



ARTICLE REVIEW



DIGITAL TRANSFORMATION (DT): AN OVERVIEW OF INTERNATIONAL SCIENTIFIC PRODUCTION IN THE LAST DECADE

TRANSFORMAÇÃO DIGITAL (TD): UMA VISÃO GERAL DA PRODUÇÃO CIENTÍFICA INTERNACIONAL NA ÚLTIMA DÉCADA

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ABSTRACT

Purpose: To describe the state of the art of digital transformation research, providing an overview of some trends in international scientific articles and recommendations for future research.

Methodology/approach: Systematic Literature Review. To select the papers on Digital Transformation (DT) to be evaluated, we retrieved all articles from the Scopus and Wef of Science (WoS) databases. We used "Digital transformation" OR "Digital Transfor*."

Originality/Relevance: Companies have reaped the benefits of increased cost and productivity of technology, which has led to the emergence of new products and services based on technology and information systems.

Key findings: This systematic literature review aims to help managers understand the phenomenon of DT, encourage them to think differently about it, and enable the development of interesting empirical studies in subsequent research.

The work aims to support managers in responding to the strategic challenges of DT.

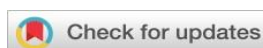
Theoretical/methodological contributions: This paper aims to serve as a basis for further research in this area in order to broaden the scope of scientific discussions on the impact of TD. We provide an updated review on DT from a management perspective, synthesizing and integrating the current state of knowledge in a comprehensive and connective framework, highlighting aspects on Fashion Industry, Market orientation, digital transformation, Innovative Pedagogical Approaches, Digital Technology and Revenue Management.

Keywords: Digital transformation; Digital Technology; technology productivity, systematic literature review.

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RESUMO

Objetivo: Descrever o estado da arte da investigação sobre a transformação digital, fornecendo uma visão geral de algumas tendências em artigos científicos internacionais e recomendações para a investigação futura.

Metodologia/abordagem: Revisão Sistemática da Literatura. Para selecionar os trabalhos sobre Transformação Digital (TD) a serem avaliados, recuperamos todos os artigos das bases de dados Scopus, e Wef of Science (WoS) e utilizamos as palavras-chave “Digital transformation” OR “Digital Transfor*” simultaneamente.

Originalidade/Relevância: as empresas colheram os benefícios do aumento do custo e da produtividade da tecnologia, o que levou ao aparecimento de novos produtos e serviços baseados em tecnologia e sistemas de informação.

Principais conclusões: esta revisão sistemática da literatura visa ajudar os gestores a compreender o fenómeno da TD, encorajá-los a pensar de forma diferente sobre o fenómeno, e permitir o desenvolvimento de estudos empíricos interessantes na investigação subsequente. O trabalho visa apoiar os gestores a responder aos desafios estratégicos da TD.

Contribuições teóricas/metodológicas: Este documento pretende servir de base para uma maior investigação nesta área, a fim de alargar o âmbito das discussões científicas sobre o impacto da DT. Fornecemos uma revisão atualizada sobre DT numa perspectiva de gestão, sintetizando e integrando o estado atual do conhecimento num quadro abrangente e conectivo, destacando aspectos sobre a Indústria da Moda, Orientação de Mercado, Transformação Digital, Abordagens Pedagógicas Inovadoras, Tecnologia Digital e Gestão de Resultados.

Palavras-chave: Transformação digital; tecnologia digital; produtividade tecnológica; revisão sistemática da literatura.

1 | INTRODUCTION

The new digital age brings several opportunities and challenges that accelerate the need for implementing digital solutions in organizations. Even as digital transformation becomes increasingly important, some companies may prefer to avoid standardization due to unique real or perceived needs in their local markets (Kim et al., 2003). Other companies recognize that using digital technologies provides fresh occasions to advance ongoing entrepreneurial orientation by practices, decision-making and strategical decisions, and personalization (Lumpkin & Dess, 2004). Companies recognize IT solutions' critical role in their daily business processes and economic activities (Boudreau and Robey, 2005). This recognition motivates subsidiaries to negotiate digital transformation decisions that may impact these processes and

activities.

To better understand Digital Transformation (TD), it is crucial to make a distinction between two closely related concepts, "digitalization" and "digitization." In accordance with Tilson and colleagues (2010), the first term digitization is a "technical process" that turns technologies digital. It means transformation and portraying something analogous or physical into a digital design that a computer system can use. As a result of digitization, information can be structured in the same format and processed by the same technologies.

Digitization, on the other hand, is a socio-technical practice of implementing digitization competencies to widespread social and institutional perspectives that constitute digital technologies structural (Tilson et al., 2010). Put differently, it is the blend and implementation of digital technologies within an economy, organization, and communities to generate and allocate value. By combining current resources with those enabled by digital technologies, organizations can determine a new value proposal and guideline advocated by decision-makers (Westerman et al., 2011; Bharadwaj et al., 2013; Matt et al., 2015; Ross et al., 2016).

The digital background is converting the typical example of international business. It compels companies to pinpoint new opportunities to preserve their competitive advantage in the domestic market and abroad. The changes are significant, and because we live in an increasingly hyperconnected world, companies of all sizes are unwrapped to new stumbling blocks and opportunities in international markets (Manyika et al., 2016). Manyika and colleagues (2016) describe that digital globalization is changing who participates, in what manner business is conducted around the globe, the speed at which competition moves, and where economic benefits are flowing.

Manifold communities are undergoing a newly sway of digitization (Legner et al., 2017), characterized by the outgrowth and convergence of many groundbreaking technologies in the areas of artificial intelligence, robotics, internet of things, mobile apps, big data, augmented and virtual reality, 3D printers, cloud, blockchain, nanotechnology, biotechnology, and quantum computing. With the imminence of digital technologies, a freshly industrial revolution has turned up, conveying disrupted change and future progress (Schwab, 2017). Here, we note the convergence of the literature on opportunities, problems, and risks with the literature on digital transformation. While the literature on digital transformation offers some clarity, it does not provide all the details needed to understand digital transformation in the context of the gaps to be filled by research in the field.

Researchers such as Maksimenko, Vashko, Zdrestova-Zakharenkova (2021), and the business community have focused on digital companies born in the modern Internet age and offering value propositions based on digital technologies and their international properties. In this context, this paper investigates the following research question: *How is the digital transformation of the last ten years characterized?*

This article analyzes the cutting-edge of research on digital transformation, providing an overview of some trends in international scientific articles and recommendations for future research. The article discusses digital transformation, its primary constructs, and its parameters. A total of 149 articles were analyzed.

2 | THEORETICAL BACKGROUND

2.1 | Digital Transformation

The new digital reality is not equally fertile for everyone. Many established companies with a long tradition and successful pasts have struggled to change promptly and have lost value. Some have even disappeared (Henderson & Clark, 1990). Over the years, these companies have been prevented from evolving by their limited knowledge and capabilities to handle problem identification and solution tasks in a non-digital environment and with reliance on old beliefs. According to Henderson and Clark (1990), to increase the chances of survival and success in the marketplace, many companies in industries that failed to evolve began a significant change. They are trying to integrate digital technology into their business. This organizational change is known as Digital Transformation (DT).

The DT phenomenon presents an opportunity (and need) to advance the existing knowledge about organizational change. Previous research has studied the organizational change in technology (IT) productivity (Markus and Robey, 1988), the latter defined as "computer-based technology for the storage, access, processing, and communication of information" (Molloy and Schwenk, 1995). Digital transformation is redefining, masking, and even eliminating existing industry boundaries, which can direct, from one side, to cross-sector competition. On the supply side, digital convergence is characterized by using the same knowledge base from different industries; on the demand side, it removes the boundaries of markets (Kaluza, Blecker, and Bischof, 1999).

The term "Digital Transformation" refers to changes in the traditional ways of doing business (Dehning et al. 2003, p 7), the ways a company creates, delivers, and captures value. Over the past 40 years, technology and information technology (IT) have been used and considered tools to reduce costs and improve performance and efficiency in various industries (Berlak & Deifel 2002, 2003; Berlak & Weber, 2004; Love, Irani & Edwards, 2004). For example, with increasing technology, the role of lead firms is transformed from that of a central knowledge creator to that of an integrator of specialized and dispersed knowledge stocks. Value chain leaders have become more inclined to outsource advanced technological and R&D activities (Manning et al., 2008; Lewin et al., 2009). The developments have been discussed in the literature, for example, in the internationalization of corporate R&D (Dunning & Lundan, 2009) and the organizational decomposition of innovation (Schmitz & Strambach, 2009). Digitalization requires changing existing processes. Thus, to benefit from new technologies, they need to be strategically planned by managers and implemented at the frontline. This fulfilment is the passkey to the favorable outcome of all strategic efforts (Cadwallader et al., 2010).

The triumph of DT relies not only on applying new digital technologies. Also, how organizations can take advantage of the possibilities that new digital technologies offer to transform the organization (Westerman, Calm ejane, Bonnet, Ferraris & McAfee, 2011). Being a source of competitive advantage, TD has received attention from academics and practitioners (Brynjolfsson & McAfee, 2012). The world is moving towards

digital innovation in all innovation processes. Digital innovation can also describe, in whole or part, innovation results (Boudreau & Lakhani, 2013). can also be used to describe, in whole or in part, the results of innovation (Boudreau & Lakhani, 2013).

Digital transformation generally refers to the accelerated process of technical adaptation by individuals, organizations, communities, and nations resulting from digitalization. (Westerman, Bonnet, & McAfee, 2014). In the digital age, rapid developments in information technology (IT) and information systems (IS) primarily challenge established organizations but also offer them new opportunities (Colbert et al., 2016). However, leveraging the opportunities of these emerging technologies requires organizations to change fundamentally (Hess et al., 2016). Digital technologies generally refer to mobile technologies, cloud technology, big data analytics, social media, artificial intelligence (AI), and the Internet of Things (IoT). They significantly impact customers and organizations (Libert et al., 2016).

In this regard, collaborations between clients and consultants on IT projects are becoming increasingly common. The collaborations are changing the perception of IT consulting firms from pure service providers to an integrative component of an organization's daily business (Gonzalez Benito et al. 2016). Such digital transformation efforts are often carried out in projects requiring new skills and know-how from IT business employees. Organizations often lack one type of required skill or the other (Colbert et al., 2016). That is why many organizations (sometimes even continuously) revert to the support of external service providers (Lessard & Okakwu, 2016).

Existing research has pointed out how emerging technologies present game-changing opportunities and existential threats to large old companies (Sebastian, Ross, Beath, Micker, Moloney & Fonstad, 2017). Such authors cite GE's industrial internet and Philips' digital platform for personalized health information as examples of bets made by big old companies trying to take advantage of the opportunities offered by digital technologies.

The last 20 years have seen increasingly rapid advances in management strategy. When researchers consider the heightened need for competitive advantage in digital environments, increased digitization challenges traditional approaches to strategic formulation (i.e., competitive advantage). Thus, from this perspective, one can conclude that firms' resources and capabilities extend beyond their boundaries and must be embedded in a set of relationships between firms (Koch and Windsperger, 2017). In the context of SMEs, DT encompasses the digitization of the entire organization and business processes (Lu, 2017). Moreover, the process of DT requires an innovative cultural approach capable of sustaining the radical change in firms' organizational configurations along the complex path to the digital configuration in the present and future. While larger companies are beginning to understand the opportunities and challenges of DT, SMEs are still struggling and face challenges on their path to a TD (Moeuf et al., 2017).

In a study by Schadler (2018), 38% of organizations indicated that technological change (e.g., digital transformation) would significantly affect their future business decisions. Scoring is higher than the competition, economics, and politics in impact. DT comprises digital artifacts, infrastructure, and platforms that underlie companies' digital transformation. Challenges lie in achieving the full potential of emerging DT from awareness of the role of these technologies and a diffused digital culture (Garzoni, De

Turi, Secundo & Del Vecchio, 2019).

Implementing sprouting technologies as segment of an organization's digital transformation often requires a new or redesign of its business model, strategy alignment, and value creation process (Vial,2019). The new digital era brings several opportunities and challenges that accelerate the need to implement digital solutions in organizations. Along with the digital shift in technology, for example, in machine learning and artificial intelligence, there has also been a shift in storytelling (Curtis, 2019), with user experience, engagement, and co-creation taking center stage in the design and delivery of general services for success are still rare (Martinez, 2019).

The literature emphasizes the necessity for a thorough understanding of DT's business and managerial aspects, where its potential requires the adoption of collaboration and networking principles (Garzoni, De Turi, Secundo, and Del Vecchio, 2020). Authors such as Cennamo, Dagnino, Minin, and Lanzolla (2020) state that digital technologies can affect organizations at different levels. The dissemination of digital technologies has facilitated a remarkable transformation in the processes, boundaries, roles, structures, and companies' synergies. It is necessary to reflect that digital transformation is not only a conventional IT back-end process. Instead, it affects the organization, redefining strategies, business processes, innovation, and governance mechanisms. Authors Cennamo et al. (2020) indicate that this permeation has led to new ways of organizing companies' value chains and affinities, which promptly progressively exist in digital ecosystems and markets.

It should be noteworthy that the rise of digital transformation is forcing organizations to quickly adapt their processes to changing conditions to remain well-positioned in the future. On the one part, organizations must deal with more technology-driven problems than ever before. Despite that, they also miss the substantial knowledge and ability to deal with these problems. To bridge the gap between the knowledge and skills needed and those available, organizations rely heavily on the services of IT consulting firms. (Oesterle, Buchwald and Urbach,2020). They are moving to the subsequent analysis. Maksimenko, Vashko, and Zdrestova-Zakharenkova (2021) state that the internal business environment of companies has focused on cost reduction, operational efficiency, and strategic differentiation from competitors. Externally, firms have reaped the benefits of increased cost and productivity from technology, which has led to the emergence of new services and products positioned on industrial science and information systems.

Such characteristics reveal that for many companies, digital transformation has changed how they conduct business. Below, Table 1 represents the formal studies and their themes in Digital Transformation through the past ten years.

Table 1
Digital Transformation Studies

Author	Year	Focus	Topic
Medina and Noyons	2008	bibliometric mapping and citation network analysis	Absorptive Capacity (ACAP)

Volberda, Foss and Lyles	2010	Empirical studies	Absorptive Capacity (ACAP)
Roberts et al	2012	Review, Synthesis, and Directions for Future Research	Absorptive Capacity (ACAP)
Ndiege et al	2012	Content analysis	Absorptive Capacity (ACAP)
Regina Lenart	2014	Systematic literature review	Absorptive Capacity (ACAP)
Marco Marabelli and Sue Newell	2014	Systematic literature review	Absorptive Capacity (ACAP)
González and Muina	2014	Novel integration of various concepts	Absorptive Capacity (ACAP)
Mariano and Walter	2015	Content analysis	Absorptive Capacity (ACAP)
Kamal Sakhdari	2016	Systematic literature review	Absorptive Capacity (ACAP)
Soares, Barboza and Paula	2016	quantitative - bibliometric and bibliographic coupling - and qualitative content analyses	Absorptive Capacity (ACAP)
Apriliyanti and Allon	2017	two types of bibliometric co-citation analysis - bibliometric co-citation and bibliometric cartography	Absorptive Capacity (ACAP)
Gao et al.	2017	Literature analysis	Absorptive Capacity (ACAP)
Ciotti and Favreto	2017	Map of the gaps for new academic contributions in the area	Absorptive Capacity (ACAP)
Tran et al.	2019	A better understanding of publications and research trends, and suggests potential directions toward solving this ongoing challenge (Regression - STATA)	Artificial Intelligence (AI)
Sola and Bariviera	2019	Bibliometric study in order to observe research clusters, emerging topics, and leading scholars.	Bitcoin scientific production (BSP)
Hallinger	2019	Systematic literature review	Educational Administration (EA)
Agramunt et al.	2020	bibliometric analysis of the status of the existing research in the field to recognize main topics and help identify research gaps	Absorptive Capacity (ACAP)
Marin et al.	2020	Various bibliometric methods are used to perform this overview, including performance analysis and science mapping of the KM field.	Knowledge management (KM)
Sakhninia et al.	2020	a bibliometric survey of research papers focused on the security aspects of Internet of Things (IoT)	Internet of Things (IT)

Source: Prepared by the authors (2021).

3 | METHODOLOGY

Literature reviews occur in many introductions and debates of research reports, and specialist standpoint. All these types of literature review may be affected by selection bias since the authors are inclined to enclose only outstanding studies in a particular area, and only those that are most consistent with their opinion or the results of their research. On top of that, positive studies (with statistically significant findings either of benefit or harm) are more likely to be published and published in high impact journals (Easterbrook, Gopalan & Matthews, 1991). Systematic reviews aspire to determine all research tackling a particular question to provide a well-balanced and unbiased summary of the literature. Studies such as

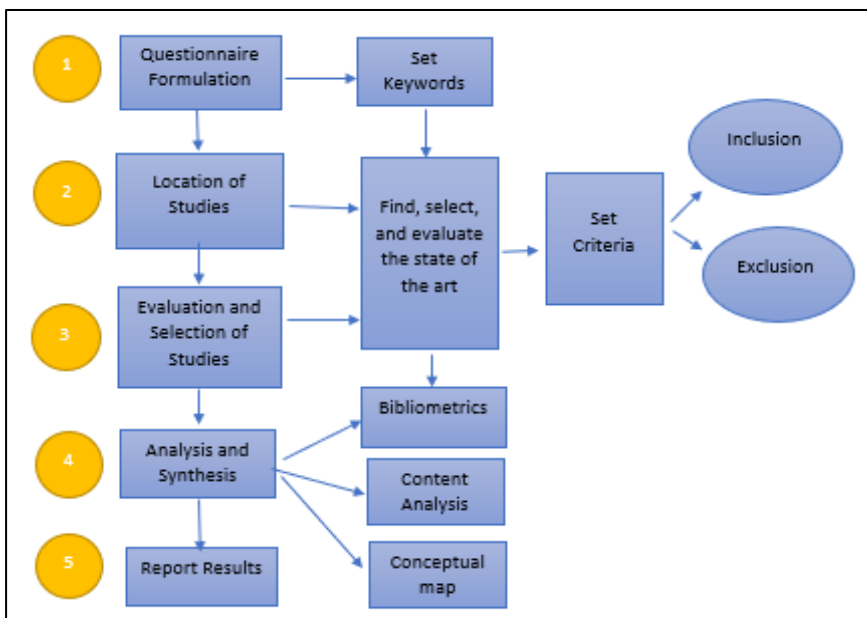
Freitas Junior, Maçada, & Brinkhues, (2017) Riasanow, Setzke, Böhm, & Krcmar (2019) also utilized Systematic reviews on their studies on digital transformation.

According to Cochrane (2006), the preparation and maintenance of a systematic literature review (RSL) involve seven steps: (i) formulate the problem, (ii) locate and select the studies, (iii) assess the quality of the studies, (iv) collect data, (v) analyze and present the results, (vi) interpret the results, and (vii) improve and update the reviews. However, according to research in management (Denyer et Tranfield, 2009; De Medeiros et al., 2014; Garza-Reyes, 2015), RSL consists of five consecutive phases: (1) question formulation, (2) location of studies, (3) evaluation and selection of studies, (4) analysis and synthesis, and (5) reporting and using the results.

For Briner et Denyer (2012), the review will only be classified as RSL if it adheres to the following principles: Conduct a systematic system or method, present a transparent and explicit method; replicable and updateable; summarize and synthesize the evidence relating to the review question. An outstanding systematic review is grounded on a well-drafted and resolvable research question. It will steer the review by determining which studies will be integrated, the search technique to recognize the primary studies, and the data to extract from each study (Counsell, 1997). To select the papers on Digital Transformation (DT) to be evaluated, we retrieved all articles from the *Scopus* and *Web of Science* (WoS) databases. We used "Digital transformation" OR "Digital Transfor*."

Although several studies focus on only one keyword and analyze only one or several sections in WoS (Blanco-Mesa, Merigó, & Gil-Lafuente, 2017), we chose to use two keywords and all sections in WoS. This praxis provided more data than using the keyword "Digital transformation." The data collection was conducted in January 2021. The total sample of 553 works was reduced by considering only the articles (Cancino, Merigó, Coronado, Dessouky, & Dessouky, 2017) from the two databases, resulting in a final sample of 440 papers. After removing the duplicate articles between the two databases, the second clipping was performed, and journals that contained three articles were selected, resulting in 424 articles. The third and last cut was based on filtering articles that addressed the following topics: success factors, barriers, pitfalls, and difficulties in implementing digital transformation. The final total of 149 articles were analyzed.

Figure 1. Systematic Literature Review Model



Source: Adapted from Garza-Reyes (2015)

4 | DIGITAL TRANSFORMATION RESEARCH GAPS

We analyzed the final literature sample's discussion part (limitations and future research opportunities) to synthesize valuable future research directions. Table 2 presents some digital transformation research gaps.

Table 2
Research Topic Gap Articles

AUTHOR	THEME	GAP	RESEARCH QUESTION
Arribas, and Alfaro (2018)	<i>Digital transformation, 3D digital technology</i>	How 3D technology can help fashion from concept to consumer.	How can 3D digital technology add value to the fashion industry?
Abbu and Gopalakrishna (2019)	<i>Market orientation, digital transformation</i>	Explore various levels of implementation and internalization of market orientation to satisfy stakeholder demands.	How is digital transformation affecting other industries (Hanelt et al., 2015) ?
Akdeniz, Zhang and Cavusgil (2019)	<i>Innovative Pedagogical Approaches, International Business</i>	Importance of emerging markets in making education relevant.	Can digital technologies help overcome the challenges of experiential learning and provide low-cost cultural training for Business Intelligence students?
Alibekova, Medeni, Panzabekova and Mussayeva, (2020)	<i>Information and Communication Technologies (ICT)</i>	Studies on barriers and enablers of digital transformation.	What are the challenges of Kazakhstan's educational system for training IT professionals?
Alrawdiah, and Cetin (2020)	<i>Capacity, Digital Entrepreneurship , Digital Technology, and Digital Transformation</i>	The benefits and barriers of digitalization.	How is digital transformation reflected in hotel Revenue Management practices?
Bertani, Ponta, Raberto, Teglio, and Cincotti (2020)	<i>Digital transformation Technological unemployment</i>	The study of government policies, regarding social welfare and education, that can facilitate and promote the transition to the future digital world.	What is the concept of intangible digital technology and its effects at both the micro and macro level?
Li, Wu, Cao, and Wang (2021)	<i>Information processing capability</i>	Impact of organizational attention to digital transformation on developing information processing capability for digital technology.	How can digital technologies be deployed to develop information processing capability?
Ceipek, Hautz, De Massis, Matzler, and Ardito (2021)	<i>Family Management and technological diersification</i>	The role of digitalization in innovation and new product development.	What are the mechanisms by which digitization influences the search and recombination of knowledge for innovation outcomes?
Lanzolla, Pesce and Tucci (2021)	<i>The impact of digital technology adoption for innovation management</i>	The role of digitalization in innovation and new product development.	How can key resources influence an organization for local research, or how are capabilities related to knowledge recombination?

Source: Prepared by the authors (2021).

5 | DIGITAL TRANSFORMATION RESEARCH GAP ANALYSIS

Fashion Industry. Research on digital transformation has focused on describing the transformation of specific industries whose products can be entirely digitized. For example, the fashion industry is missing the digital transformation study in physical products industries (Hanelt et al., 2015). This industry is on its way to radically changing marketing and customer relationships (front-end of the business). The back-end operations are achieving more efficiency across the entire value chain (Mullon, 2015). Specifically, 3D digital technology in fashion is seen as a transformative and disruptive technology compared to the way products are currently designed and developed (Court, 2015). Still, as far as its use is concerned, the fashion industry is in an investigative phase (Choi, 2015). Many technological advances are still needed (Papahristou & Bilalis, 2016) until it is more widely adopted. It is, therefore, an emerging area of research where there is still a lack of academic information and empirical research (Parker, 2016; Vanderploeg et al., 2017).

Market orientation, digital transformation. In nearly a century's literature, market orientation has been studied primarily as a behavioral or cultural construct, and researchers have addressed them separately (Hult, Ketchen, & Slater, 2005; Silva Junior, Santos, & Souza, 2021). Academic research has asserted that market orientation is an effective strategy for surviving in a competitive environment because it provides firms with a sustainable competitive advantage and focuses on customer orientation, competitor orientation

Innovative Pedagogical Approaches. Active learning approaches include "anything students do in a classroom that is not merely passively listening to an instructor's lecture" (Faust & Paulson, 1998, p. 4). Active learning approaches contrast with traditional teaching methods, where students learn course content through classroom lectures and then assimilate learning through assignments and seminars (Brame 2013). The last 20 years have reacted to an increasing interest from the International Business faculty in innovative teaching methods, broadly termed active learning approaches (Aggarwal and Goodell 2014). Active learning approaches are particularly important for international business education. Teaching objectives go above substantial knowledge and perceptions and involve transforming mindsets (Aggarwal & Wu 2019).

The main barriers to digitalization on a global scale are de-globalization and protectionism. They reduce global GDP, state inefficiency in developing an enabling environment, lack of innovation, and uneven technological development due to differential human capital (WEF, 2017). For the digital transformation of the economy, recognition of the need for digitization of socioeconomic systems at the state level and allocation of resources (Popkova et al., 2018) are essential prerequisites for innovation development, in particular, consistent development of innovative high-tech industries, development of information and communication technology infrastructure (Nurlanova et al., 2020), dynamic business development, talent, and an enabling environment (Chulanova et al., 2019).

Digital Technology and Revenue Management. The high cost of Revenue

Management (RM) software rises as a critical barrier to digital transformation while recognizing the benefits in preserving time, corroborating the decision-making process, and generating more revenue. The results also reveal that automation of several manual fact-findings in RM is far from possible. For this reason, digital transformation is improbable to threaten the future of the Revenue Management (RM) profession. Some benefits of digital transformation are in saving time, supporting the decision-making process, and generating more revenue. The high cost of RM software emerges as a critical barrier to digital transformation. The results also reveal that automation of several heuristic manuals in RM is far from possible. Therefore digital transformation is unlikely to threaten the future of the RM profession.

Technological Unemployment. According to Brynjolfsson and McAfee (2014), we are facing "The Second Machine Age" revolutionizing our world. In fact, according to the "Compensation Theory," in the long run, compensation mechanisms counterbalance the unemployment generated by technological progress, (Meschi et al., 2014). In this line, technological unemployment is only temporary: the economy undergoes structural change rather than the so-called "end of work" Vermeulen, Kesselhut, Pyka, and Saviotti (2018). According to Acemoglu and Restrepo (2017, 2018a, 2018b, 2018c, 2018d), Artificial Intelligence (AI) and robotics, like automation, replace humans in jobs they once performed, creating a "displacement effect" and this destruction of jobs could only be effectively offset by the creation of new labor-intensive tasks.

Information processing capability. Information processing capability (IPC) is gathering, interpreting, and synthesizing information in organizational decision-making (Tushman & Nadler, 1978). Digital transformation is at the heart of this process. It can increase firms' ability to collect, disseminate, store, analyze, and display information, strengthening firms' ability to process such information (Roberts and Grover, 2012). An organization's market agility depends heavily on its ability to access information and then act on it due to the problems of information overload in today's significant data era (Srinivasan & Swink, 2018; Furr, Ozcan, & Eisenhardt, 2022).

Family Management and Technological Diversification. By reason of the unique particularities of their managers, family management companies do not accept the risks related to the exploratory innovations of the Internet of Things (IoT). The benefit of technological risk diversification is less than the cost of abandoning family-centric goals. The involvement of family managers restricts the development of exploratory IoT innovation. The top management team in companies that have the intention to be at the leading position of digital transformation should be precisely designed, preventing a high allotment of family members (Ceipek, Hautz, De Massis, Matzler, & Ardito 2021).

The impact of digital technology adoption on innovation management is another relevant factor to watch. The debate about the impact of digital technology adoption on innovation management is still undetermined. Digital technology adoption goes far beyond the technical adoption processes. It involves organizing new socio-technical structures (Almirall & Casadesus-Masanell 2010) and bringing in new organizational skills (Troilo, De Luca, & Guenzi, 2017). Moreover, establishing new organizational structures (Viscusi & Tucci, 2018). Appio, Frattini, Messeni Petruzzelli, & Neirotti (2018, p. 2) point out that "how digital technologies underpin and change the foundations of organizational learning, dynamic capabilities, combinative capabilities, absorptive capacity, or forge

open innovation and technological synergies, continues to be little explored.”

Advances in digital technologies and their rapid adoption during the past few decades have promoted fundamental changes in many aspects of social and economic life (Schwab, 2017).

6 | FINAL CONSIDERATIONS

Organizations, in general, will need to keep up with the speedy changes and the latest normal. The success of the future will be shaped by two inevitable and powerful forces - the increasing adoption of digital transformation and the mutual partnership between humans and machines. Finding a balance will be an enormous opportunity and, simultaneously, a challenge for organizations. This review aims to help scholars understand the phenomenon of DT, encourage them to think differently about it and enable the development of interesting empirical studies in subsequent research.

The benefits of digital transformation, such as speed, providing accurate data, a better understanding of the market, assisting in the decision-making process, and eventually maximizing revenue, are recognized regardless of the level of sophistication. Proactive organizations can develop a solid plan to address digital technology changes because they encourage providers and users to work together to leverage existing resources or explore new investments to identify the desired solution.

While we are convinced of the value added by this paper to academia in existing research on this topic, we are also aware of existing limitations that may require new research contributions. These limitations may be significantly associated with methodology, as we base the results on only a few gaps. Thus any generalization of the results should be carefully considered. Due to the topic's novelty, empirical research and, more specifically, case studies can help develop a theoretical framework by identifying different factors, benefits, and outcomes related to digital technologies.

We hope that this research will provide a valuable foundation for future empirical studies that employ information processing as a lens to examine the broader conceptualization of digital technology. Practitioners can use this research as a starting point to develop a model for various digital technologies that can increase a firm's market agility and thus its prosperity.

7 | REFERENCES

- Acemoglu, D., & Restrepo, P. (2017). Secular stagnation? The effect of aging on economic growth in the age of automation. *American Economic Review*, 107(5), 174-79.
- Aggarwal, R., & Goodell, J. W. (2014). Globalizing international business education via experiential learning. *Journal of Teaching in International Business*, 25(2), 79-82.
- Aggarwal, R., & Wu, Y. (2019). Challenges in implementing experiential learning in IB education. *Journal of Teaching in International Business*, 30(1), 1-5.
- Agramunt, L. F., Berbel-Pineda, J. M., Capobianco-Uriarte, M. M., & Casado-Belmonte, M. P. (2020). Review on the relationship of absorptive capacity with interorganizational networks and the internationalization process. *Complexity*, 2020.

- Almirall, E., & Casadesus-Masanell, R. (2010). Open versus closed innovation: A model of discovery and divergence. *Academy of Management Review*, 35(1), 27-47.
- Appio, F. P., Frattini, F., Petruzzelli, A. M., & Neirotti, P. (2018). Digital Transformation and Innovation Management: Opening the Black Box. *Journal of Product Innovation Management*.
- Apriliyanti, I. D., & Alon, I. (2017). Bibliometric analysis of absorptive capacity. *International Business Review*, vol. 26, issue 5, pp. 896-907.
- Atkinson, R. (2005). prospering in an era. *Economic Development Journal*, 33.
- Bharadwaj, A., El Sawy, O., Pavlou, P., & Venkatraman, N. 2013. Digital business strategy: toward a next generation of insights. *MIS Quarterly*, Vol. 37 No. 2: 471-482.
- Basole, R. C. (2016). Accelerating digital transformation: Visual insights from the API ecosystem. *IT Professional*, 18(6), 20-25.
- Benavides, L. M. C., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital Transformation in Higher Education Institutions: A Systematic Literature Review. *Sensors*, 20(11), 3291. doi:10.3390/s20113291
- Brynjolfsson, E., McAfee, A., & Spence, M. (2014). New world order: labor, capital, and ideas in the power law economy. *Foreign Affairs*, 93(4), 44-53.
- Blanco-Mesa, F., Merigó, J. M., & Gil-Lafuente, A. M. (2017). Fuzzy decision making: A bibliometric-based review. *Journal of Intelligent & Fuzzy Systems*, 32(3), 2033-2050.
- Boudreau, M.-C. and Robey, D. (2005), "Enacting integrated information technology: a human agency perspective", *Organization Science*, Vol. 16 No. 1, pp. 3-18.
- Calero-Medina, C., & Noyons, Ed. C.M. (2008). Combining mapping and citation network analysis for a better understanding of the scientific development: The case of the absorptive capacity field, *Journal of Informetrics*, 2(4), pp. 272-279.
- Brame, C., (2013). Flipping the classroom. Retrieved [today's date] from <http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/>
- Cancino, C., Merigó, J. M., Coronado, F., Dessouky, Y., & Dessouky, M. (2017). Forty years of Computers & Industrial Engineering: A bibliometric analysis. *Computers & Industrial Engineering*, 113, 614-629.
- Ceipek, R., Hautz, J., De Massis, A., Matzler, K., & Ardito, L. (2021). Digital transformation through exploratory and exploitative internet of things innovations: the impact of family management and technological diversification. *Journal of Product Innovation Management*, 38(1), 142-165.
- Chahal, M. (2016). Four trends that will shape media in 2016. [online] *Marketing Week*. Retrieved 8/03/2016 from <http://www.marketingweek.com/2016/01/08/four-trends-that-will-shape-media-in2016>
- Ciotti, R., & Favretto, J. (2017). Capacidade absorptiva em instituições de ensino superior: uma sistematização da literatura. *Contextus - Revista Contemporânea De Economia E Gestão*, 15(3), 203-229. <https://doi.org/10.19094/contextus.v15i3.898>
- Counsell, C. Formulating questions and locating primary studies for inclusion in systematic reviews. In: *Annals of Internal Medicine*, 127, 380-387. 1997.
- Choi, Y. S., Lee, S. H., Son, H. S., Lee, B. J., Seok, J. Y., & Hwang, D. R. (2015). A study on the effect of consultant capacity in the consulting services of digital industry on influence of customer satisfaction and re-contract intention. *Journal of Digital Convergence*, 13(4), 163-174.
- Cochrane Methodology Register. In The Cochrane Library, Issue 1, 2003. Oxford: Update Software; Updated quarterly.
- Counsell, C. Formulating questions and locating primary studies for inclusion in systematic reviews. *Annals of Internal Medicine*, 127, 380-387. 1997.
- Court, F. (2015), "Embracing digital is a matter of survival", *The Business of Fashion*, 9 April, available at: www.businessoffashion.com/community/voices/discussions/is-fashion-missing-the-technology-revolution/op-ed-embracing-digital-is-a-matter-of-survival (accessed 10 July 2022).
- Chulanova, Z. (2019). Professional standards as a factor of adaptation of human resources to the industry 4.0: approaches to development and implementation. *Journal of Human*

- Resource Management, 22(1), 12-20.
- De Medeiros, J.F., Ribeiro, J.L.D., & Cortimiglia, M.N., Success factors for environmentally sustainable product innovation: A systematic literature review. *Journal of Cleaner Prod.* 65, 76-86. 2014. doi: 10.1016/j.jclepro.2013.08.035.
- Dehning, B., & Stratopoulos, T. (2003). Determinants of a sustainable competitive advantage due to an IT-enabled strategy. *The Journal of Strategic Information Systems*, 12(1), 7-28. doi:10.1016/s0963-8687(02)00035-5
- Denyer, D., & Tranfield, D. Producing a systematic review. In: D. A. Buchanan & A. Bryman (Eds.), *The SAGE handbook of organizational research methods* (pp. 671-689). London: *Sage Publications Ltd.* 2009.
- De Medeiros, J.F., Ribeiro, J.L.D., Cortimiglia, M.N., Success factors for environmentally sustainable product innovation: A systematic literature review. *Journal of Cleaner Prod.* 65, 76-86. 2014. doi: 10.1016/j.jclepro.2013.08.035.
- Dery, K., Sebastian, I. M., & van der Meulen, N. (2017). The Digital Workplace is Key to Digital Innovation. *MIS Quarterly Executive*, 16(2).
- Dunning, J.H., Lundan, S.M., 2009. The internationalization of corporate R&D: a review of the evidence and some policy implications for home countries. *Rev. Policy Res.* 26 (1-2), 13-33.
- Easterbrook, P. J., Gopalan, R., Berlin, J. A., & Matthews, D. R. (1991). Publication bias in clinical research. *The Lancet*, 337(8746), 867-872.
- Faust, J. L., & Paulson, D. R. (1998). Active learning in the college classroom. *Journal on excellence in college teaching*, 9(2), 3-24.
- Junior, J.C., Maçada, A.C., & Brinkhues, R.A. (2017). Digital Capabilities as Key to Digital Business Performance. *AMCIS*.
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing digital technology: A new strategic imperative. *MIT Sloan Management Review*, 55(2), 1.
- Furr, N., Ozcan, P., & Eisenhardt, K. (2022). What is digital transformation? Core tensions facing established companies on the global stage. *Iberoamerican Journal of Competitive Intelligence*, 12(1), e0410. <https://doi.org/10.24883/IberoamericanIC.v12i.2022alumniin>
- Gao, S. Yeoh, W., & Wong, S. F. (2017). A literature analysis of the use of Absorptive Capacity construct in IS research. *Int. J. Inf. Manag.* 37(2): 36-42.
- A literature analysis of the use of Absorptive Capacity construct in IS research. *Int. J. Inf. Manag.* 37(2): 36-42 (2017)
- Garrigos-Simon, F. J., Narangajavana-Kaosiri, Y., & Lengua-Lengua, I. (2018). Tourism and sustainability: A bibliometric and visualization analysis. *Sustainability*, 10(6), 1976.
- Garza-Reyes, J.A. (2006). Green lean, and the need for Six Sigma. *Int. J. Lean Six Sigma* 6, 226-248, CMR 2006. *Cochrane Methodology Register*. In: *The Cochrane Library, Issue 1*, 2003. Oxford: Update Software; Updated quarterly.
- Gaviria-Marin, M., Merigó, J. M., & Baier-Fuentes, H. (2019). Knowledge management: A global examination based on bibliometric analysis. *Technological Forecasting and Social Change*, Volume 140, pp. 194-220.
- González, P. M., & Muiña, F. E. G. (2014). Absorptive capacity and smart companies. *Intangible Capital*, 10(5): 922-947. <http://dx.doi.org/10.3926/ic.508>
- Hallinger, P., & Kovačević, J. (2019). A bibliometric review of research on educational administration: Science mapping the literature, 1960 to 2018. *Review of Educational Research*, 89(3), pp. 335-369. doi:10.3102/0034654319830380
- Hanelt, A., Piccinini, E., Gregory, R. W., Hildebrandt, B., & Kolbe, L. M. (2015). Digital transformation of primarily physical industries-exploring the impact of digital trends on business models of automobile manufacturers.
- Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly*, 35(1), 9e30.
- Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital

- transformation strategy. *MIS Quarterly Executive*, 15(2), 123-139.
- Hult, G. T. M., Ketchen Jr, D. J., & Slater, S. F. (2005). Market orientation and performance: an integration of disparate approaches. *Strategic Management Journal*, 26(12), 1173-1181.
- Kane, G. C., Palmer, D., Nguyen-Phillips, A., Kiron, D., & Buckley, N. (2017). Achieving digital maturity. *MIT Sloan Management Review*, 59(1).
- Kim, K., Park, J.-H. and Prescott, J.E. (2003), "The global integration of business functions: a study of multinational businesses in integrated global industries", *Journal of International Business Studies*, Vol. 34 No. 4, pp. 327-344.
- Kitchenham, B., Charters, S., 2007. Guidelines for performing systematic literature reviews in software engineering. *Engineering 2*, 1051
- Kohli, R., & Johnson, S. (2011). Digital Transformation in Latecomer Industries: CIO and CEO Leadership Lessons from Encana Oil & Gas (USA) Inc. *MIS Quarterly Executive*, 10(4).
- Legner, C., Eymann, T., Hess, T., Matt, C., Böhm, T., Drews, P., et al. (2017). Digitalization: opportunity and challenge for the business and information systems engineering community. *Business & Information Systems Engineering*, 59(4), 301-308
- Lenart, R. (2014). Operationalization of Absorptive Capacity. *International Journal of Contemporary Management*, 13(3), 86-98.
- Levy, Y., Ellis, T.J., 2006. A system approach to conduct an effective literature review in support of information systems research. *Informing Science 9*, 181-211.
- Lewin, A.Y., Massini, S., Peeters, C., 2009. Why are companies offshoring innovation? The emerging global race for talent. *J. Int. Bus. Stud.* 40 (6), 901-925
- Lumpkin, G.T., & Dess, G.G. 2004. E-business strategies and internet business models: How the internet adds value. *Organizational Dynamics*, 33(2): 161-173.
- Manyika, J., Lund, S., Bughin, J., Woetzel, J.R., Stamenov, K., & Dhingra, D. 2016. Digital globalization: The new era of global flows. San Francisco: *McKinsey Global Institute*.
- Manning, S., Massini, S., Lewin, A.Y., 2008. A dynamic perspective on next-generation offshoring: the global sourcing of science and engineering talent. *Acad. Manag. Perspect.* 22 (3), 35-54.
- Mahraz, I., Benabbou, L., & Berrado, A. (2019). A Systematic literature review of Digital Transformation. In *Proceedings of the international conference on industrial engineering and operations management*. Toronto, Canada. Retrieved from <http://ieomsociety.org/toronto2019/papers/236.pdf>.
- Marabelli, M., & Newell, S. (2014). Knowing, Power and Materiality: A Critical Review and Reconceptualization of Absorptive Capacity. *International Journal Management Reviews*, 16 (4), pp. 479-499. <https://doi.org/10.1111/ijmr.12031>
- Mariano, S., & Walter, C. (2015). The construct of absorptive capacity in knowledge management and intellectual capital research: content and text analyses. *J. Knowl. Manag.*, 19, 372-400.
- Maksimenco, I., Vashko, T., & Zdrestova-Zakharenkova, S. (2021). Digital transformation and its challenges to the strategic management system. In *SHS Web of Conferences* (Vol. 106, p. 01035). *EDP Sciences*.
- Matt, C., Hess, T., & Benlian, A. 2015. Digital transformation strategies. *Business & Information Systems Engineering*, 57(5): 339-343.
- Meneses, E. L., Cano, E. V., & Gravano, P. R. (2015). Analysis and implications of the impact of MOOC movement in the scientific community: JCR and Scopus (2010-13), *Media Education Research Journal*, 23(1).
- Merigó, J. M., & Yang, J. B. (2017). Accounting research: A bibliometric analysis. *Australian Accounting Review*, 27(1), 71-100.
- Merediz-Solà, I. & Bariviera, Aurelio. F. A Bibliometric Analysis of Bitcoin Scientific Production (June 12, 2019). *Research in International Business and Finance*, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=3403181>
- Meschi, E., Taymaz, E., & Vivarelli, M. (2011). Trade, technology, and skills: Evidence from Turkish microdata. *Labour Economics*, 18, S60-S70.
- Morakanyane, R., Grace, A. A., & O'Reilly, P. (2017). Conceptualizing Digital Transformation

- in Business Organizations: A Systematic Review of Literature. *Bled eConference*, 21.
- Mullon, E. (2015). Technology can transform the operational backbone of fashion. *The business of Fashion*.
- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: reinventing innovation management research in a digital world. *MIS Quarterly*, 41(1), 223-238.
- Nurlanova, N. K., Omarov, A. K., & Satpayeva, Z. T. (2020). Methodological approaches to estimation of economic growth and sustainable development: Kazakhstan's experience. *The Journal of Asian Finance, Economics and Business*, 7(4), 317-324.
- Ndiege, J., Herselman, M., & Flowerday, S. (2012). Absorptive Capacity: Relevancy for Large and Small Enterprises, SA. *Journal of Information Management*, 14(1), Art 520, 9 pages.
- Oesterle, S., Buchwald, A., & Urbach, N. (2020). Investigating the co-creation of IT consulting service value: empirical findings of a matched pair analysis. *Electronic Markets*, 1-27.
- Papahristou, E., & Bilalis, N. (2016, April). A new sustainable product development model in apparel based on 3D technologies for virtual proper fit. In: *International conference on sustainable design and manufacturing* (pp. 85-95). Springer, Cham.
- Parker, C. J., & Wang, H. (2016). Examining hedonic and utilitarian motivations for m-commerce fashion retail app engagement. *Journal of Fashion Marketing and Management: An International Journal*.
- Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review*, 101717. doi: 10.1016/j.ibusrev.2020.101717.
- Popkova, E. G., & Sergi, B. S. (2018). Will industry 4.0 and other innovations impact Russia's development? In: *Exploring the future of Russia's economy and markets*. Emerald Publishing Limited.
- Pousttchi, K., Gleiss, A., Buzzi, B., & Kohlhagen, M. (2019). Technology impact types for digital transformation. In 2019 IEEE 21st *Conference on Business Informatics (CBI)* (Vol. 1, pp. 487-494). IEEE.
- Riasanow, T., Setzke, D. S., Böhm, M., & Krcmar, H. (2019). Clarifying the notion of digital transformation: A transdisciplinary review of literature. *Journal of Competences, Strategy & Management*, 10(1), 5-31
- Roberts, N. Galluch, P. S., Dinger, M. & Grover, V. (2012). Absorptive Capacity and Information Systems research: Review, Synthesis, and Directions for Future Research. *MIS Quarterly*, Vol. 36 No. 2—Appendices/ June.
- Ross, J.W., Sebastian, I., Beath, C., Mocker, M., Moloney, K., & Fonstad, N. 2016. *Designing and executing digital strategies*.
- Sakhnini, J., Karimipour, H., Dehghantaha, A., Parizi, R. M., & Srivastava, G. (2021). Security aspects of Internet of Things aided smart grids: A bibliometric survey. *Internet of Things*, Volume 14, 100111. <https://doi.org/10.1016/j.iot.2019.100111>
- Sakhdari, K. (2016). Corporate Entrepreneurship: A Review and Future Research Agenda. *Technology Innovation Management Review August*, 2016 6 (8), pp. 1-18.
- Sebastian, I. M., Ross, J. W., Beath, C., Mocker, M., Moloney, K. G., & Fonstad, N. O. (2020). How big old companies navigate digital transformation. In *Strategic Information Management* (pp. 133-150). Routledge.
- Schmitz, H., Strambach, S., 2009. The organisational decomposition of innovation and global distribution of innovative activities: insights and research agenda. *Int. J. Technol. Learn. Innov. Dev.* 2 (4), 231-249
- Schwab K. 2017. The Fourth Industrial Revolution. World Economic Forum. *Edition Dunod*.
- Silva Junior, D., Santos, R., & Souza, J. (2021). The relationship between Ikujiro Nonaka's knowledge spiral and the six industry principles 4.0 in the context of digital transformation. *Revista Gestão & Tecnologia*, 21(4), 135-161. doi:<https://doi.org/10.20397/2177-6652/2021.v21i4.2145>

- Soares, T. D. L. V. A. De M. S., Barboza, T. S., & PAULA, F. O. de. (2016). Absorptive Capacity, Alliance Portfolios and Innovation Performance: An Analytical Model Based on Bibliographic Research. *Journal of Technology Management & Innovation*, v. 11, n. 3, p. 21-32.
- Srinivasan, R., & Swink, M. (2018). An investigation of visibility and flexibility as complements to supply chain analytics: An organizational information processing theory perspective. *Production and Operations Management*, 27(10), 1849-1867.
- Tilson, D., Lyytinen, K., & Sørensen, C. 2010. Research commentary-Digital infrastructures: The missing IS research agenda. *Information Systems Research*, 21(4): 748-759
- Tran, B.X., McIntyre, R.S., Latkin, C.A., Phan, H.T., Vu, G.T., Nguyen, H.L.T., Gwee, K.K., Ho, C. S. H., & Ho, R. C. M. (2019). The Current Research Landscape on the Artificial Intelligence Application in the Management of Depressive Disorders: A Bibliometric Analysis. *International Journal of Environmental Research and Public Health*, 16(12): 2150. <https://doi.org/10.3390/ijerph16122150>
- Troilo, G., De Luca, L. M., & Guenzi, P. (2017). Linking data-rich environments with service innovation in incumbent firms: A conceptual framework and research propositions. *Journal of Product Innovation Management*, 34(5), 617-639.
- Tucci, C. L., Afuah, A., & Viscusi, G. (Eds.). (2018). *Creating and capturing value through crowdsourcing*. Oxford University Press.
- Tushman, M. L., & Nadler, D. A. (1978). Information processing as an integrating concept in organizational design. *Academy of Management Review*, 3(3), 613-624.
- Vanderploeg, A., Lee, S. E., & Mamp, M. (2017). The application of 3D printing technology in the fashion industry. *International Journal of Fashion Design, Technology and Education*, 10(2), 170-179.
- Vedder, R., & Guynes, C. S. (2016). The challenge of botsourcing. *Review of Business Information Systems (RBIS)*, 20(1).
- Vilutiene, T., Kalibatiene, D., Hosseini, M. R., Pellicer, E., & Zavadskas, E. K. (2019). Building information modeling (bim) for structural engineering: a bibliometric analysis of the literature. *Advances in civil engineering*, 2019.
- Volberda, H.W., Foss, N.J. & Lyles, M.A. (2010) Perspective—Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organization Science*, 21, 931-951.
<https://doi.org/10.1287/orsc.1090.0503>
- Waltman, L., & Noyons, E. (2018). Bibliometrics for research management and research evaluation: A brief introduction. *Universiteit Leiden*.
- Westerman, G., Calmèjane, C., Bonnet, D., Ferraris, P., & McAfee, A. 2011. *Digital Transformation: A roadmap for billion-dollar organizations*. MIT Center for Digital Business and Capgemini Consulting, 1-68.
- Westerman, G., Bonnet, D., & McAfee, A. (2012). The advantages of digital maturity. *MIT Sloan management review*, 20.
- Yetton, P. W., Johnston, K. D., & Craig, J. F. (1994). Computer-aided architects: a case study of IT and strategic change. *MIT Sloan Management Review*, 35(4), 57.
- Ylijoki, O., & Porras, J. (2019). A recipe for big data value creation. *Business Process Management Journal*.

ENDNOTES

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