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Corporate Digital Transformation: A Comprehensive Definition and Conceptual Framework for Enhancing Business Performance

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Abstract

This study aims to analyze 45 definitions of digital transformation (DT) to identify key drivers and propose a conceptual framework to outline their impact on business performance. Through content analysis, 24 key drivers were identified, focusing on the frequency of occurrence across the definitions. The analysis highlights drivers such as IT technologies & innovation, business model, business performance, customer experience, and operational processes. The results show a significant emphasis placed on various drivers of DT, reflecting its multidimensional nature. Key drivers include technological innovation, organizational adaptation, customer-centric strategies, and change management practices. By conceptualizing the relationships between key drivers and performance outcomes, the

proposed conceptual framework provides theoretical insights into the mechanisms underlying digital transformation and its impact on business performance. The proposed framework integrates technological, strategic, organizational, and cultural dimensions. The analysis underscores the complexity and multidimensional nature of DT as a strategic phenomenon and offers drivers on which the organizations should focus to face the challenges of digital disruption. This paper's original theoretical contribution lies in synthesizing various definitions of digital transformation from the past two decades to propose a comprehensive definition of Corporate Digital Transformation.

Keywords: Corporate Digital Transformation, Digital Transformation Key Drivers, Digital Transformation Defini-Tion, Business Performance, Content Analysis.

Introduction

In today's rapidly evolving business landscape, the concept of digital transformation (DT) has garnered significant attention as organizations strive to adapt to the challenges and opportunities presented by digital technologies (Cosa, 2024; Favoretto et al., 2022; Gong & Ribiere, 2021a). This growing focus reflects the critical role that DT plays in organizational success. The evolution of DT definitions reflects the dynamic nature of this phenomenon, which transcends simple technological adoption to cover broader strategic and organizational imperatives (Angelopoulos et al., 2023; Gong and Ribiere, 2021; Hanelt et al., 2021; Kraus et al., 2022; Pihir et al., 2018).

To contextualize DT, it is essential to differentiate it from related concepts such as digitization and digitalization. The terms digitization, digitalization, and digital transformation are often used interchangeably, but they represent distinct concepts in the digital evolution of businesses (Bockshecker et al., 2018; Mutlu et al., 2022; Verhoef et al., 2021). Digitization refers to the conversion of analog information into digital format (Gobble, 2018). Digitalization is a broader process that leverages digital technologies to transform business processes and models (Bockshecker et al., 2018). According to Verhoef et al., while digitization focuses on data conversion, digitalization emphasizes the integration of digital technologies into organizational workflows (Verhoef et al., 2021). Digital transformation is the most comprehensive concept that encompasses the business, organizational, and cultural changes driven by digital technologies. According to Verhoef et al., the three stages to achieve DT include digitization, digitalization, and DT (Verhoef et al., 2021).

In this study, we explore the evolution of diverse definitions of DT, aiming to elucidate the key drivers that support its success. As DT has become a critical strategic lever for enhancing business performance, the multitude of definitions makes it challenging to comprehend the key drivers and underlying mechanisms (Gong & Ribiere, 2021b; Pani & Pramanik, 2020; Riasanow et al., 2019; Tang, 2021). Given this diversity of DT definitions,

how can we identify the core drivers of digital transformation and establish a conceptual framework that clarifies how these drivers affect organizational performance?

This study aims to address this gap by analyzing definitions of DT to propose a comprehensive definition and a conceptual framework that highlights the relationships between the drivers of digital transformation and business performance outcomes. The significance of this research lies in its potential to provide valuable insights for organizations navigating the complexities of digital transformation.

By elucidating the critical success factors of DT, this study seeks to offer practical guidance for organizations embarking on their DT journey. Moreover, by presenting a conceptual model of DT success factors, we aim to contribute to the theoretical understanding of DT and its implications for organizational strategy.

To achieve these objectives, we first conduct a comprehensive review of the literature surrounding the concept of DT, elucidating its theoretical foundations and key dimensions. Next, we introduce our methodology for identifying and analyzing definitions of DT, concluding with the identification of key drivers of DT. Then, we propose a holistic definition of DT and a conceptual model that defines the relationships between the key drivers, Corporate DT, and Business Performance. Finally, we discuss our findings, identify avenues for future research, and reflect on the broader significance of DT in shaping the future of business

Literature review

Researchers have attempted to define and conceptualize DT in the first stream of literature. For instance, Westerman et al. define DT as the use of technology to improve business performance and scope radically (Westerman et al., 2014a), while Fitzgerald et al. conceptualize DT as a major organizational change enabled by the use of digital technologies (Fitzgerald et al., 2014). Brown et al. argue that DT involves the creation of new business models that leverage digital technologies (Brown et al., 2014), while Piccinini et al. suggest that DT is characterized by the integration of digital technologies into all aspects of a firm's operations (Piccinini et al., 2015).

The second stream of literature focuses on the factors that drive and hinder DT in organizations. The factors that facilitate and propel the process of DT are known as drivers. Despite being limited, previous research has highlighted various attributes that drive DT in organizations, such as digital technologies, business models, strategies, digital capabilities and maturity, and others (Morakanyane et al., 2017; Westerman et al., 2014a). One of the key drivers of DT is the need to adapt to changes in the external environment, such as changing customer expectations, new technologies, and increasing performance (Chanias, 2017). In addition, several studies have highlighted the importance of leadership and culture in driving successful DT initiatives (Horlacher & Hess, 2016; Klein, 2020; Paavola et al., 2017; Ratten,

2022). However, DT initiatives also face several barriers, including resistance to change, lack of skills and resources, and difficulty in integrating new technologies with existing systems (Gong & Ribiere, 2021a; Vial, 2019).

During the first step of the research, we collected definitions of "digital transformation", using academic databases. Forty-five definitions were analyzed using the method of frequency analysis to define the most relevant components related to DT that we identified. The second step of the research is to present a conceptual framework and an integrated definition of DT based on the terms' occurrence analysis.

Methodology

The methodology we adopted to analyze the occurrence of concepts or terms connected to "digital transformation (DT)" and synthesize them to propose a definition of Corporate Digital Transformation (CDT), is rooted in a conceptual content analysis followed by synthesis (Oxman & Rotenstreich, 2005; Sabharwal et al., 2018).

Content analysis can be applied quantitatively by counting word frequencies or qualitatively through coding and theme identification (Kulatunga et al., 2007). The method involves breaking down text into categories based on theoretical themes (Metzger, 2019; Oxman and Rotenstreich, 2005).

In their research, Hsieh and Shannon explain that Content analysis can be used in three distinct approaches: conventional, directed, or summative. According to them "A summative approach to qualitative content analysis goes beyond mere word counts to include latent content analysis" (Hsieh and Shannon, 2005, p. 1283). Also, Oxman has employed content analysis to examine the emergence and evolution of new design concepts over time (Oxman & Rotenstreich, 2005). Thus, to study the conceptual evolution of "Digital Transformation", we first proceed to a summative content qualitative analysis to identify the recurring terms or concepts associated with the DT definition, and then we analyze the evolution of the DT concept over time. Table 1 outlines the steps taken in the research process, including the selection of sources, data collection, analysis techniques, and logic applied for synthesizing the concepts.

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Table 1. Paper's research design

Step	Step description	Research process
Step 1	Textual Data sample selection A concept is chosen for examination and its occurrence in the documents is tallied (Sabharwal et al., 2018). In the context of this study, the term "Digital Transformation" was examined.	The research sample consists of 45 definitions of digital transformation sourced from academic papers (Appendix 1) based on an integrative review that allows us to combine and analyze different definitions of DT (Whittemore & Knafl, 2005). The timeframe of 2004 to 2024 was chosen to capture the evolution of conceptualizations over two decades, encompassing significant advancements in technology and organizational practices.
Step 2	Content Analysis The research design is based on summative content qualitative analysis (Hsieh and Shannon, 2005). In the context of this study, the objective is to identify and synthesize the recurring concepts associated with "digital transformation" definitions across the 45 selected definitions.	The analysis employs a textual coding approach to identify recurring concepts across the collected definitions. Each definition was analyzed and key drivers were identified through textual analysis (Appendix 1). We identified 24 concepts as key drivers of DT. Textual coding involves systematically categorizing textual data of the 45 DT definitions into 24 concepts or drivers of DT.
Step 3	Occurrence Analysis Examination of the frequency and occurrence of key drivers or terms in the various definitions of a concept (Kulatunga et al., 2007)	Textual data was processed using manual coding and reported on an Excel sheet to ensure accuracy and consistency (Appendix 1). Each occurrence of a term (key driver) was recorded, and Key drivers were ranked according to their frequency.
Step 4	Synthesis • DT Conceptual evolution (Oxman and Rotenstreich, 2005) • CDT comprehensive definition	We Aggregated and synthesized the findings to describe the conceptual evolution of DT over time and to propose a comprehensive definition of CDT based on most occurrent identified key drivers.

Source: The authors

In summary, the methodology employed in this research integrates epistemological considerations with rigorous research design principles to analyze and synthesize drivers related to DT. By systematically reviewing a diverse range of literature and applying thematic coding techniques, the study identifies the most recurring drivers, leading to the proposal of a synthesized definition of digital transformation grounded in empirical evidence and theoretical insights.

Results

After analyzing the 45 DT definitions, we have identified 24 pivotal terms through the textual analysis. Table 2 shows all the 24 terms identified as DT key drivers.

Table 2. Identified DT Key driver

Key drivers	Occurrence	Key drivers	Occurrence
IT technologies & innovation	33	Strategic renewal	3
Business model	21	Value creation	3
Business performance	18	Core processes	3
Customer experience	17	Governance mechanisms	2
Operational process	16	Sustainability	2
Organizational structure adjustment	15	Disruption	2
Digital culture	9	Management practices	2
Change process	7	Strategic leverage of resources	2
Digital economy	5	Business & Society	1
Human Resources	5	Digitalisation	1
Stakeholders	5	Digitization	1
Competitive advantage	4	Traditional technologies	1

Source: the authors

Table 3 provides a breakdown of identified key drivers of digital transformation (DT) across the 24 definitions and presents the occurrence of DT drivers that were identified more than three times. The analysis based on the frequency of occurrence of these key drivers exposes the following:

- **IT Technologies & Innovation (33 occurrences):** The overwhelming emphasis on Information Technology (IT) technologies and innovation underscores their pivotal role in driving digital transformation initiatives. This high frequency reflects the centrality of technological advancements.

- **Business Model (21 occurrences):** The significant mention of business models highlights the recognition that digital transformation necessitates rethinking traditional business models to align with evolving market dynamics and technological disruptions. Organizations are compelled to explore new revenue streams, value propositions, and customer engagement strategies to remain competitive in the digital age.

- **Business Performance (18 occurrences):** The focus on business performance indicates a growing imperative for organizations to translate digital initiatives into tangible outcomes and measurable returns on investment. Metrics such as revenue growth, cost savings, market share, and customer satisfaction are pivotal in assessing the success and impact of digital transformation efforts.

- **Customer Experience (17 occurrences):** The emphasis on customer experience underscores the high importance placed on delivering whole and personalized experiences to meet the evolving expectations of digitally empowered customers. Enhancing customer satisfaction, loyalty, and promotion through digital channels is paramount for sustaining competitive advantage and driving business growth.

- **Operational Process (16 occurrences):** The recognition of operational processes as a key driver highlights the imperative for organizations to streamline and optimize internal workflows, systems, and procedures through digitalization. Automation, digitization, and process reengineering are essential strategies for improving efficiency, productivity, and agility in the digital era.

- **Organizational Structure Adjustment (15 occurrences):** The acknowledgment of organizational structure adjustment reflects the need for organizational agility and flexibility to support digital transformation initiatives effectively. This involves flattening hierarchies, fostering cross-functional collaboration, and empowering employees to adapt to changing roles and responsibilities in the digital workplace.

- **Digital Culture (9 occurrences):** The mention of digital culture underscores the significance of cultivating a culture of innovation, experimentation, and continuous learning within organizations. A supportive digital culture is essential for fostering creativity, agility, and risk-taking behavior, which are essential for driving digital transformation and embracing change.

- **Change Process (7 occurrences):** The recognition of the change process highlights the challenges and complexities associated with managing organizational change in the context of digital transformation. Effective change management strategies, communication plans, and stakeholder engagement initiatives are crucial for overcoming resistance, building buy-in, and ensuring the successful adoption of digital initiatives.

- **Digital Economy (5 occurrences):** The reference to the digital economy underscores the broader socio-economic implications of digital transformation, including its impact on industries, markets, and employment patterns. Organizations must navigate digital disruption, regulatory frameworks, and market dynamics to seize opportunities and mitigate risks in the digital economy.

Table 3. Occurrence analysis of the Identified DT Key drivers

	IT technologies & innovation	Business model	Business performance	Customer experience	Operational process	Organizational structure adjustment	Digital culture	Change process	Digital economy	Human Resources	Stakeholders	Core processes	Strategy renewal
Total occurrence	33	21	18	17	16	15	9	7	5	5	5	3	3
(Al-Ruithe et al., 2018)				1	1	1			1				
(Bekkhus, 2016a)	1		1										
(Bharadwaj et al., 2013)	1						1						
(Bondar et al.,								1	1				

2017)													
(Brown et al., 2014)	1			1		1	1						
(Cennamo et al., 2020)	1	1		1	1			1				1	1
(Chanias, 2017)	1		1										
(Feroz et al., 2021)	1				1	1							
(Fitzgerald et al., 2014)	1	1	1										
(Gaidi and Baïna, 2022)	1	1		1		1	1			1	1		1
(Gebayew et al., 2018)		1		1	1								
(Gong & Ribiere, 2021)	1	1	1				1				1		
(Gruman, 2016)	1												
(Hartl & Hess, 2017)		1		1		1						1	
(Henriette et al., 2015)	1	1											
(Hinings et al., 2018)	1				1	1	1						
(Horlacher & Hess, 2016)	1	1	1	1									
(Iansiti & Lakhani, 2014)		1				1							
(Ismail et al., 2017)	1	1	1	1	1					1			
(Khan & Goel, 2024)					1								
(Kraus et al., 2022)	1	1	1	1	1						1		
(Liu et al., 2011a)	1		1										
(Matt et al., 2015)					1	1							
(Mergel et al., 2019a)		1	1	1	1	1	1		1	1		1	
(Mićić, 2017)	1			1	1								
(Morakanyane et al., 2017)	1	1		1	1		1						
(Paavola et al., 2017)	1	1	1	1	1								
(Piccinini et al., 2015)	1	1	1	1									
(Pihir et al., 2019)			1			1		1					
(Reis et al., 2020)	1				1	1		1					
(Shehadeh et al., 2023)								1	1				
(Schuchmann & Seufert, 2015)	1	1		1									
(Schwertner, 2017)	1	1		1	1			1					
(Solis & Szymanski, 2016)	1	1		1	1		1		1	1			

(Stolterman & Fors, 2004)	1									1			
(Tang, 2021)	1	1	1			1							
(Van Veldhoven & Vanthienen, 2019)	1							1			1		
(Verhoef et al., 2021)		1	1			1							
(Vial, 2019)	1					1							
(Westerman et al., 2011)	1		1										
(Westerman et al., 2014a)	1		1										
(Westerman et al., 2014b)	1		1										
(Williams et al., 2019)	1	1	1		1						1		
(Warner and Wäger, 2019)	1					1	1						1

Source: the authors

- **Human Resources (5 occurrences):** The acknowledgment of human resources underscores the critical role of talent management, skill development, and organizational culture in driving digital transformation. Investing in employee training, recruitment, and retention initiatives is essential for building a workforce equipped with the digital competencies and capabilities required to thrive in the digital age.

- **Stakeholders (5 occurrences):** The emphasis on stakeholders underscores the importance of collaboration and partnership with various internal and external stakeholders, including employees, customers, suppliers, and top managers. Engaging stakeholders in the digital transformation journey is essential for aligning interests, sharing resources, and fostering collective ownership of digital initiatives.

- **Core Processes (3 occurrences):** The recognition of core processes highlights the need for organizations to prioritize and focus digital transformation efforts on core business processes that are critical for delivering value to customers and stakeholders. Digitalizing core processes such as product development, supply chain management, and customer service are essential for achieving operational excellence and competitive differentiation.

- **Strategy Renewal (3 occurrences):** The mention of strategy renewal underscores the importance of revisiting and realigning organizational strategies to capitalize on emerging opportunities and mitigate disruptive threats in the digital landscape. Continuous strategic planning, scenario analysis, and adaptive leadership are essential for navigating uncertainty and driving strategic renewal in the digital age.

Overall, the analysis reveals a multidimensional perspective on digital transformation, encompassing technological, strategic, organizational, and cultural dimensions. By addressing these key drivers holistically, organizations can navigate the complexities of digital disruption

and capitalize on opportunities for innovation, growth, and sustainable competitive advantage in the digital era.

Based on the most frequent key drivers identified in the analysis results, we propose a comprehensive definition of corporate digital Transformation (CDT):

"Corporate Digital transformation is a strategic and organizational process of reinventing traditional business models by integrating information technologies and placing customer experience at the core of operations. It involves organizational structure adjustment, operational and core processes digitalization, and strategy renewal to enhance overall business performance. It relies on innovation culture, stakeholders' collaboration, agility and developing digital culture among human resources." Source: The authors

This definition integrates key drivers such as technological innovation, business model, business performance, customer experience, operational processes, organizational structure adjustment, digital culture, human resources, stakeholders, core processes, and strategy renewal.

Based on the proposed definition and the key driver's occurrence, we suggest the following conceptual framework of digital transformation (Figure 1).

The framework provided in Figure 1, postulates "Business Performance" as the dependent variable, "Corporate digital transformation" as the mediating variable, and "Organizational Structure Adjustment", "Operational Processes", "Human Resources", "Business Model", and "Information Technology & Innovation" as independent variables, alongside "Change Management", "Customer Experience" et "Digital Economy" as moderating variables. We propose a comprehensive framework that seeks to elucidate the complex interrelationships between DT initiatives, key driver variables, and business performance.

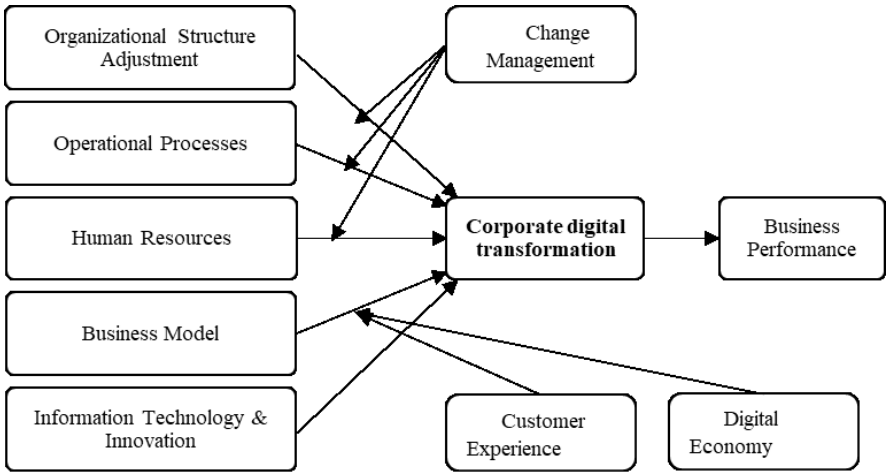

Figure 1. Conceptual framework of corporate digital transformation and Business Performance

Source: The authors

Each of the key driver variables dynamically interacts to support DT within the organization. The ultimate goal of the DT of the company is business performance optimization.

Discussion

The findings presented in this study shed light on the multifaceted nature of digital transformation (DT) in contemporary business contexts. Through an exhaustive review of 45 definitions of DT, this research synthesized key success factors and proposed a conceptual model defining their impact on organizational performance.

The evolution of DT definitions underscores the dynamic nature of the concept, which transcends simple technological adoption to encompass broader strategic and organizational imperatives over time. Indeed, according to the 45 selected definitions, the evolution of digital transformation definitions has shifted from an initial focus on technological integration and business process improvements to a holistic approach encompassing strategic, organizational, and societal changes, with an emphasis on innovation, customer experience, and the role of digital ecosystems in driving disruption and long-term competitive advantage.

The identification of 13 key drivers which occurred more than 3 times in the 45 studied definitions of DT highlights the interconnectedness of various factors shaping the success of digital transformation initiatives. These drivers encompass technological, strategic, organizational, and cultural dimensions, underscoring the complexity and multifaceted nature of DT as a strategic phenomenon.

The proposed research framework of DT success factors offers theoretical insights into the mechanisms underlying digital transformation and its impact on organizational performance. By conceptualizing the relationships between key drivers and performance outcomes, the model provides a framework for understanding the critical pathways through which organizations can leverage digital technologies to achieve strategic objectives and enhance business performance.

The practical implications of this research are manifold, offering actionable insights for organizations navigating the complexities of digital transformation. By elucidating the key success factors of DT, organizations can prioritize their efforts and allocate resources effectively to drive meaningful change. Indeed, according to many authors, a focus on customer experience, organizational culture, and strategic alignment can enable organizations to enhance customer satisfaction, foster innovation, and align digital initiatives with overarching business goals (Behl et al., 2023; Hadoussa & Louati, 2023; Louati & Hadoussa 2021; Bican & Brem, 2020; Bouwman et al., 2018; Broccardo et al., 2023; Çetin Gürkan & Çiftci, 2020; Morakanyane et al., 2017).

Moreover, the conceptual framework of DT key drivers provides a roadmap for organizations to assess their readiness for digital transformation and identify areas for

improvement. By evaluating their capabilities and addressing gaps in key drivers such as technology integration, change management, and stakeholder engagement, organizations can enhance their ability to adapt to digital disruption and capitalize on emerging opportunities in the digital economy (Al-Edenat, 2023; Arora et al., 2022; Chouaibi et al., 2022; Piccinini et al., 2015; Westerman et al., 2014a).

In the proposed framework in Figure 1, "Corporate digital transformation" serves as a central mediating variable in the framework, encapsulating the overall level of digitalization within the organization. As organizations embark on digital transformation journeys, they undergo fundamental changes in various dimensions, including organizational structure, operational processes, human resource management, business models, and technological capabilities. This mediating role underscores the holistic nature of digital transformation and its pervasive impact on organizational functioning.

The inclusion of "Change Management" as a moderator reflects the recognition of the challenges associated with implementing digital transformation initiatives. Effective change management practices are essential for overcoming resistance, fostering employee recruitment, and ensuring the successful adoption and integration of digital technologies. By moderating the relationship between "Corporate digital transformation" and key organizational variables such as operational processes, human resources, and organizational structure adjustment, "Change Management" plays a crucial role in facilitating the transformative effects of digitalization.

The introduction of "Customer Experience" and "Digital Economy" as moderators highlights the importance of customer-centricity and market dynamics in shaping the outcomes of digital transformation efforts. In an increasingly competitive and digitally-driven business environment, organizations must prioritize customer experience excellence and capitalize on emerging opportunities in the digital economy to sustain growth and relevance. By moderating the relationship between "Corporate digital transformation" and "Business Model", these variables underscore the need for organizations to align their digital strategies with evolving customer preferences and market trends.

Conclusion

This study contributes to the growing body of literature on digital transformation by providing a holistic definition of corporate DT by synthesizing key drivers of DT and proposing a conceptual framework for DT success. By elucidating the theoretical foundations, and practical implications of DT, this research advances our understanding of how organizations can navigate the complexities of digital disruption and thrive in an increasingly digital-centric environment. As digital technologies continue to reshape industries and redefine business models, the insights gleaned from this study can inform strategic decision-making and drive the organizational success of the DT process.

While this study offers valuable insights into the key drivers of DT, it is important to acknowledge certain methodological limitations. The reliance on a specific set of definitions and the exclusion of alternative perspectives may have an impact on the importance of key drivers according to their occurrence. Future research could benefit from a more comprehensive review of the literature, studying all definitions to capture the full spectrum of perspectives on DT.

The proposed framework offers a nuanced understanding of the DT's complex dynamics and its impact on business performance. By elucidating the mediating role of "Corporate digital transformation" and the moderating influence of "Change Management", "Customer Experience", and "Digital Economy", the framework provides a holistic perspective on the drivers and outcomes of digitalization initiatives. Moving forward, empirical validation of this framework through rigorous empirical research is warranted to enhance our theoretical understanding and practical application of digital transformation in organizational settings. A qualitative study could be conducted to test and support empirically the proposed conceptual framework.

Also, the operationalization and measurement of key drivers and their impact on organizational performance present methodological challenges. Future research could employ longitudinal studies to observe the evolution of DT application in an empirical context to provide richer insights into the dynamics of digital transformation processes and their outcomes.

Conflict of interest

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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Appendix 1. Evolution of digital transformation definitions

Authors and years	Definitions of digital transformation	Identified DT Key drivers
Stolterman & Fors (2004)	The changes that digital technology causes or influences in all aspects of human life.	IT technologies & innovation
		Human Resources
Westerman et al. (2011)	The use of technology to radically improve the performance or reach of the enterprise.	IT technologies & innovation
		Business performance
Liu et al. (2011b)	The integration of digital technologies into business processes	IT technologies & innovation
		Business performance
Bharadwaj et al. (2013)	an organizational strategy formulated and executed by leveraging digital resources to create differential value	IT technologies & innovation
		Digital culture
Westerman et al. (2014a)	The implementation of innovation and new digital technologies to effect business improvements in an organization.	IT technologies & innovation
		Business performance
Fitzgerald et al. (2014)	The use of new digital technologies (social media, mobile, analytics, or embedded devices) to enable major business improvements (such as enhancing customer experience, streamlining operations, or creating new business models).	IT technologies & innovation
		Business performance
		Business model
Brown et al. (2014)	DT encompasses everything from the cultural and organizational changes required to the related use of new digital technologies to enable major improvements – such as enhancing user services, streamlining operations, or creating entirely new services.	Digital culture
		Organizational structure adjustment
		IT technologies & innovation
		Customer experience
Iansiti & Lakhani, (2014)	The digitization of previously analog machine and service operations, organizational tasks, and managerial processes. It changes a business model in two ways: how the organization creates value for its customers (the customer value proposition) and how it captures that value (how it makes money).	Management practices
		Business model
		Organizational structure adjustment
Westerman et al. (2014b)	the use of technology to radically improve the performance or reach of enterprises.	IT technologies & innovation
		Business performance
Piccinini et al. (2015)	DT involves leveraging digital technologies to enable major business improvements, such as enhancing customer experience or creating new business models.	IT technologies & innovation
		Business performance
		Customer experience
		Business model
Matt et al. (2015)	DT involves transformations of key business operations and affects products and processes, as well as organizational structures, as companies need to establish management practices to govern these complex transformations.	Operational process
		Organizational structure adjustment
		Management practices
Henriette et al. (2015)	a business model driven by the changes associated with	IT technologies &

	the application of digital technology in all aspects of human society.	innovation
		Business model
Schuchmann & Seufert (2015)	realignment of technology and new business models to more effectively engage digital customers at every touchpoint in the customer experience life cycle	IT technologies & innovation
		Business model
		Customer experience
Henriette et al. (2015)	Digital transformation is more than just a technological shift and has impacted business models, operational processes, and end-user experience.	IT technologies & innovation
		Business model
		Operational process
		Customer experience
Bekkhus (2016b)	The use of digital technologies to radically improve the company's performance.	IT technologies & innovation
		Business performance
Gruman (2016)	The application of digital technologies to fundamentally impact all aspects of business and society.	IT technologies & innovation
		Business & Society
Horlacher & Hess (2016)	The use of new digital technologies, such as social media, mobile, analytics, or embedded devices, to enable major business improvements like enhancing customer experience, streamlining operations, or creating new business models.	IT technologies & innovation
		Business performance
		Customer experience
		Business model
Solis & Szymanski (2016)	The investment in and development of new technologies, mindsets, and business and operational models to improve work and competitiveness and deliver new and relevant value for customers and employees in an ever-evolving digital economy	IT technologies & innovation
		Digital culture
		Business model
		Operational process
		Customer experience
		Human Resources
		Digital economy
Schwertner (2017)	Digital Business Transformation is disrupting businesses across all industries and can lead to the creation of new products, services, and more efficient ways of doing business. The traditional value chain in industries has been disrupted by new digitally astute entrants, and the speed of this transformation is influenced by advances in technology, changes in consumer behavior, new business models, and environmental trends and regulatory practices.	Disruption
		Operational process
		value creation
		IT technologies & innovation
		Business model
		Sustainability
		Change process
		Customer experience
Morakanyane et al. (2017)	Digital transformation is an evolutionary process that leverages digital capabilities and technologies to enable business models, operational processes, and customer experiences to create value.	IT technologies & innovation
		Business model
		Operational process
		Customer experience
		Digital culture
Paavola et al. (2017)	The use of digital technology, in order to enable major business improvements in operations and markets such as enhancing customer experience, streamlining operations or creating new business models.	IT technologies & innovation
		Business performance
		Operational process
		Customer experience
		Business model
Chanias (2017)	The extended use of advanced IT, such as analytics, mobile computing, social media, or smart embedded devices, and the improved use of traditional technologies, such as enterprise resource planning (ERP), to enable major business improvements.	IT technologies & innovation
		Traditional technologies
		Business performance

Ismail et al. (2017)	The process through which companies converge multiple new digital technologies, enhanced with ubiquitous connectivity, with the intention of reaching superior performance and sustained competitive advantage, by transforming multiple business dimensions, including the business model, the customer experience (comprising digitally enabled products and services) and operations (comprising processes and decision-making), and simultaneously impacting people (including skills talent and culture) and networks (including the entire value system).	IT technologies & innovation
		Business performance
		Competitive advantage
		Business model
		Customer experience
		Operational process
		Human Resources
Hartl & Hess (2017)	The IT-enabled change in organizations through digitalization of products, services, core processes, customer touch points and business models. It distinguishes itself from previous IT-enabled business transformations in terms of velocity and its holistic nature.	Core processes
		Customer experience
		Business model
		Organizational structure adjustment
Mićić (2017)	The integration of digital technology into the business that results in, sometimes fundamental, changes in business operations and delivery of value to customers.	IT technologies & innovation
		Operational process
		Customer experience
Bondar et al. (2017)	Digital Transformation is a consistent networking of all economic sectors and as adaption of actors to new circumstances of the digital economy.	Digital economy
		Change process
Gebayew et al. (2018)	Digital transformation fundamentally alters business operations and customer value, necessitating modification of business plans and policies to achieve goals, particularly in operation and process management.	Operational process
		Customer experience
		Business model
		Management practices
Al-Ruithe et al. (2018)	DT enables enterprises to improve operational efficiencies and organizational performance, and blend digital and physical business and customer experiences.	Operational process
		Organizational structure adjustment
		Customer experience
		Digital economy
Hinings et al. (2018)	"the combined effect of several numeric innovations leading to new actors, structures, practices, values, and beliefs that change, threaten, replace, or complement existing rules of the game within organizations, ecosystems, industries, or domains." (Hinings & al., 2018, p. 53).	IT technologies & innovation
		Organizational structure adjustment
		Digital culture
		Operational process
Mergel et al. (2019b)	Digital transformation is a comprehensive effort to revise core processes and services of government, focusing on improvement of processes, relationships, and services. It evolves from analog to digital, resulting in a complete revision and creation of new digital services.	Core processes
		Business performance
		Digital economy
		Customer experience
Van Veldhoven & Vanthienen (2019)	The continuously increasing interaction between digital technologies, business, and society, which has transformational effects and increases the change process's velocity, scope, and impact.	IT technologies & innovation
		Stakeholders
		Change process
Mergel et al. (2019b)	Digital transformation is "a holistic effort to revise core processes and services to emphasize the cultural, organizational, and relational changes. The outcome of digital transformation efforts focuses among others on the satisfaction of user needs, new forms of service delivery, and the expansion of the user base."	Business model
		Digital culture
		Organizational structure adjustment
		Human Resources
Pihir et al. (2019)	Digital transformation is a holistic approach to shifting	Business performance

	organizations towards the implementation of new methods for raising organizational performance by boosting organizational capabilities and competitiveness.	Organizational structure adjustment
		Change process
		Strategic leverage of resources
		Competitive advantage
Warner & Wäger (2019)	Digital transformation is an ongoing process of using new digital technologies in everyday organizational life. Digital transformation is an ongoing process of strategic renewal that varies in scope across different organizations and involves the ongoing renewal of collaborative approaches and organizational culture.	IT technologies & innovation
		Organizational structure adjustment
		Strategy renewal
		Digital culture
		Strategic leverage of resources
Vial (2019)	Digital transformation is a process where digital technologies create disruptions triggering strategic responses from organizations that seek to alter their value creation paths while managing the structural changes and organizational barriers that affect the positive and negative outcomes of this process.	IT technologies & innovation
		Disruption
		Organizational structure adjustment
		Value creation
Williams et al. (2019)	The DT framework includes the networking of actors such as businesses and customers across all value-added chain segments and the application of new technologies. In order to increase the performance and reach of a company, DT involves companies, business models, processes, relationships, products, etc.	Stakeholders
		value creation
		IT technologies & innovation
		Business performance
		Business model
		Operational process
Cennamo et al. (2020)	Digital transformation is the emergence of new ways of organizing firms' value chains and interfirm relationships occur in digital ecosystems and marketplaces. It affects the organization as a whole, redefining strategies, entrepreneurial processes, innovation, and governance mechanisms.	Change process
		Governance mechanisms
		Competitive advantage
		Strategy renewal
		Core processes
Reis et al. (2020)	The rise of new digital technologies has led firms in virtually all industries to conduct multiple initiatives to explore and exploit their benefits, involving transformations of key business operations and affecting products, processes, and organizational structures.	IT technologies & innovation
		Operational process
		Change process
		Organizational structure adjustment
Tang (2021)	Digital Transformation is driven by emerging technologies and has the potential for significant top-line growth and bottom-line savings. Technology has evolved to allow for new business models, drive sales growth, and provide a competitive advantage. Emerging technology trends such as Social Media, IoT, Cybersecurity, Cloud Computing, and Artificial Intelligence are notable drivers of Digital Transformation. The applicability of these technologies depends on the industry and organization.	IT technologies & innovation
		Business performance
		Business model
		Competitive advantage
		Organizational structure adjustment
Verhoef et al. (2021)	Digital transformation requires specific organizational structures and bears consequences for the metrics used to calibrate performance and business model innovation. There are three stages of digital transformation: digitization, digitalization, and digital transformation	Organizational structure adjustment
		Business performance
		Business model
		Digitization
		Digitalisation
Gong & Ribiere (2021a)	A fundamental change process, enabled by the innovative use of digital technologies accompanied by	Business model
		IT technologies &

	the strategic leverage of key resources and capabilities, aiming to radically improve an entity* and redefine its value proposition for its stakeholders	innovation
		Digital culture
		Stakeholders
		Business performance
	*An entity could be: an organization, a business network, an industry, or a society.)	Strategic leverage of resources
Feroz et al. (2021)	Digital transformation refers to the unprecedented disruptions in society, industry, and organizations stimulated by advances in digital technologies such as artificial intelligence, big data analytics, cloud computing, and the Internet of Things.	IT technologies & innovation
		Organizational structure adjustment
		Operational process
		Disruption
Kraus et al. (2022)	DT definitions vary from the adoption and use of new technologies; to improvements in processes, operations, customer relations, and performance; to the creation of new business models; all the way to possible outcomes and impacts on several actors and environments.	IT technologies & innovation
		Operational process
		Customer experience
		Business performance
		Business model
		Stakeholders
		Sustainability
Gaidi & Baïna (2022)	"Digital Transformation" is a process brought about by technological changes, which, thanks to their development and their accessibility, make it possible to better exploit the explosion in the mass of data. DT has led to a radical and permanent change in the consumption habits of customers and stakeholders. These changes in consumption habits necessarily and deeply impact the company's strategy, its business model, its culture, the profile of its employees, its organization and its governance and obliges it to be more innovative to better differentiate itself through compared to the competition.	IT technologies & innovation
		Customer experience
		Stakeholders
		Strategy renewal
		Business model
		Digital culture
		Human Resources
		Organizational structure adjustment
		Governance mechanisms
Khan & Goel (2024)	Digital transformation is re-imagining your business and operations for the future digital economy.	Digital economy
		Change process
		Operational process

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