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Internal organizational factors driving digital transformation for business model innovation in SMEs

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Abstract

Purpose: The primary purpose of this paper is to investigate which internal organizational factors drive the renewal of SMEs' business strategy and business culture to support their digital transformation trajectory.

Design/methodology/approach : The paper builds on a literature study and Delphi study from both a South African and Dutch scholarly and industry perspective. For the Delphi study a questionnaire was used to determine the commonly cited internal organizational factors that drive digital transformation for business model innovation in SMEs in an emerging and a developed economy. These factors were then confronted with the insights from the literature study to draw literature-based and empirically grounded insights.

Findings: Specific internal organizational factors are identified that contribute to the renewal of SMEs' business strategy and business culture which support their digital transformation trajectory.

Originality/value : The study contributes to the current understanding of the internal organizational factors that drive digital transformation for business model innovation in SMEs. Researchers can use these factors as a basis for future research. For practitioners, the findings provide a guideline which SMEs can use to (re)arrange business activities to enable digital transformation-induced business model innovation.

Keywords: Business model innovation; Digital transformation; Internal organization; SMEs

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Introduction

Digital transformation is defined as a way to deploy digital technologies within an organization that help to create and appropriate more value for an organization (Verhoef et al., 2021, p.889). Such transformation typically leads to business model innovation (see Di Vaio et al., 2021), including changes in the core organizational business processes (e.g. Usai et al., 2021), capabilities (e.g. Guinan et al., 2019; Rialti et al., 2019), and exploitation of completely new market opportunities (Chen et al., 2014; Tan et al., 2015; Venkatraman, 1994; Wengler et al., 2021). Essentially, digital transformation is seen as an enabler for continuous progression of businesses models (Ziółkowska, 2021), aligning them better with the digital economy and strengthening digital customer and business partner relationships (Kim, 2021; Kotarba, 2018).

Literature on digital transformation has emphasized the various digital transformation outcomes on organizational structure and business model performance (Eller et al., 2020; Klos et al., 2021; Mhlungu et al., 2019; Pucihar et al., 2019; Ram and Zhang, 2021). For instance, Ardito et al. (2021) assess the direct effect of digital transformation (jointly with environmental orientation) on the product and process innovation performance of small and medium-sized enterprises (SMEs). Similarly, Favoretto et al. (2021) analyzed the effect of digital transformation on business models and show that digital transformation forces manufacturing companies to change their business logic, which brings about changes in organizational elements such as value architecture and technological structure. Within this literature strand, there are also studies specifically focusing on digital technological tools used by organizations that are innovating the way they do business and implement digital transformation, integrating big data, artificial intelligence, 3D printers, and social media in their business processes (e.g. Ram and Zhang, 2021; Rothberg and Erickson, 2017).

Despite recent work that focuses on digital transformation outcomes, there is less understanding of the internal organizational factors within organizations that drive digital transformation processes and related business model innovation. There are some exceptions, such as Hrustek et al. (2019) who reflect on factors which lead to digital transformation, e.g. customer drivers, and technology drivers. However, their work focuses on external forces as drivers affecting digital transformation and in large organizations. There is still a lack of systematic knowledge of internal organizational factors that drive digital transformation (Bin and Hui, 2021; Gasperlin et al., 2021) and particularly concerning SMEs (Bin and Hui, 2021; El Hilali et al., 2020; Gasperlin et al., 2021; Li et al., 2018). SMEs are often regarded as flexible and agile organizations, resulting in a competitive advantage over large businesses. Yet, they are often also organizationally less prepared for technological turbulence (Azevedo and Almeida, 2021), experiencing standardization challenges, cybersecurity issues, and a lack of a digitally skilled workforce (Horváth and Szabó, 2019), which might challenge digital transformation-induced business model innovation.

At the same time, digital transformation requires internal organizational adaptation, such as changes to processes, structures and especially strategy and culture (Verhoef et al., 2021; Zhang et al., 2022; Badasjane et al., 2022). In particular, business strategy renewal as an organizational driver is beneficial to businesses in multiple ways, such as satisfying customer needs, reducing resource waste, and achieving ambidexterity, making it critical for stimulating these other organizational processes as well (Wang, 2022). Yet, several authors (Matt et al., 2015; Hess et al., 2016; Hyvönen, 2018) have argued that business leaders and managers still lack the skills and knowledge to formulate and implement a digital strategy, which is why only a few businesses have managed to implement digital transformation successfully. Similarly, Albrecht (2015) and Hemerling et al. (2018) claim that culture is one of the key drivers contributing to the failure of the digital transformation process. Pedersen (2022) agrees, arguing that business leaders and managers lack the understanding and knowledge of how digital transformation changes and influences the business culture, calling for more research to identify which organizational factors contribute to SMEs' culture renewal to drive digital transformation for business model innovation.

Ultimately, there is a need to focus on internal organizational factors that foster digital transformation and related business model innovation through strategy and culture renewal because the external drivers often influence digital transformation-induced business model innovation through internal organizational factors (Zhang et al., 2022). SMEs, just like any other organization, digest external influences often through internal organizational adaptation (see Greenwood et al., 2011). Therefore, the central research question that aimed to support the closing of the above knowledge gaps was *Which internal organizational factors drive the renewal of SMEs' business strategy and culture to support their digital transformation trajectory?*

An exploratory research approach using a Delphi study was used to answer the main research question, by including a varied population sample to achieve a convergence of opinions about which internal organizational factors drive business strategy and culture renewal necessary for digital transformation for business model innovation in SMEs. The intended contribution of this research to theory and practice was twofold. Firstly, this research aimed to contribute to the literature on two organizational drivers of digital transformation for business model innovation in SMEs, namely business strategy and business culture renewal, by developing an overview of the internal organizational factors linked to either of the two. Secondly, this study aimed to provide practical insights for SMEs that want to set up, develop, or restructure their internal organizations to enable digital transformation for business model innovation.

After this introductory section, the remainder of this paper is organized as follows: The next section deals with the literature on digital transformation and its influence on changes in the strategy and culture of organizations, which are concepts that are directly related to business model innovation. The empirical research methods that were used to further deepen the understanding of the internal organizational factors driving digital transformation for business model innovation in SMEs are explained in the third section. The empirical research results are presented in the fourth section. In the fifth section these results are discussed, they are confronted with the literature, literature-based and empirically grounded propositions are raised, the limitations of this research are highlighted, and avenues for future research are outlined. The last section closes with a concise conclusion.

Theoretical background

Digital transformation and business model innovation

Digital transformation - the introduction of new digital technology (Eksell and Härenstam, 2017) - and business model innovation - the innovative rearrangement of business activities (Eksell and Härenstam, 2017) - can exist independently of each other. In addition, digital transformation may also affect the business model innovation of organizations (Eksell and Härenstam, 2017). Digital transformation and business model innovation functioning as two independent entities are represented by the images on the left and right sides, respectively, in Figure 1.

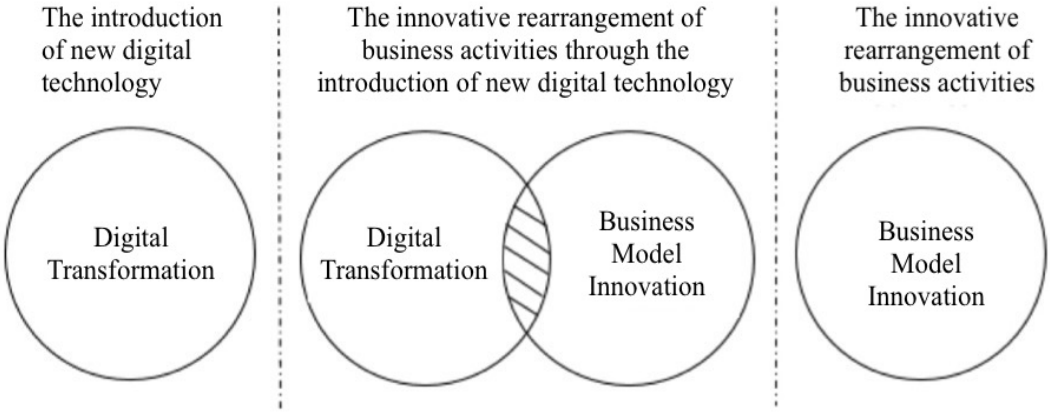

Figure 1

The dependent relationship is visualized in Figure 1 by the image in the middle. The research and this literature review focus on this dependent relationship.

Digital transformation is a complex and continuous process of adopting and adapting digital technologies invoking changes in organizational structures, governance, product development, service delivery, and business models (Romanelli and Tushman, 1994; Verhoef et al., 2021; Warner and Wäger, 2019). It is responsible for adding to the organizational competitive advantage in an increasingly volatile environment (Fitzgerald et al., 2014; Zott and Amit, 2010). Yet, transforming digitally and using it to innovate a business model is challenging (Azevedo and Almeida, 2021; Henriette et al., 2016). It requires an organization-wide change through the implementation and use of digital technologies (Remane et al., 2017; Richter et al., 2017). This is particularly relevant for SMEs, which are seen as a driving force and backbone of most economies (OECD, 2017). By leveraging on digital transformation, SMEs can improve their market intelligence, achieve standardization, and innovate their business model, allowing them to become players and even key players in globalizing markets while having access to a wide range of networks at a relatively low cost (OECD, 2021; Ulas, 2019). However, SMEs are (in comparison to large businesses) often more financially constrained and conservative, making them less ready for changes induced by the set of digital transformation technologies that are being used by organizations to digitally innovate their business models (Azevedo and Almeida, 2021; Eksell and Härenstam, 2017). Digital transformation technologies are defined as combinations of information, computing, communication, and connectivity technologies (Bharadwaj et al., 2013), for example mobile phones, large online datasets, connected devices, low-cost computing resources, machine learning, and natural language processing (Vargo et al., 2021).

Renewal of business strategy

Adopting digital technologies is key to driving digital transformation (Verhoef et al., 2021). Morakanyane et al. (2020) and Fitzgerald et al. (2014) highlight that once the right digital technology to be adopted has been identified by the organization, stimulating the right skill set, and adapting and revising the organizational strategy are imperative for effective implementation of digital transformation-induced business model innovation (see also Westerman et al., 2011). Kane et al. (2015) stress that digital transformation for business model innovation, including the use of various interconnected digital technologies, requires a change in leadership, mindsets, and attitudes towards risk as well as new ways of working and openness to change. In particular, for SMEs, digital transformation for business model innovation can be challenging (Gruber, 2018). Small businesses often have a more specific focus, which tends to reduce the need for digital transformation, leading to a lack of digital elements in their business model, market approach and, most importantly, their business strategy. Blatz et al. (2018), Rothmann and Koch (2014), Szedlak et al. (2019), and Verhoef et al. (2021) highlight that a renewal of organizational business strategy is crucial for digital transformation. Bharadwaj et al. (2013, p. 472) define a digital business strategy as an "organizational strategy formulated and executed by leveraging digital resources to create differential value". It guides the efforts of leaders to create new value propositions by combining the existing capabilities of their companies with capabilities enabled by digital technologies (Sebastian et al., 2017). Digital transformation in SMEs requires a thoroughly defined and adapted digital transformation strategy which centres on the coordination, prioritization, and implementation of digital technologies (Matt et al., 2015).

Renewal of business culture

SMEs often lack the resources, managerial capabilities, and vision to fully understand the cultural impact of digital transformation for business model innovation. Hock et al. (2015) add that SMEs might require a renewal of their business culture to one that is supportive in implementing digital transformation. Business culture consists of artefacts, values, and shared basic assumptions about the organizational business environment (see Schein, 1990). It is perceived as a valuable strategic asset that has the potential to support digital transformation by exploiting digital technologies (Warner and

Wäger, 2019; Westerman et al., 2011). Gamache et al. (2019) and González-Varona et al. (2020) argue that a digital business culture perpetuates innovation, and continuous improvement in skills, products, and resources. Therefore, business cultural attitudes and values can either support or hinder the digital transformation of businesses (Vogelsang et al., 2019), playing a crucial role in the adoption of new technologies (see also Fitzgerald et al., 2014).

Several cultural values needed in digital transformation for SMEs have been identified (Tuukkanen et al., 2022): dynamic responses to changing environmental demands; striving for continuous organizational development and innovation; having an affinity towards the organization; investing in continuous learning; developing tolerance towards mistakes; being open towards calculated risks; nourishing trust between the company and its clients and trust within the organization; and investing in cooperation within the organization. A culture that promotes creativity and innovation for new (and digital) product and service delivery, encourages risk-taking, and creates a sense of urgency in sensing new opportunities also contributes to digital transformation in SMEs and potentially supports business model innovation (Aksoy et al., 2017).

Research methodology

Delphi study

For the empirical part of this study an exploratory research approach using a Delphi study was adopted (Dalkey, 1972; Linstone, 1978; Turoff and Linstone, 2002; Hsu and Sandford, 2007; Avella, 2016). This approach gathers data from varied respondents within their domain of expertise, aims to bridge the gap between theory and practice, and increases an understanding of a certain phenomenon in more depth (Brady, 2015). This method was used to achieve a convergence of opinions about which internal organizational factors relative to the renewal of business strategy and business culture drive digital transformation for business model innovation in SMEs. Consensus reaching was relevant in understanding factors contributing to business strategy as well as business culture, as it enabled participants from different power positions to form or share their opinions and perceptions on the topics, making the observations more generalizable (Brady, 2015). Dalkey (1972, p. 15) states that a Delphi study is predicated on the rationale that "two heads are better than one, or ... n heads are better than one".

Participants from South African and Dutch academic organizations and SMEs

The Delphi study was conducted with scholarly experts in the closely related fields of entrepreneurship, technology, business management, and innovation. Invitations were sent to 19 South African (SA) scholars (lecturers, senior lecturers, professors, and/or academic entrepreneurship specialists) and 10 scholars participated, resulting in a 53% response rate. Invitations were also sent to 26 scholars from the Netherlands (NL) and 10 participated, resulting in a 38% response rate. In total, 20 scholars participated in the study. Tables 1 and 2 present the demographic data of the SA and NL scholars.

The participants from both the SA and NL academic institutes were affiliated to a management or entrepreneurship department, with 1 SA panel member affiliated to the Faculty of Art, Design, and Architecture. Furthermore, the majority of participants were senior lecturers (11 in total), alongside 6 professors and 3 lecturers.

The Delphi study also invited two groups consisting of SA and NL employees/owners of SMEs. No exclusion criteria applied to the SME participants; thus, lower, middle, and top-level employees and/or the owner of an SME could participate in the study. Invitations were sent to 116 SA SMEs, and 8 participated, which is a 7% response rate. 24 invitations were sent to NL SMEs, and 7 participated, resulting in a 29% response rate. The majority of the SME participants from both SA and NL firms were business owners (9 in total). Furthermore, the majority of participants were part of a business with up to 50 employees (13 in total). A total of 15 SME employees and/or owners participated in the Delphi study. Table 3 presents the demographic data of the SA and NL SME participants.

All participating groups in the study exceeded the required minimum number of 7 participants (see Linstone, 1978; Okoli and Pawlowski, 2004).

Table 1.

Scholars' Institutions	Frequency
University of Johannesburg	4
Stellenbosch University	1
University of Pretoria	2
University of Mpumalanga	1
Gordon Institute of Business Science	1
University of South Africa	1
Scholars' Designations	
Lecturer	2
Senior Lecturer	5
Professor	3
Scholars' Affiliation to the University	
Department of Business Management	8
Business School	1
Faculty of Art, Design, and Architecture	1

Table 1: Panel profile of SA scholars (n = 10)

Furthermore, collecting empirical data from representatives of SMEs from both an emerging economy (SA) and a developed economy (NL) (World Bank Data, 2021a; World Bank Data, 2021b) broadened the analytical validity of the insights from the empirical research towards the practice of emerging and developed economies. Although this analytical validity is limited and further research is needed in other emerging and developed economies to strengthen it (Andrade, 2021), it can serve as a basis for such future studies (Patton, 2002).

Two rounds of data collection

All data were collected online in two rounds using Google Forms, and communication with each participant was organized via an online link. The procedure that was followed to conduct the Delphi study consisted of two rounds, which is the minimum required number of rounds in a Delphi study (see Thangaratinam and Redman, 2005). In round 1 in an online questionnaire, the SA and NL scholars and practitioners were asked to rank a pre-structured list of organizational characteristics that are commonly cited in the literature as important in driving digital transformation for business model innovation (see Van Tonder et al., 2020), and were also invited to list additional organizational characteristics, based on their experience. This resulted in an extended list of characteristics that were consolidated in a second version of the online questionnaire. In round 2 the participants were asked to also rank the additional characteristics, which resulted in an extended

Table 2.

Scholars' Institutions	Frequency
University of Amsterdam	1
Vrije Universiteit, Amsterdam	3
University of Groningen	1
Radboud University	1
University of Twente	3
Tilburg University	1
Scholars' Designations	
Lecturer	1
Senior Lecturer	6
Professor	3
Scholars' Affiliation to the University	
School of Business and Economics, Management and Organization	2
Department for Entrepreneurship, Strategy, and Innovation Management	3
Faculty of Science, Innovations in Human Health and Life Sciences	2
Faculty of Economics and Business Management, Entrepreneurship and Innovation	1
Department of Management	1
Entrepreneurship and Small Business Management, Innovation and Technology Management	1

Table 2: Panel profile of NL scholars (n = 10)

list of organizational characteristics that drive digital transformation for business model innovation in SMEs, some literature based and empirically validated, and others empirically based and empirically validated.

Results of round 1

The scholars and SME participants were asked to rate the most important internal organizational factors in adopting digital transformation technologies as pertaining to the highest ranked organizational characteristics, using a 5-point Likert scale from 5 (very important) to 1 (not important at all).

Table 3.

Scholars' Institutions	Frequency SA	Frequency NL
Nationality	8	7
Gender		
Male	6	7
Female	2	-
Designation		
Business owner	6	3
Top-level employees	2	-
Middle-level employees	-	2
Lower-level employees	-	2
Level of Education		
Master's degree	-	7
Grade 12 (Matric) certificate	2	-
Post-matric diploma or certificate	3	-
Postgraduate degree	3	-
Length of Service		
< 1 year	-	1
1-5 years	4	5
6-10 years	1	-
> 10 years	3	1
Industry		
Healthcare	-	1
Construction	1	1
Computer and related activities	3	1
Public sector	-	1

Finance and business services	3	1
Research and development	-	1
IT recruitment	1	
Mobility and infrastructure development	-	1
Business Size		
< 5 employees	4	1
5-20 employees	1	2
21-50 employees	2	3
> 51 employees	1	1

Table 3:Panel profile of SA (n = 8) and NL SMEs (n = 7)

Table 4.

		Mean		Standard Deviation		Mode	
No.	**Item**	**Scholars**	**SMEs**	**Scholars**	**SMEs**	**Scholars**	**SMEs**
1	Openness to new techniques and methods	4.8	4.7	0.8	0.7	5	5
2	Agility	4.4	4.6	0.9	1.0	5	5
3	Digital strategy	4.4	4.3	0.8	0.5	5	5
4	Continuous innovation	4.2	4.2	0.7	1.3	5	5
5	Organizational infrastructure	4.1	3.4	0.9	1.2	4	4
6	Organizational structure	3.7	3.8	0.4	0.5	4	4

Table 4: Internal organizational factors in adopting digital transformation technologies

Table 4 shows that the scholars and SME participants agreed that most importantly, a business should be open to new digital techniques and methods, followed by the ability to move quickly and easily (agility). Both the scholars and SMEs rated having a digital strategy as very important. Continuous innovation was also rated as very important by both groups; however, the highest standard deviation was within this construct (SD = 1.3 for SMEs), indicating that full consensus was not reached among the SME participants. Organizational structure and infrastructure were also deemed important, though their scores indicated that the participants did not think these were as important as the other factors. The majority of scholars claimed that infrastructure is very important, but it is interesting to note that not all SMEs rated this as highly. The participants were asked which additional internal organizational factors they believed would assist an SME in adopting digital transformation technologies. Two statements by participants captured the common opinions on these additional factors:

I think the education of the different types of digital technologies available will assist SMEs to understand the available options while also aiding to adopt the usage. (SME Participant 1)

People (leaders) in the business who are not afraid to apply these technologies and the support for customers if the technologies are not working optimally. (Scholarly Participant 2)

Three of the SME participants and two scholars emphasized the need for flexibility and adaptability when adopting digital technologies.

Both groups of participants were asked to rate the most important internal organizational factors in adopting digital transformation as a concept, again using a 5-point Likert scale from 5 (most important) to 1 (least important).

Table 5 shows that both the scholars and SME participants rated digital capabilities as most important, followed by customer needs and resources as very important, and digital products that are digitally infused as important.

The participants were also asked to give their opinion on whether the type of customer service played a crucial role in the decision to adopt the digital transformation concept, with 16 scholars and 10 SME participants stating that it did. SME Participant 3 captured the common opinion of many participants with the following response:

Definitely. Depending on your customer, their needs are successfully met through digital technologies to a varying degree. I think it mostly depends on both the expectation of your customer (conscious need) as well as the potential added value of digital technologies (unconscious need). If neither of these is true, a (more) digital technology-based product is likely to be incompatible with the business processes of your customer and therefore undesirable. (SME Participant 3)

SME participants were asked two additional questions relating to their product offering and digital transformation technologies (see Table 6).

Table 5.

		Mean		Standard Deviation		Mode	
No.	**Item**	**Scholars**	**SMEs**	**Scholars**	**SMEs**	**Scholars**	**SMEs**
1	Digital capabilities	4.7	4.5	1.0	1.1	5	5
2	Customer needs	4.4	4.3	0.8	0.9	5	5
3	Availability of resources	4.2	4.0	0.5	0.6	4	4
4	Digital products	3.7	3.5	0.6	0.8	4	4

Table 5: Most important internal organizational factors when adopting digital transformation as a concept

Table 6.

Question	Response	Number of participants	Percentage
Does the product that you offer influence your decision to incorporate digital technologies into your daily operations?	Yes	12	77%
	No	3	23%
	Total	15	100%
Do you think that having products on a digital platform in the 21st century is needed to competitively compete in the existing business environment?	Yes	10	67%
	No	2	13%
	Unsure	3	20%
	Total	15	100%

Table 6: Open-ended questions on adoption of digital transformation technologies

From Table 6, it is clear that the adoption process of digital transformation technologies depends on the existing products offered, with 12 of the SME participants stating yes. The majority of these participants (10) stated that products should be offered on a digital platform and three participants were unsure about the question.

Furthermore, to execute the adoption of digital transformation technologies, it is important to identify the types of resources that an SME should have. Most of the participants stated that the human resource aspect is most crucial since employees should possess essential technological skills, an open mindset, and decisiveness as a trait. SME Participant 4 captured this as follows:

Open-minded human resources. A business will need the obvious funding for their digital transformation however the bulk of resistance will come from employees. So, in short, the resources needed are those for change management and digital (and other) skills education. The training required is not just digitally focused but soft skills and mindset shifting training and education. You need employees to change the way they think about things before any digital transformation can take place. (SME Participant 4)

The scholars and SME participants were asked to rate the internal organizational factors they considered most important for adopting business model innovation (from 5 = very important to 1 = not important at all).

It is clear from Table 7 that both the scholars and SME participants rated dynamic capabilities as the most important. The need to be resilient and develop a strategy aimed at innovation were rated as very important across both groups. Furthermore, both groups claimed that the business model innovation process requires both digital capabilities and the introduction of digital products (either fully digital or digitally infused); however, the scholars rated capabilities over products, whereas SME participants rated products over capabilities. Lastly, the type of product offered was rated important.

The SME participants were also asked to give their opinion on the open question of whether a new strategy should be crafted when deciding to pursue digital transformation-induced business model innovation. Only five stated outright that a new strategy is needed, claiming that it is a different way of operating and decision-making. In contrast, ten participants indicated that a new strategy is not needed, giving the following justification:

Depends on what your strategy is; digital technology should be seen as an enabler; evaluate vision and see if it will need a change. (SME Participant 5)

Table 7.

		Mean		Standard Deviation		Mode	
No.	**Item**	**Scholars**	**SMEs**	**Scholars**	**SMEs**	**Scholars**	**SMEs**
1	Dynamic capabilities	4.6	4.1	1.1	0.9	5	4
2	Strategy for innovation	4.3	4.1	1.0	1.1	5	4
3	Resilience	4.0	4.0	0.9	0.8	4	4
4	Digital products	3.8	4.1	0.9	0.9	4	4
5	Digital capabilities	4.3	3.9	0.5	0.7	5	5
6	Product offering	3.8	3.9	1.0	0.8	4	4

Table 7: Most important internal organizational factors when adopting business model

Only if the product is significantly different, otherwise keep it as is. Also, digital transformation is not a goal, but rather a means to the end. (SME Participant 6)

To fully understand why and when digital transformation leads to business model innovation, the difference between a traditional business model and a business model that is underpinned by a collection of digital transformation technologies needs to be articulated clearly. This question was posed to the scholars, with seven participants clearly stating the main difference being that digital transformation-induced business model innovation is more agile and scalable, and allows continuous and rapid business model innovation as the environment changes. Five participants emphasized that speed is a differential factor:

Speed, speed, speed, and lower cost coupled with customer convenience. (Scholarly Participant 7)

Results of round 2

Each participant was required to rank the listed internal organizational factors on a 5-point Likert scale. In terms of the most important internal organizational factors in adopting digital transformation technologies, the participants identified additional internal organizational factors that are critical for an SME to consider (see Table 8).

From Table 8, it is clear that training on the types of digital technologies, benefits, challenges and how to use the technologies were identified as very important by both scholars and SMEs. Competitive pressure in the business environment also contributes to the desire of a business to adopt digital transformation technologies, with both groups rating it as important, but not very important. Resource availability was rated as very important by the scholars, but only important by the SMEs. Furthermore, a mindset of creativity and innovation should be instilled in employees in the process of adopting digital transformation technologies, being rated as very important by both scholars and SMEs. The business culture should also be redesigned, with the majority of SMEs agreeing that this is very important, whereas the scholars rated this as important. Change management and the right leadership were rated by both groups as very important for when a business decides to adopt digital transformation technologies. Collaboration and environmental scanning were rated very important by the scholars; however, the SMEs rated it only as important, with the highest standard deviation at 1.2, indicating a lack of consensus among the group.

The SME participants were also asked to choose the most important digital transformation technologies.

Table 8.

		Mean		Standard Deviation		Mode	
No.	**Item**	**Scholars**	**SMEs**	**Scholars**	**SMEs**	**Scholars**	**SMEs**
1	Training on types of digital technologies, benefits, and challenges and how to use these technologies	4.2	4.4	0.9	0.8	5	5
2	Competitive pressure	3.8	3.7	0.6	0.9	4	4
3	Resource availability	4.3	3.8	0.7	0.9	4	4
4	Creativity and innovation	4.3	3.9	1.1	0.8	5	4
5	Business culture	3.8	4.2	1.1	0.8	5	4
6	Change management	4.0	4.2	0.9	0.8	4	4
7	Leadership	4.3	4.5	0.7	0.9	4	5
8	Collaboration	4.3	3.3	0.8	1.0	5	3
9	Environmental scanning	4.0	3.3	1.0	1.2	4	2

Table 8: Additional internal organizational factors in adopting digital transformation technologies

Table 9 depicts the SA and NL SME perspectives on the types of digital transformation technologies that are crucial for adoption by SMEs.

Table 9 indicates that there was agreement on the major types of digital transformation technologies that should be adopted by SMEs; however, all five SA SMEs rated machine learning as important, and two NL SMEs rating it as not important, with a high standard deviation of 1.3 indicating a lack of consensus. Robotics had mixed responses between the two perspectives, with three SA and two NL SMEs rating it as important and one SA and two NL SMEs rating it as not important, also indicating a lack of consensus, with another high standard deviation of 1.3. Furthermore, SA SMEs rated blockchain as important, but NL SMEs rated this as not important.

As mentioned previously, it is important to understand the difference between a traditional business model and a business model innovated by digital transformation technologies. The scholars were asked what possible benefits or risks they saw of a business model innovated through digital transformation compared to a traditional business model. The results are presented in Figure 2.

Based on Figure 2, it can be substantiated that digital transformation-induced business model innovation may result in an increase in speed from production to customer relationship management while using limited resources. It may better allow an SME to operate in real time, be more agile, and exploit economies of scale, and may make it possible to increase value for their stakeholders. Taking on more risks was identified by only 17% of the participants as a distinguishable factor.

Discussion

The ongoing digitalization of business and society

Table 9.

		SA SME's			NL SME's		
No.	**Item**	**Mean**	**Stand-ard Devia-tion**	**Mode**	**Mean**	**Standard Deviation**	**Mode**
1	Digital applications	4.2	0.4	4	4.3	0.5	4
2	Cloud solutions	4.8	0.4	5	4.1	0.7	4
3	Sales automation	4.0	0.0	4	4.0	0.6	4
4	Cyber security	5.0	0.0	5	4.0	0.6	4
5	Machine learning	4.4	0.5	4	3.6	1.3	5
6	Big data	4.6	0.5	5	3.6	1.0	4
7	Artificial intelligence	4.4	0.5	4	3.4	1.3	3
8	Internet of Things (IoT)	4.8	0.4	5	2.7	1.0	3
9	Blockchain	3.8	0.4	4	2.4	0.5	2
10	Robotics	3.8	1.3	5	3.1	1.1	3

Table 9: SA and NL SME perspectives on adoption of digital transformation technologies

has a considerable impact on organizations, and also on SMEs, which struggle to capitalize on opportunities presented by digital transformation (Kesting and Günzel-Jensen, 2015). These opportunities require SMEs to adapt and rethink their existing business models through incorporating digital transformation technologies, and to bundle these technologies coherently as a digital transformation concept or approach (Crowley et al., 2017). This study aimed to answer the research question: Which internal organizational factors drive the renewal of SMEs' business strategy and culture to support their digital transformation trajectory? To answer the research question, a Delphi study sought consensus among SA and NL scholars and owners/employees of SMEs regarding the concepts of and relationships between the concepts in this research question. The literature-based and Delphi-based empirical results indicate that digital transformation depends on several internal organizational factors linked to the following two organizational drivers for implementation: (a) renewal of business strategy (e.g. Bharadwaj et al., 2013; Matt et al., 2015; Sebastian et al., 2017), and (b) renewal of business culture (e.g. Hock et al., 2015; Tuukkanen et al., 2022; Vogelsang et al., 2019). Below we elaborate further on these and reflect on the relevant literature framework.

Renewal of business strategy as an internal organizational factor

The renewal of business strategy was identified as critical by the panel in our Delphi study, and emphasis was placed on the need to develop a digital transformation strategy and an action plan to implement and execute the strategy. The core internal organizational factors that drive digital transformation for

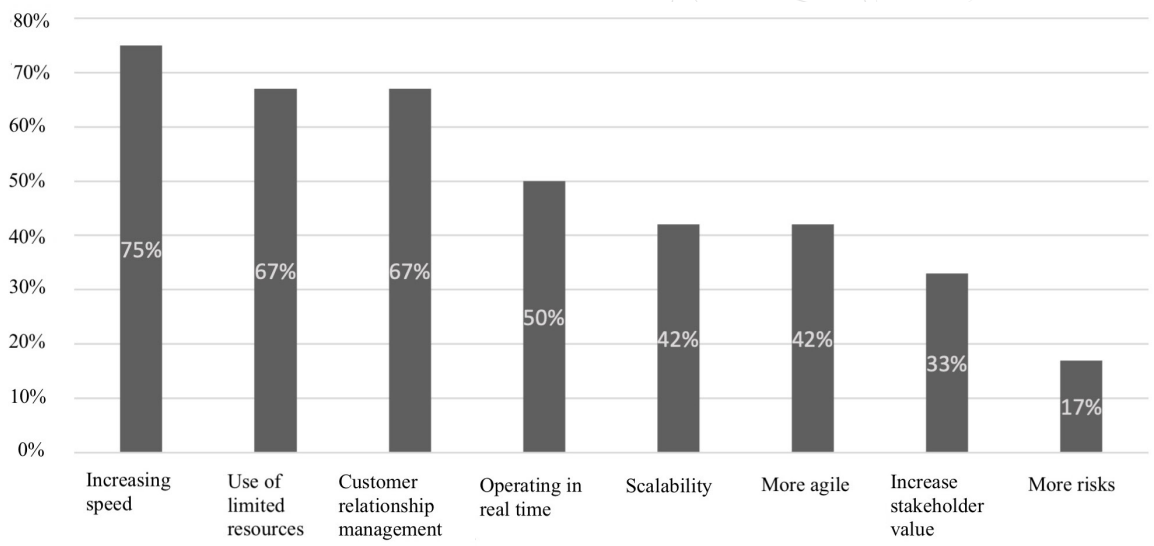

Figure 2:

business model innovation for SMEs to renew their business strategy are (a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies (for the overview of digital transformation technologies see Table 9), and possessing the (b) organizational structure, (c) dynamic capabilities and (d) resources to embed this digital transformation strategy in the business activities of the SME.

These specific factors found in the empirical study are in line with the more general insights from the literature. Latifi and Bouwman (2017) argue that business models are the reflection of strategy execution; following this argument, it can be substantiated that business model innovation is a reflection of an SME's digital transformation strategy. When renewing an SME's strategy, it is important to consider a variety of factors within the business model, such as the product offering, customer relationship and an organizational structure that allows for change, flexibility, and skills development, as identified by the panel. Digital technologies allow businesses to build a close relationship with their customers and a fine-grained understanding of their needs (Klos et al., 2021). Thus, customer needs should remain central by keeping the product offering in mind before and during the transformation process and determining if the product can be used as is, should be redesigned, or if a completely new product is needed. If a redesign is needed, it can be achieved through digitally supported co-creation, as identified by the panel, and in line with research of Khin and Ho (2018). Co-creation is defined as the joint development of new products, the ideas for which come from the consumers through the collection of customer feedback (Ruiz-Alba et al., 2019). According to Chesbrough (2010), business model innovation is eventually about change management; this process takes place through continuous experimentation and trial and error, which will ultimately be achieved with the appropriate managerial support.

Renewal of business culture as an internal organizational factor

To execute and implement the change process, the panel in our Delphi study identified that a well-aligned strategy in harmony with the business culture should be in place, as previously supported by Sow and Aborbie (2018). The core internal organizational factors that drive digital transformation for business model innovation as identified through the Delphi study for SMEs to renew their business culture are (a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies (for the overview of digital transformation technologies see Table 9), and (b) leadership, (c) training programmes, and (d) collaboration and (e) creativity incentives aimed at supporting this process of adoption and embedding.

These specific business strategy and business culture renewal-related internal organizational factors

found in the empirical study align with more general insights from literature. Demirkan et al. (2016) argue that digital transformation requires significant changes to the organization, which will require a change of the business strategy, and this can be difficult to achieve without major reworkings of the business culture and processes. The transformation process of the business model should be implemented throughout the entire business; however, this will require employees to change and adapt (Latifi and Bouwman, 2017). The panel identified that leadership is critical in any change process, and the right leadership in place should enable employees to embrace the adoption process more effectively (Sow and Aborbie, 2018). To execute business culture changes effectively, companies will require leaders who will frame a culture supporting digitalization in different forms (El Sawy et al., 2020). This is also in line with the need for creativity and innovation which will bring people and ideas together, allowing them to experiment and experience new technologies and capabilities in a safe environment (Ashwell, 2017).

Propositions

The findings of the research led to the formulation of the following literature-based and empirically grounded twofold proposition:

Digital transformation-induced business model innovation in an SME is driven by:

1. the renewal of the strategy of the SME, which entails (1a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies, and possessing the (1b) organizational structure, (1c) dynamic capabilities, and (1d) resources to embed this digital transformation strategy in the business activities of the SME;
and

2. the renewal of the culture of the SME in which (2a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies is central, and (2b) leadership, (2c) training programmes, and (2d) collaboration and (2e) creativity incentives are aimed at supporting this process of adoption and embedding.

Contributions, limitations, and avenues for future research

The literature calls for research that develops knowledge and insights regarding the internal organizational factors that drive digital transformation for business model innovation in SMEs (e.g. Bin and Hui, 2021; El Hilali et al., 2020; Gasperlin et al., 2021; Li et al., 2018). This study addresses this call and finds multiple internal organizational factors pertinent to business strategy renewal and business culture renewal that can stimulate the process of digital transformation-induced business model innovation in SMEs. Researchers can take these findings as a basis for future research in SMEs in the same or other countries and types of economies. They can also conduct in-depth research into the antecedents of these factors and the more precise effects of the factors on how digital transformation contributes to and can be integrated with business model innovation in SMEs. Managers and professionals in and around SMEs in practice can benefit from the research insights by considering the identified factors when introducing, further developing, and innovating the digital transformation-induced business models in their SMEs.

Next to the contributions, this research also had its limitations. It was set up based on two internal organizational factors from the literature, i.e. business strategy and culture, and several factors within these two basic factors were found. This focus excludes other possible literature- and theory-based search directions. The use of other theoretical starting points in the search for internal organizational factors, for example from the dynamic capability approach (see Teece et al., 1997), the resource-based view of the firms (see Barney, 1991), or from effectuation theory (see Sarasvathy, 2001), would imply a different starting point and lead to different outcomes and clustering of outcomes. The results of this research are therefore indicative and further research is needed to arrive at deeper analytically valid insights. In addition, the research in this paper assumes overlap between digital transformation and business model innovation (see Eksell and

Härenstam, 2017), but does not pay attention to contexts in which this overlap is thin or not present at all. Follow-up research could study the possibility for SMEs to innovate their business model by using the collection of digital transformation technologies as well as technologies, approaches, and methods that do not belong to this collection. Finally, the Delphi research was conducted with a limited number of representatives of academic institutions and SMEs of an emerging (SA) and a developed (NL) economy. This implies that results are indicative and have limited general analytical validity for SMEs in these and other emerging and developed economies. Future research is needed, in the same and other countries, with different qualitative and quantitative research methods to arrive at broader, deeper, and better generalizable insights.

Conclusion

This study investigated which internal organizational factors drive the renewal of business strategy and business culture to contribute to digital transformation for business model innovation in small and medium-sized enterprises (SMEs). It built on a general literature study and a Delphi study from both a South African (emerging economy) and a Dutch (developed economy) perspective. For the Delphi study a questionnaire was used to query the commonly cited organizational drivers and internal organizational factors that contribute to digital transformation for business model innovation in SMEs in emerging and developed economies. The literature and Delphi study identified that there are two core internal organizational factors that drive digital transformation for business model innovation in SMEs: (a) a renewal of business strategy and (b) a renewal of business culture. Various internal organizational factors within these drivers were identified. The internal organizational strategic factors this literature-based and empirically grounded study identified for SMEs are (a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies, and possessing the (b) organizational structure, (c) dynamic capabilities, and (d) resources to embed this digital transformation strategy in the business activities of the SME. The internal organizational cultural factors the literature-based and empirically grounded study identified for SMEs are a culture in which (a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies is central, and (b) leadership, (c) training programmes, and (d) collaboration and (e) creativity incentives are aimed at supporting this process of adoption and embedding. Researchers can use these drivers and factors as a basis for future research. For practitioners, the findings provide a guideline for (re)arranging business activities in SMEs to enable digital transformation-induced business model innovation.

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