. Second, the flexible and responsive characteristics of SMEs should be fully leveraged to embed digital technologies and practices as incremental reconfigurations of the firm. The reduced structural complexity and fewer legacy constraints of SMEs (vs. large firms) enable reorganization by reconfiguration, which is advantageous in the digital environment (Girod and Whittington, 2017). Third, SMEs can use our model as a diagnostic tool to help identify the phase of alignment they are currently in, as this may assist them in determining which components of DCs to adopt.

Future research directions

This study contributes novel insight into both SME managerial perspectives and digital strategy aligning, but it also has several limitations. The data were cross-sectional and collected across a range of industries, which might limit understanding of the phenomenon. As SMEs are developing entities, a longitudinal study involving multiple interviews in each firm would help monitor firms' continued aligning in the digital environment. Research could also extend our approach by focusing on emerging countries. Alternatively, studies could adopt a sector-specific approach to investigate whether any specificities of digital adoption are dependent on the sector (e.g., service or manufacturing industries).

We sought to complement the interviewees' descriptions of their organization and the state of digitalization with secondary data. However, we acknowledge the limitation of the study in terms of the restricted triangulation of the data collection. Only additional interviews within each organization or analysis of contemporary firm documents would have enabled us to confirm or challenge those narratives. As interviews are the "main road to multiple realities" (Stake 1995, p. 64), future research could endeavor to obtain richer descriptions through within-case interviewee triangulation (Farquhar et al., 2020).

Finally, future research could provide measurable insight into the phenomena identified herein. For example, studies could identify and measure constructs influencing SME owner/manager behaviors or identify specific relationships between the proactive adoption and level of integration of technologies.

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Region	ID	Sector	Years established	Uses of digital technology identified	Phase of digital aligning
South Europe	1	Agriculture	20+	ERP, no social media	Passive acceptance
	2	Agriculture	20+	ERP, Electronic data interchange (EDI), software product traceability, no social media	Connection
	3	Manufacturing	20+	ERP, software product traceability, Skype and Viber, no social media	Connection
	4	Tourism	20+	Social media (Facebook, Twitter, Instagram, YouTube), ERP, CRM, cloud systems, Google AdWords, online advertising.	Immersion
	5	Retail	2-5	E-commerce, social media (Facebook, Twitter, Instagram, YouTube)	Connection
	6	Agriculture	6-10	E-commerce, business management software, social media (Facebook, Twitter), software product traceability	Immersion
	7	Services	20+	Social media (Facebook, LinkedIn and Twitter), cloud (Google Apps), geolocation, balanced scorecard software.	Connection
	8	Manufacturing	11-19	Social media (Facebook, LinkedIn), ERP geolocation	Connection
	9	Services	2-5	Social media (Facebook and Twitter), B2B online platforms, business management software, CRM	Connection
	10	Retail	20+	E-commerce, SEO, SEM, blog, social media (Facebook, Twitter, Instagram, Google+), ERP, CRM (mailing, newsletters), point of sale (POS), terminal solutions	Immersion
	11	Services	6-10	Social media (Facebook, Twitter, LinkedIn), ERP, CRM (mailing, newsletters), content management system (CMS), open application programming interface (Open API), other business management software	Fusion
	12	Agriculture	20+	Social media (Facebook, Twitter), ERP, EDI	Immersion
	13	Services	6-10	Blog, social media (Facebook, Twitter, LinkedIn), CRM (notifications, newsletter, emails), data mining	Immersion
	14	Services	6-10	Social media (Facebook, Twitter, Instagram, YouTube, LinkedIn), Hootsuite, business intelligence, CRM (notifications, newsletter, emails), e-commerce, automated ticket booking, geolocation system, revenue management software	Transformation
	15	Services	6-10	Social media presence, videos, apps	Immersion
	16	Manufacturing	6-10	Social media presence, videos, apps, YouTube channel, blog, online shop	Immersion
	17	Tourism	20+	Website	Passive acceptance
	18	Manufacturing	20+	Social media presence, videos, apps, YouTube channel, blog, online shop	Transformation
	19	Retail	2-5	Social media presence, videos, apps, YouTube, blog, online shop	Immersion
	20	Manufacturing	20+	Social media presence, videos, YouTube, blog	Connection
	21	Services	6-10	Interactive website, social media presence, videos, YouTube, blog	Fusion
	22	Tourism	11-19	Social media presence, videos, YouTube, online booking	Immersion
	23	Retail	20+	Social media presence, videos, YouTube	Immersion
North Europe	24	Services	11-19	Apps, software, call back, limited social media	Immersion
	25	Retail	6-10	Cloud, online payment, social media, supply management system	Immersion
	26	Manufacturing	11-19	Online supply ordering, limited social media	Connection
	27	Retail	20+	Supply management system, social media presence	Immersion
	28	Services	11-19	Interactive demos, call backs	Connection
	29	Retail	11-19	Ecommerce, social media presence	Immersion
	30	Manufacturing	20+	YouTube channel, limited social media presence	Fusion
	31	Manufacturing	20+	Videos, YouTube channel, social media	Fusion
	32	Retail	6-10	Social media, online store	Connection
	33	Manufacturing	2-5	Facebook presence	Passive acceptance
	34	Services	11-19	Social media presence, videos, YouTube, blog	Immersion

35	Retail	2-5	Website	Passive acceptance
36	Agriculture	11-19	Social media presence, blog	Transformation
37	Services	6-10	Social media presence, videos, apps, YouTube channel, blog	Immersion
38	Services	11-19	Interactive website	Connection
39	Tourism	6-10	Interactive website, online booking, social media presence	Immersion
40	Services	11-19	Limited social media presence	Connection
41	Tourism	20+	Interactive website, social media presence	Immersion
42	Manufacturing	11-19	Interactive website	Connection
43	Manufacturing	6-10	Interactive website, social media presence	Immersion

Appendix 1. Characteristics of sample organizations

Aspects of DCs	Questions
1. Sensing (Yeow et al. 2018; Girod and Withington, 2017; Teece et al. 1997; Anning-Dorson, 2017; Marabelli and Galliers, 2017)	1. What tactical and strategic outcomes does your business see by adopting digital technologies? 2. What risks/threats did you consider when making the decision to engage in digital activity? 3. What are the key internal and external environmental factors that impact upon your business that lead you to adopt digital practices? 4. What are the drivers, if any, for you to adopt digital strategies and or tools in your business?
2. Seizing (Yeow et al. 2018; Girod and Withington, 2017; Teece et al. 1997; Siren and Kohtamaki, 2016; Spithoven et al., 2013)	5. What technologies/platforms are used and for what purpose/benefits? 6. Have you experimented or trialled any digital tools as a point of innovation? What was the result and why? 7. To what extent is digital technology integrated in your business?
3. Reorganising (Yeow et al. 2018; Girod and Withington, 2017; Teece et al. 1997; Vaccaro et al., 2012; Orlikowski and Scott, 2015; Day 2011)	8. How do you organise, and structure digital activity in your organization? 9. Do you measure digital activities? How? 10. Have your practices changed as a result of the digital environment? 11. Is there one person within the organization that takes responsibility and or leadership of digital aspects? Who and what skills do they process for this role?

Appendix 2. Interview questions related to the components of DCs