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Abstract

Digital technologies play an important role in ensuring the competitiveness of technology brands. However, such technologies can pose great challenges to companies, particularly when the adoption of connected products, services, and operations requires businesses to implement new strategies. Moreover, the mechanisms through which digital business strategies contribute to company performance are empirically under-researched. To address this research gap, this chapter studies the relations between digital business strategy, technology scanning, and performance in the small and medium-sized enterprise (SME) context. The data were collected using a survey administered to SMEs in Finland. The results show that a digital business strategy alone negatively affects company performance. However, technology scanning acts as a mediator in the relation between digital business strategy and company performance. The chapter improves our understanding of digital transformation by showing that a digital business strategy can positively impact company performance via technology scanning.

Keywords: digital business strategy, technology scanning, company performance, SME

1. Introduction

In recent decades, companies' operating environments have become increasingly digital, which has resulted in interconnections among services, products, and processes (Bharadwaj et al., 2013; Castelo-Branco et al., 2019; Gürdür et al., 2019). However, the adoption of digital technologies poses significant challenges to companies (Li et al., 2018), particularly when connected operations, services, and products alter traditional businesses and require novel strategies for embracing such technologies (Yoo et al., 2012; Kallinikos et al., 2013). The increasing digitalization of companies' business environments has produced studies on digital business strategies (Bharadwaj et al., 2013; Grover and Kohli, 2013; Matt et al., 2015). Technology brands are no exception, as fierce

competition requires new strategic approaches to digital transformation. However, there is no consensus among researchers regarding how companies' digital transformations should relate to their organizational strategies. For example, Hess et al. (2016) explained that several studies have called for digital business strategies that integrate IT and business strategies and may reveal a company's view regarding forthcoming digital business models. Another position is that a company's IT strategy can progress from a functional to an organizational strategy that uses a company's digital resources to generate added value. Therefore, a digital transformation is a crucial strategic initiative that requires its own strategy that would not a subcomponent of the organizational or functional strategy (Hess et al., 2016).

Despite researchers' growing interest in digital business strategies, all the strategic approaches presented above are empirically under-researched. The role of digital business strategy in technology brands' operations is an especially underexplored topic. In addition, most available research on digital business strategies applies to large companies, whereas the digital orientations of SMEs may be different from those of big companies. Pagani (2013) has called for more empirical studies to better understand how digital business strategies create value in the digital economy. Moreover, digital business strategies have been criticized for not providing specific guidelines regarding digital transformations (Hess et al., 2016). In general, the mechanisms through which digital business strategies contribute to company performance require further investigation.

Ross et al. (2017) have suggested that a sound digital strategy offers the means for selecting the type of digital strategy: a digitized solutions strategy or a customer engagement strategy. A digitized solutions strategy pursues information-enriched services and products that provide new value to customers, whereas a customer engagement strategy pursues outstanding, personalized experiences that generate customer loyalty. The digital business strategy examined in this chapter is more similar to a digitized solutions strategy than a customer engagement strategy. In this context, technology scanning is an essential step in digital transformation. Technology scanning refers to collecting information via new digital channels and devices and to the related user behaviors (Nylén and Holmström, 2015) as well as a company's initiative and capacity to explore and exploit new digital technologies (Hess et al., 2016). However, previous studies have not considered technology scanning as a mediator between a digital business strategy and company performance.

To address these research gaps, this chapter studies the relations between a digital business strategy, technology scanning, and SME performance. We propose that the successful use of a digital business strategy enables SMEs to develop their technology scanning practices, which, in turn, enhance company performance. The data were collected via a survey administered to SMEs in Finland. We used confirmatory factor analysis and structural equation modelling to test the proposed theoretical model. The chapter shows that digital business strategy alone negatively impacts company performance. However, technology scanning acts as a mediator in the relation between a digital business strategy and company performance. The chapter improves our

knowledge of digital transformation by showing that digital business strategy can positively impact company performance via technology scanning.

2. Theoretical model and hypotheses

2.1. Digital business strategy

The emergence of the digital transformation has led to the introduction of the concept of "digital business strategy," which integrates IT strategies and business strategies (Bharadwaj et al., 2013; El Sawy et al., 2016; Hess et al., 2016). In contrast to traditional IT or business strategies, which respond to technology through isolation (Hess et al., 2016), digital business strategies treat digital technologies as connective tissue (Bharadwaj et al., 2013). According to this position, digital technologies provide several opportunities for the creation of disruptive innovations, which change the existing value propositions by offering novel solutions and understandings of customers' preferences through the interplay between services and products (Porter and Heppelmann, 2014; Saunila et al., 2019; Vial, 2019). In other words, digital business strategies can be considered transfunctional activities that rely heavily on sharing information via digital platforms, both inside and outside of companies (El Sawy et al., 2016). Therefore, the practical definition of a digital business strategy highlights the leveraging of digital resources in value creation by means of an organizational strategy (Bharadwaj et al., 2013).

2.2. Technology scanning

Nowadays, companies have entered an era in which businesses are not resistant to the cumulative influences of the digital transformation. As digital technology is the main driver of the digital transformation (Hess et al., 2016; Castelo-Branco et al., 2019; Vial, 2019), companies try to find new technological solutions and strategies for implementing such solutions to improve operational performance; this is known as the "digital transformation" (Hess et al., 2016). According to Hess et al. (2016), there are different approaches to the creation, development, and introduction of new technology solutions in the market. For instance, being a traditional follower of technological innovations does not generate competitive advantages; however, new internet-based technologies enable opportunities that require quick actions (Hess et al., 2016) and precise planning (Nylén and Holmström, 2015). Because of the fast pace of the digital transformation, companies are required to actively identify dynamic devices. These devices should be smart enough to discover customers' preferences through user behavior and contextual data (Nylén and Holmström, 2015). The active participation of companies in the identification of new technologies is known as "technology scanning."

2.3. Company performance

According to Tangen (2005), performance is an umbrella concept for all the factors that measure a company's success and its operations. More specifically, a well-performing company is one that achieves the goals set by the company's management leaders (Lebas, 1995). In a similar vein, Atkinson (2012) claimed that good performance ensures that a company's stakeholders achieve

the desired outputs. In this study, performance refers to a company's operational results. Such results can be realized in various forms—for example, as greater profitability or higher sales. Digital transformation is a means for achieving operational results and is thus an antecedent of company performance.

2.4. Research model and hypotheses

This chapter aims to improve our understanding of the interplay between digital business strategies, technology scanning, and company performance in the SME context. We propose that successful use of digital business strategies enables SMEs to develop their technology scanning practices, which, in turn, enhance company performance. The hypothesized connections are shown in the research model (Figure 1). We controlled for company size, company maturity, and the competitive intensity of the markets, as these variables could significantly affect the results of our study.

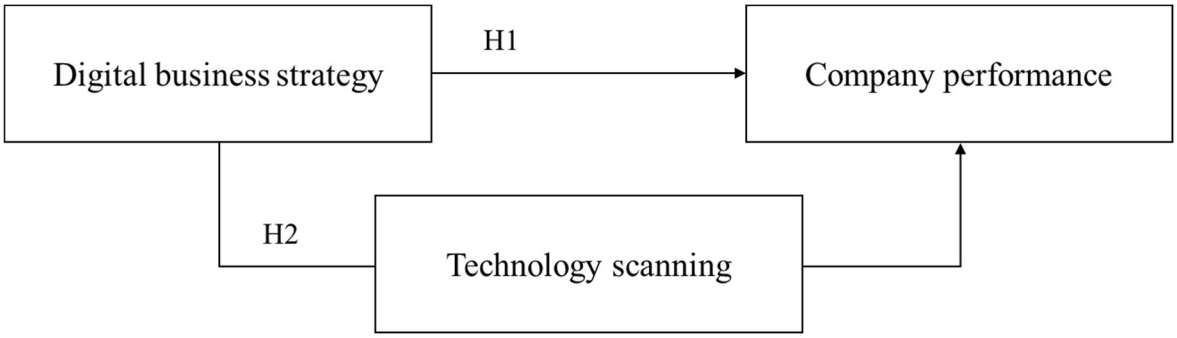

Figure 1. The research model.

The definition of a digital business strategy provided by Bharadwaj et al. (2013) highlights the importance of formulating organizational strategies by leveraging companies' digital solutions and resources to create value and improve organizational performance. According to Goerzig and Bauernhansl (2018), a digital business strategy involves decisions related to the adoption of digital technologies to provide value to a company and improve company performance. By using digital business strategies, companies can participate in digital business environments that provide added value and improve performance (Mathrani et al., 2013; Pagani, 2013). Bharadwaj et al. (2013) also argued that digital business strategies have made it possible for companies to democratize the business-related content that they share in digitizing business environments and across different digital platforms. Therefore, companies can implement digital business strategies and use digital applications and platforms to expand their businesses and increase sales—for example, companies can give their customers more options to choose the right products and services (Grover and Kohli, 2013). By using such request-for-quote strategies, companies can also become more profitable—for example, by avoiding the offering and storing of unnecessary products. Search tools and request-for-quote strategies can increase companies' performance by integrating distribution and retail operations (Grover and Kohli, 2013). Moreover, according to Bharadwaj et al. (2013), companies that use digital business strategies can fine-tune their operations and personalize their

products and/or services based on information on customer preferences. In addition to enabling customers to select and modify their products and services, digital business strategies can also accelerate the speed of product launches (Bharadwaj et al., 2013).

The use of a digital business strategy also allows companies to monitor and scan their operations in real time, which makes it possible to avoid unnecessary work and to fix problems as they appear. Real-time monitoring allows companies to generate more profits. Therefore, due to the low costs of modular and flexible digitization's building blocks, companies can increase their performance and hence profitability (see Grover and Kohli, 2013). Furthermore, by using digital business strategies, companies can take advantage of the decreasing costs of processing, distributing, and storing information and, subsequently, digitize services and products to achieve higher profitability (Grover and Kohli, 2013; Porter, 2001). Based on the arguments presented above, we developed the following hypothesis:

H1: Digital business strategy is positively associated with company performance.

Researchers disagree on whether companies need a digital business strategy or a standalone digital transformation strategy to secure a competitive advantage over other businesses. While a digital business strategy highlights the leveraging of digital resources in value creation by means of an organizational strategy (Bharadwaj et al., 2013), a digital transformation strategy involves insights into how such a digital business strategy should be developed and implemented at the organizational level (Chanias et al., 2019; Hess et al., 2016; Matt et al., 2015). To support the implementation of digital business strategy, Hess et al. (2016) argued that organizations need a standalone strategy for digital transformation that would support and guide the managers through the implementation processes of different digital technologies. This is because in the contemporary business environment, in which organizations need to balance many different strategies, the digital business strategy does not provide support and guidelines for the digital transformation, even though such a strategy indicates the future business vision of an organization.

To address the lack of actual transformational steps in digital business strategies, scholars have highlighted the role of technology scanning (Nylén and Holmström, 2015). For example, Hess et al. (2016) claimed that in some organizations, the development of digital technology is forcing organizations to change and update their processes and businesses, whereas, in some cases, it is other business elements that are driving the change, and organizations need to adapt by identifying new technologies. In other words, organizations need to continuously scan the developing digital technologies and identify the most relevant ones either for supporting their existing businesses or developing new services and products. Nylén and Holmström (2015) further suggested that organizations should be aware of the development progress of digital technology and the associated usage patterns. This means that organizations should stay up-to-date on which kind of solutions, devices, and components are on their way to the business environments in which the organizations are operating. Technology scanning can thus be considered an essential transformational step in the implementation of a digital business strategy for improving company

performance. Consequently, we developed the following hypothesis:

H2: Technology scanning mediates the relationship between a digital business strategy and company performance.

3. Research methodology

3.1. Sample selection and data collection

We collected the data via a web-based questionnaire that assessed company performance in the context of digital business strategies and technology scanning practices among SMEs. The respondents were individuals in management positions, and the analysis unit was the entire company. The respondents worked in SMEs with fewer than 250 employees, which is the maximum number for SMEs designated by the Organization of Finnish Entrepreneurs. Complete replies were obtained from 98 SMEs situated in the Päijät-Häme area of Finland.

Sixty-seven percent of the responses represented companies with a turnover of less than two million euros, and 33% of the responses represented companies with revenues of at least two million euros. Approximately 30% of the companies surveyed were industrial companies, 70% of the companies were in the service sector. Various industries were represented in the sample, including production, trade, information technology, construction, and real estate.

3.2. Measures

All measures were based on the previous literature on the digital transformation. All scales were unidimensional, as verified by means of confirmatory factor analysis regarding model fit indices and content validity (Section 4).

Company performance. Company performance was measured via two subjective indicators. Relative performance measures were used due to the study's multi-company and multi-industry design. The respondents were asked to assess their relative performance, including profitability, and sales compared to their competitors. All company performance items were assessed using a five-point Likert scale that varied from weak (score number 1) to excellent (score number 5).

Digital business strategy. Digital business strategy was evaluated via three items that explored the respondents' perceptions of the introduction of new strategies for transforming what a company is selling (Ross et al., 2017). The construct included the following items: "Our company is strategically aiming at good customer value through its digital product portfolio" (DBS1), "Our company is strategically aiming at good customer value through its digital service portfolio" (DBS2), and "Our company responds to the changing customer needs with digitality" (DBS3). All items pertaining to the digital business strategy were assessed using a five-point Likert scale that varied from totally disagree (score number 1) to totally agree (score number 5).

Technology scanning. Technology scanning was measured via three items that explored the respondents' perceptions of opportunity exploitation for creating aggregated value through digital

services and products (Nylén and Holmström, 2015). The construct included the following items: "Our company is actively seeking new technological opportunities" (TSC1), "Our strategic goal is to improve operational performance through digitality" (TSC2), and "Our company is planning to introduce new digital tools" (TSC3). All items pertaining to technology scanning were assessed using a five-point Likert scale that varied from totally disagree (score number 1) to totally agree (score number 5).

Control variables. As company size and company maturity may significantly influence company performance (e.g., Smith and Cooper, 1988), these variables were controlled for. Company size was evaluated via the number of employees working in the respondent's company, while company maturity was evaluated by asking the respondents to indicate the number of years since the company's establishment. Competition in markets can also affect how well a company performs; therefore, it was also considered a control variable (Scott and Christensen, 1995).

3.3. Bias

As the data for all constructs were attained using the same questionnaire with self-reported information, there was a possibility of common method bias. This possibility was estimated employing Harman's single-factor test (Podsakoff and Organ, 1986). An unrotated factor solution involving all items extracted more than a single factor, accounting for 68.20% of the entire variance. The first factor described 48.06% of the variance. As no single factor emerged and no single factor accounted for most of the variance, common method bias was not a significant issue.

4. Study results

4.1. Assessment of the measurement model

We tested the measurement model using confirmatory factor analysis (CFA) before testing the structural model. Table 1 shows the indices that were used to assess the measurement model. The indices included the root mean squared error of approximation (RMSEA = 0.053), the Tucker-Lewis index (TLI = 0.979), comparative fit index (CFI = 0.986), and standardized root mean squared residual (SRMR = 0.059). These fit indices were acceptable. All constructs were found to be extremely credible because all Cronbach's alpha values were greater than 0.70, as recommended by Fornell and Larcker (1981). Furthermore, the composite reliability (CR) of each construct was between 0.859 and 0.917, above the 0.7 limit suggested by Fornell and Larcker (1981). The average variance extracted (AVE) values ranged between 0.715 and 0.787, above the suggested minimum of 0.50 (Hair et al., 1998). Furthermore, the standardized estimates of the items ranged from 0.70 to 0.93 for digital business strategy, 0.70 to 0.88 for technology scanning, and 0.69 to 0.75 for company performance. Each indicator exhibited significant and substantial loadings on its assumed construct. These measures ensured convergent validity. The desired level of discriminant validity was also met because the square root of the AVE (as shown in Table 2) was bigger than the correlations between the factor pairs. Thus, regarding the measurement model, all tests for discriminant and convergent validity, reliability, and overall fit showed acceptable results.

Table 1: The results of CFA and reliability tests

Constructs	Item	Cronbach's α	CR	AVE
Digital business strategy	DBS1 DBS2 DBS3	0.863	0.917	0.787
Technology scanning	TSC1 TSC2 TSC3	0.799	0.882	0.715
Company performance	PER1 PER2	0.671	0.859	0.753

Note: Goodness of fit statistics: RMSEA = 0.053, TLI = 0.979, CFI = 0.986, SRMR = 0.059.

Table 2: Correlation matrix, descriptive statistics, and discriminant validity

	Mean	SD	1	2	3
1 Digital business strategy	3.619	1.053	**0.887**		
2 Technology scanning	3.646	0.978	0.614***	**0.846**	
3 Company performance	2.786	0.547	0.063	0.364***	**0.868**

Note: ***$p \leq .001$; the square root of the average variance extracted is presented in bold diagonal values.

4.2. Structural model testing

To estimate the structural relationships, we tested the hypothesized model presented in Section 3. The results of the goodness-of-fit measures demonstrated a good fit: RMSEA = 0.025, TLI = 0.991, CFI = 0.994, and SRMR = 0.080. Figure 2 represents the standardized estimates of structural paths. Table 3 shows the structural model results described in Figure 2. The path between digital business strategy and company performance was significant ($p \leq .05$) and strong (standardized path coefficient = -0.62) but negative. Therefore, making use of a digital business strategy leads to decreased company performance. However, digital business strategy was significantly ($p \leq .001$) and strongly (standardized path coefficient = 0.72) related to technology scanning. Furthermore, technology scanning was significantly ($p \leq .01$) and strongly (standardized path coefficient = 0.92) related to company performance. These findings show that the connection between digital business strategy and company performance is mediated by technology scanning.

Next, we formulated an alternative model in which technology scanning was treated as an exogenous variable instead of a mediation variable. The model's goodness-of-fit indices were RMSEA = 0.116, TLI = 0.810, CFI = 0.857, and SRMR = 0.220. The model demonstrated a poor fit and thus supported the conception that the structural model with technology scanning as a mediator had higher explanatory power than the competing model.

We also analyzed the influence of the control variables, including company size, company maturity, and competitive intensity in the markets, on company performance. However, none of

these relationships were targeted by the hypotheses. This analysis revealed that neither company size (standardized path coefficient = 0.046, ns), company maturity (standardized path coefficient = -0.17, ns), nor competitive intensity in the markets (standardized path coefficient = -0.073, ns) had a statistically significant effect on company performance. Thus, the hypothesized connections were confirmed regardless of company size, company maturity, and competitive intensity in the markets.

In sum, the results demonstrate significant support for the hypothesized connection between digital business strategy and company performance. However, opposite to the hypothesis, the relationship was found to be negative. Also, the findings revealed the significance of technology scanning as a mediator between digital business strategy and company performance. These findings suggest that digital business strategies negatively affect company performance; however, when there is technology scanning, the effect is positive. Company size, company maturity, and competitive intensity did not affect company performance.

Table 3: Structural model results

Structural paths	**Coefficient**	**SE**	**z-value**
Company performance <- Competitive intensity	-0.027	0.045	-0.61
Company performance <- Company size	0.038	0.110	0.34
Company performance <- Company maturity	-0.134	0.104	-1.28
Company performance <- Digital business strategy	-0.229	0.096	-2.40*
Company performance <- Technology scanning	0.311	0.104	2.99**
Technology scanning <- Digital business strategy	0.788	0.115	6.84***

Note: Goodness of fit statistics: RMSEA = 0.025, TLI = 0.991, CFI = 0.994, SRMR = 0.080.

Sign. *** $p \leq .001$, ** $.001 < p \leq .01$, * $.01 < p \leq .05$.

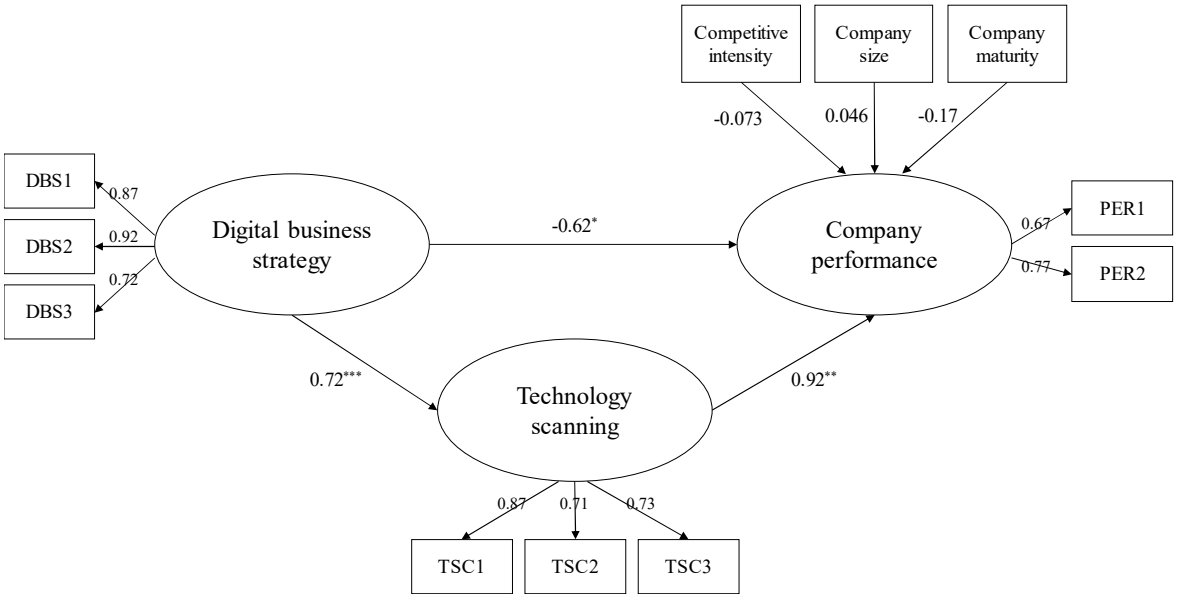

Figure 2. Standardized structural path estimates.

5. Conclusions

5.1. Contribution to theory

The aim of this chapter was to explore the impact of digital business strategies on companies' performance as well as the mediating role of technology scanning in the improvement of company performance in relation to the adoption of digital business strategies. Using a survey distributed to SMEs in Finland, we empirically tested the implications of technology scanning and provided novel contributions to existing theoretical and conceptual studies. Our study contributes to research on digital technologies in operations management in several ways.

First, unlike previous research, our study investigated the relationship between SMEs' digital business strategies and performance. The results clarify the controversial role of digital business strategies in determining company performance among SMEs. The findings demonstrate a negative relation between digital business strategies and company performance. The study contributes to the discussion on digital business strategies by showing that digital business strategy alone does not enhance SME performance. This is the case even if SMEs focus on digitized solutions that target information-enriched services and products (see Ross et al., 2017). The results thus strongly support Hess et al. (2016), who argued that while a digital business strategy may demonstrate a company's vision in terms of forthcoming digital business models, it usually does not describe the concrete steps required to take advantage of the opportunities provided by the company's structures, processes, and products in relation to novel digital technologies.

Second, the study contributes to the debate on digital business strategies in SMEs by showing that technology scanning is an essential mediator and a transformational solution for implementing a digital business strategy in a way that positively affects company performance. This result supports the prior arguments of Nylén and Holmström (2015) and Hess et al. (2016), who highlighted technology scanning as one of the most critical transformational practices for successfully employing a digital business strategy. Thus, the findings do not mean that digital business strategies do not play a role in enhancing SME performance but point to the fact that the influence of digital business strategies on SME performance is mediated by technology scanning.

5.2. Contribution to managerial practice

The study offers important insights for SME managers into how to improve companies' performance using both digital business strategies and technology scanning. For instance, SME managers should be aware of the disruptive effects of exclusively relying on digital business strategies for improving companies' performance and should consider digital business strategies along with technology scanning to improve company performance in terms of profitability and sales. Moreover, managers, regardless of company size, maturity, and competitive intensity, should scan the opportunities provided by technical solutions to achieve enhanced performance in the digital economy. In other words, the digital transformation creates many opportunities for all

types of companies to benefit from technological solutions.

5.3. Limitations and future research directions

The study's limitation is that the data were collected in a single country. Therefore, there may be country-specific characteristics influencing the relationships found in this study. Thus, these relationships require further study and better empirical understanding. In future research, it is important to investigate whether SMEs can use a standalone digital transformation strategy instead of a single practice, such as technology scanning. For example, Hess et al. (2016) suggested that companies require a standalone digital transformation strategy that guides management through the change process, beginning with the unification and use of digital technologies. However, this approach has not been empirically tested in the SME context, in which companies often operate with limited resources.

References

Atkinson, M., 2012. Developing and using a performance management framework: a case study. Measuring Business Excellence, 16(3), 47-56.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., Venkatraman, N., 2013. Digital business strategy: Toward a next generation insights. MIS Quarterly, 37(2), 471-482.

Castelo-Branco, I., Cruz-Jesus, F., Oliveira, T. 2019. Assessing Industry 4.0 readiness in manufacturing: Evidence for the European Union. Computers in Industry, 107, 22-32.

Chanias, S., Myers, M. D., Hess, T., 2019. Digital transformation strategy making in pre-digital organizations: The case of a financial services provider. The Journal of Strategic Information Systems, 28(1), 17-33.

El Sawy, O. A., Kræmmergaard, P., Amsinck, H., Vinther, A. L., 2016. How LEGO Built the Foundations and Enterprise Capabilities for Digital Leadership. MIS Quarterly Executive, 15(2).

Fornell, C., Larcker, D. F., 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39-50.

Goerzig, D., Bauernhansl, T., 2018. Enterprise architectures for the digital transformation in small and medium-sized enterprises. Procedia CIRP, 67, 540-545.

Grover, V., Kohli, R., 2013. Revealing your hand: Caveats in implementing digital business strategy. MIS Quarterly, 37(2), 655-662.

Gürdür, D., El-khoury, J., Törngren, M. 2019. Digitalizing Swedish industry: What is next?: Data analytics readiness assessment of Swedish industry, according to survey results. Computers in Industry, 105, 153-163.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L., 1998. Multivariate data analysis. Prentice hall, Upper Saddle River, NJ.

Hess, T., Matt, C., Benlian, A., Wiesböck, F., 2016. Options for formulating a digital transformation strategy. MIS Quarterly Executive, 15(2).

Kallinikos, J., Aaltonen, A., Marton, A., 2013. The Ambivalent Ontology of Digital Artifacts. MIS Quarterly, 37(2), 357-370.

Lebas, M. J., 1995. Performance measurement and performance management. International Journal of Production Economics, 41(1-3), 23-35.

Li, L., Su, F., Zhang, W., Mao, J. Y., 2018. Digital transformation by SME entrepreneurs: A capability perspective. Information Systems Journal, 28(6), 1129-1157.

Matt, C., Hess, T., Benlian, A., Wiesbock, F., 2016. Options for Formulating a Digital Transformation Strategy. MIS Quarterly Executive, 15(2), 6.

Mathrani, S., Matharani, A., Viehland, D., 2013. Using enterprise systems to realize digital business strategies. Journal of Enterprise Information Management, 26(4), 363-386.

Matt, C., Hess, T., Benlian, A., 2015. Digital transformation strategies. Business & Information Systems Engineering, 57(5), 339-343.

Nylén, D., Holmström, J., 2015. Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation. Business Horizons, 58(1), 57-67.

Pagani, M., 2013. Digital business strategy and value creation: Framing the dynamic cycle of control points. MIS Quarterly, 37(2), 617-632.

Porter, M. E., 2001. Strategy and the Internet. Harvard Business Review, 79(3), 63-78.

Porter, M. E., Heppelmann, J. E., 2014. How smart, connected products are transforming competition. Harvard Business Review, 92(11), 64-88.

Ross, J. W., Beath, C. M., Sebastian, I. M., 2017. How to develop a great digital strategy. MIT Sloan Management Review, 58(2), 7.

Saunila, M., Nasiri, M., Ukko, J., Rantala, T. 2019. Smart technologies and corporate sustainability: The mediation effect of corporate sustainability strategy. Computers in Industry, 108, 178-185.

Scott, W. R., Christensen, S., 1995. The institutional construction of organisations: international and longitudinal studies. Thousand Oaks, CA: Sage.

Smith, C. G., Cooper, A. C., 1988. Established companies diversifying into young industries: A comparison of firms with different levels of performance. Strategic Management Journal, 9(2), 111-121.

Tangen, S., 2005. Demystifying productivity and performance. International Journal of Productivity and Performance Management, 54(1), 34-46.

Vial, G., 2019. Understanding digital transformation: A review and a research agenda. The Journal of Strategic Information Systems

Yoo, Y., Boland Jr, R. J., Lyytinen, K., Majchrzak, A., 2012. Organizing for innovation in the digitized world. Organization Science, 23(5), 1398-1408.