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DRIVERS OF DIGITAL TRANSFORMATION AND THEIR IMPACT ON ORGANIZATIONAL MANAGEMENT

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Abstract:

Digital transformation has become a critical topic for organizations that want to stay competitive in today's digital age. The widespread use of digital technologies has brought significant changes to the way organizations exist, operate and interact with customers. They are going through a process of reshaping and reorganizing processes and operations, as well as rethinking and redefining the human role in the value creation process. However, digital technologies and their diffusion are not the only driver of digital transformation, as the success of such change initiatives depends on many other factors, the definition of which is crucial to the success of digital transformation. The objective of this paper is to explore the drivers of digital transformation and their impact on management. The work presents a comprehensive review of the literature on digital transformation, identifying the main drivers that influence the success of digital transformation initiatives. It also defines the impact of these drivers on the management of organizations, identifying how the role of the executive is being redefined in today's digital age.

Key words: *Management, Digital Transformation, Driver, Digital Culture, Digital Strategy*

1. Introduction

In today's digital world, firms must adapt to the rapid changes brought about by technological breakthroughs. For organizations to remain relevant and satisfy client demands, the adoption of digital technologies has become essential. Digital transformation, however, entails a considerable change in organizational management as well as technology adoption. To flourish in the digital era, businesses must adapt to this transformation and adopt new mindsets, procedures, and organizational structures.

Customers, technology, or organizational development factors can be considered as the drivers of digital transformation. Technology drivers refer to the advent of new technologies and their impact on corporate operations, whereas customer drivers refer to shifting customer preferences and expectations. The need to increase organizational

performance and efficiency with the help of digital technologies is referred to as an organizational growth driver. Organizations must comprehend these forces in order to successfully adopt digital transformation and reap its benefits.

The aim of this research is to investigate how organisational management is influenced by digital transformation determinants. The paper will focus on how these drivers affect organisational structures, processes and culture, thus providing insight into how organisations and their management can adapt to the digital age and thrive in a dynamic environment.

2. Literature review

The increasing use of digital technologies across different industries (Vial, 2019) has led to a surge in research on this phenomenon. However, there is still a great deal of confusion and misunderstandings surrounding digital transformation, as the research on this topic is diverse and lacks a clear and common understanding of the concept. In the literature, there is no universally agreed definition of digital transformation, and researchers tend to define it based on their specific fields of expertise and interests. This has resulted in multiple definitions of digital transformation, which can make it difficult for individuals and organizations to navigate this complex topic. As digital transformation continues to impact various aspects of society (Komarčević et al., 2017), there is a growing need for a more unified and comprehensive understanding of this phenomenon to inform effective decision-making and strategies.

In the past, many organizations and researchers mistakenly equated digital technologies with the process of digitization or digitalization. As a result, the term "digital transformation" became misinterpreted, leading to varying definitions. Lankshear & Knobel (2008) defined digital transformation as the attainment of significant change within a professional or knowledge domain through the use of digital tools that facilitate innovation and creativity. Similarly, Westerman et al. (2014) and Bekkhus (2016) describe digital transformation as the application of technology to enhance business performance and expand reach. To clarify the meaning of digital transformation, it must be emphasized that it involves more than just the incorporation of digital tools (Goran et al., 2017). It encompasses the comprehensive restructuring of business processes, culture, and strategy to facilitate innovation and better address the needs of the organization's stakeholders (Horlacher & Hess, 2016; João Catarino et al., 2018; Kutnjak et al., 2019; Tumbas et al., 2017). Only with a clear understanding of this can organizations properly leverage digital transformation to achieve their goals.

Digital transformation refers to the changes that digital technology influences in every aspect of human life or the continuous process by which businesses adapt to disruptive changes in their customers and markets by using digital competencies to create innovative business models, products, and services (Al-Ruithe et al., 2018; Vial, 2019). This definition was proposed by some authors, including Al-Ruithe et al. (2018). Implementing a large-scale transformation poses a significant challenge, as many organisations have to reconsider their existing services while rethinking their business strategies (Bernard et al., 2006). Literature recognises the need for businesses to have a

digital competency to stay competitive in the market (Elizabeth Robinson, 2017). Hence, companies must strive to adapt to digital changes continually and be willing to embrace new technology to achieve success in the long run (McKinsey, 2018).

The scientific community has recognized that digital transformation is not just a technological change (Verhoef et al., 2021), but also requires the adaptation of various factors such as strategy, human resources, culture, talent development, and leadership (Al-Alawi et al., 2023; Bharadwaj et al., 2013; Cortellazzo et al., 2019; Goran et al., 2017; Guerra et al., 2023). Digital transformation enables cross-border interaction with suppliers, customers, and competitors, providing a competitive advantage by transforming the organization to leverage existing core competencies or develop new ones (Elizabeth Robinson, 2017; Komarčević et al., 2017; Verhoef et al., 2021; Vial, 2019). The implementation of digital transformation is crucial as it changes the way businesses operate and conduct themselves, leading to improved performance and a more efficient work environment (John Metselaar, 2021). Therefore, companies must understand that digital transformation is not solely a technological process (Behnam Tabrizi et al., 2019), but a comprehensive organizational shift that necessitates significant changes in leadership, culture, and mindset to reap the benefits (Goran et al., 2017; Korhonen & Halén, 2017; Singh & Hess, 2017).

The impact of digital transformation on managerial decisions (Cozza, 2020; John Metselaar, 2021) is a focus for some authors, who suggest that it can streamline decision-making processes. This is supported by the approach of Heilig et al. (2017), who argue that new digital technologies enable advanced data collection and processing, thereby supporting decision-making. However, these authors emphasize that the success of digital transformation is not solely dependent on the use of advanced technologies and methods. Instead, they argue that organizations must also adapt their organizational aspects to ensure success. For digital transformation to be successful, organizations must adapt their structures and processes to take full advantage of new technologies, rather than simply adopting them for their own sake. (Roedder et al., 2016)

Digital transformation is a process that involves three areas: business processes, business models, and consumer behavior, according to Schwertner (2017). The transformation of business processes involves automating research and development, production, and distribution processes, while business model transformation involves translating traditional models into the digital environment to provide virtual content to customers. As a result, digital transformation requires a change in organizational culture (Abujarad et al., 2010; Goran et al., 2017; Jigjiddorj et al., 2021) and the adoption of an innovative business model (S. Berman & Bell, n.d.; S. J. Berman, 2012). This change impacts every aspect of the organization, from information flows and processes to business models that fully exploit the opportunities offered by innovative solutions, media, distribution, and communication access (Baraldi & Nadin, 2006; Brown et al., 2014; Komarčević et al., 2017). A rigorous methodology, robust approach, appropriate implementation tools, and a long-term vision are necessary for this radical change, which requires an in-depth analysis of short, medium, and long-term steps the organization should take (Nicoletti, 2021). Failing to redesign the business model may result in inefficient, ineffective, and uneconomical use of digital transformation opportunities, warns

Nicoletti (2021). Success in implementing innovative solutions is not just about their adoption, but about redesigning the business model to adapt to the digital age's regulations and customer needs. The organization needs to envision a new structure capable of capturing digital transformation opportunities and cover every aspect, from corporate culture and leadership style to the business model and organizational chart (Baptista et al., 2020; Tsedal Neeley & Paul Leonardi, 2022).

The transformation of consumer experiences (Ahmed Hezzah, 2021; Anna S. Cui & Fang Wu, 2016; Beckers et al., 2018; Huseynli, 2022) involves improving customer behavior towards an organization's products and services, while engaging with customers during the sales process (Huseynli, 2022). The impact of digital technology on consumer behavior has been significant. Consumers now have easy access to information and can actively participate in dialogues with an organization and its stakeholders. This has changed customer expectations, and they no longer consider themselves to be captives of firms they do business with (Berry, 2021). As a result, firms need to meet higher customer service standards, as illustrated by the DBS Bank case study (Sia et al., 2016), where Asian consumers expect to carry out the majority of their banking transactions via mobile digital banking solutions. This has placed pressure on banks to undertake digital transformations and adapt to the changing market conditions. The success of a digital transformation can come from improving the digital customer experience by realigning and investing in digitized solutions and models (Beckers et al., 2018; Huseynli, 2022; Shrivastava, 2017). One of the primary reasons for digital transformation is the need to rethink customer interactions (Berry, 2021; Shrivastava, 2017). Their expectations are constantly changing due to the daily use of innovations, changing the way they interpret the services they use (Chanias, 2017; Hong & Lee, 2017; Lucas et al., 2013; Yeow et al., 2018; Yoo et al., 2010).

Digital transformation is a process that necessitates changes in both an organization's production and support processes (Battistoni et al., 2023; Bun, et al., 2021). As noted by Lin et al. (2009), these changes are necessary for organizations to stay competitive in an increasingly digital landscape. One of the benefits of digital transformation is the ability to collect more data about consumer behavior whenever a customer purchases a digital service instead of a traditional service (Roedder et al., 2016). This data can be used to increase the adaptability of the service to the specific needs of the consumer (Chen et al., 2012; T. Wang & Ji, 2010). By understanding the needs and preferences of customers, organizations can tailor their services to provide a more personalized experience (Beckers et al., 2018; Huseynli, 2022). This, in turn, can lead to increased customer satisfaction and loyalty (Huseynli, 2022). Moreover, the ability to collect and analyze data can also help organizations to identify areas for improvement in their processes, leading to greater efficiency and cost savings (Alexopoulos et al., 2022; Chen et al., 2012; David Alvaro & Cynthia A. Challener, 2022). However, digital transformation is not without its challenges (Ana Kutnjak & Igor Pihir, 2019; Baraldi & Nadin, 2006; Komarčević et al., 2017). Organizations must ensure that they have the necessary infrastructure, skills, and processes in place to effectively collect, analyze, and use data (Benevene & Cortini, 2010). Additionally, they must be mindful of data privacy and security concerns to protect customer information (Pramanik, 2016; Trung et al.,

2021). Ultimately, digital transformation is a complex and ongoing process that requires organizations to be agile and adaptable in their approach. By embracing digital technologies and data-driven insights, organizations can position themselves for success in the digital age (Gölzer & Fritzsche, 2017).

3. Digital transformation drivers

Digital transformation is crucial for modern businesses to remain strategically competitive in today's dynamic environment. However, it is not a simple task, but rather a long journey that involves adopting digital solutions, rethinking and reshaping business strategies, and ensuring business continuity. The motivation behind digital transformation is driven by the desire to remain competitive and improve performance, as well as the need to ensure business continuity. The success of this transformation process depends on several factors and conditions that act as external or internal triggers for organizations. The drivers of digital transformation can be categorized as customer, technology, or organizational development, and are factors that facilitate or even force companies to adopt digital solutions to keep up with digital changes in their industry. Understanding these drivers is crucial for mastering the transformation phenomenon and ensuring its successful implementation.

3.1. Imperatives generated by the firm's external environment

Digital technology and technological progress

Digital transformation has become an essential element of organizational success in the current business environment. The use of digital technologies, such as the Internet of Things (IoT) and Big Data, has become critical to driving and enabling digital transformation (Alexopoulos et al., 2022; Trung et al., 2021). However, the implementation of these technologies alone is not sufficient to ensure digital transformation (Behnam Tabrizi et al., 2019). Instead, they need to align with the organization's overall business goals and complement the specific transformation goals the organization is pursuing (Abujarad et al., 2010).

According to research by IDC, (2018) and Berghaus & Back (2017), the effective use of digital technologies can enable organizations to easily adapt to change and drive higher levels of innovation. Management must focus on the elements that are not subject to change to accelerate the transformation process and reduce friction. This requires a clear understanding of the organization's objectives, as well as a willingness to embrace new technologies and processes. Ultimately, successful digital transformation depends on a holistic approach that considers both technological and organizational factors (Akmaeva et al., 2017; Appio et al., 2021).

Tsiavos & Kitsios (2022) highlight the multifaceted role of technology in the digital transformation process. Technology can both drive and hinder digital transformation. Cloud computing, big data, and the IoT can provide organizations with flexibility, real-time insights, and operational optimization, making them powerful drivers of digital transformation (Al-Ruithe et al., 2018; David Alvaro & Cynthia A. Challener, 2022; Trung et al., 2021). However, data silos, integration issues, and the complexity of integrating new

technologies can act as barriers to digital transformation (Ana Kutnjak & Igor Pihir, 2019; Jones et al., 2021; Tsiavos & Kitsios, 2022). Despite these challenges, Tsiavos & Kitsios (2022) also highlight the importance of technology as an enabler of digital transformation.
The IoT has transformed the way data is collected, stored, and analyzed, enabling organizations to make informed decisions and optimize processes (Bhanushali, 2020; Boris Shiklo, 2022; Kalsoom et al., 2021; Mendhurwar & Mishra, 2019; Trung et al., 2021). Low-cost sensors, computing, connectivity, cloud storage, batteries, energy harvesting technology, and standards connect all the pieces together, making the IoT a feasible option for organizations (Iansiti & Lakhani, 2014; Jung et al., 2020; Trung et al., 2021). Similarly, Big Data has the potential to provide long-term growth for organizations, from resource consumption to process automation and optimization (Alexopoulos et al., 2022; David Alvaro & Cynthia A. Challener, 2022; Y. Wang et al., 2018). Companies use Big Data to analyze internal processes, predict market trends and customer needs based on existing data, and improve and develop offerings (Jung et al., 2020; Won & Park, 2020). Furthermore, cloud computing and big data analytics are major digital trends that can enable new business models and create new opportunities for companies to increase their competitiveness in local and international markets through product or service innovation and improved production processes (Ginting, 2022; Y. Wang et al., 2018).

In today's business environment, continuous data research has become a necessary practice for organizations to adapt to possible changes and identify new revenue opportunities (David Alvaro & Cynthia A. Challener, 2022; Gölzer & Fritzsche, 2017). Technological progress and innovation are essential elements of economic growth, providing organizations with the opportunity to outperform their competitors (Elizabeth Robinson, 2017; Knowles, 2017). Engaging in constant monitoring of the technological world can help identify new opportunities for streamlining business models and benefiting from business model innovation.

Digital technologies play a significant role in driving and enabling digital transformation. However, successful digital transformation depends on a holistic approach that considers both technological and organizational factors. Organizations must align digital technologies with their overall business goals and complement specific transformation goals to ensure effective use of these technologies. Constant monitoring of the technological world can help organizations identify new opportunities for streamlining business models and benefiting from business model innovation.

Digital competition and changing business practices

The current business landscape is characterized by intense competition (Elizabeth Robinson, 2017; Kathuria et al., 2010; Knowles, 2017), which puts pressure on companies to gain customers, increase market share, and survive. This competitive pressure drives organizations to pursue creativity, embrace change, and develop innovation competence to outperform their competitors in the market (Kathuria et al., 2010). Digital transformation is increasingly being driven by competitive pressure worldwide, with online businesses competing in new territories and leaving markets wide open for increased online competition (Mithas et al., 2013).

The shift to digital transformation has resulted in a change in consumer behavior (Taryn Hall, 2016), which has shifted from being a mass market targeted through one-way broadcast marketing to a dynamic network driven by two-way communication to enhance economies of value (Hunjet et al., 2019). Customer centricity (Castagna et al., 2020) has evolved into value centricity, where consumers and organizations thrive together (Murtaza Masood Mustafa & Santosh Kumar Nanda, n.d.). With the use of digital technology, consumers have new demands on companies (T. Wang & Ji, 2010), such as the availability of different ways to communicate and the accessibility of products and services. To succeed in digital transformation, companies must focus on customer experience (Ahmed Hezzah, 2021; Shrivastava, 2017), identifying and understanding customer needs and preferences and using that information to guide digital initiatives, as well as promoting a culture of continuous improvement (Davenport, 1993; pipartners.com, 2021). Metrics and KPIs (Bekkhus, 2016) should be established to measure success in terms of customer satisfaction and engagement (Beckers et al., 2018). Ultimately, the success of digital transformation depends on prioritizing the customer experience.

In addition to focusing on customers, companies should also prioritize employee experience (Jigjiddorj et al., 2021), providing them with the necessary tools and procedures to meet customer needs effectively. By focusing on both customers and employees, companies can successfully navigate digital transformation, leading to growth and overall success.

Financing capacity

Financial resources play a crucial role in the digital transformation of small and medium-sized enterprises (SMEs) (Harel et al., 2020). SMEs face barriers to innovation due to limited access to financial resources, high cost of external finance sources, and policies practiced by resource providers (Jones et al., 2021). Omrani et al. (2022) highlight the importance of financial resources in the digital transformation of SMEs, emphasizing that these resources can be in the form of internal funds, external funds, or a combination of both. Government policy is also playing a crucial role in driving the digital transformation of the business environment. In Romania, the National Recovery and Resilience Plan is a crucial step towards sustainable and equitable development, with a 6% allocation of the total budget, or €1.88 billion, dedicated to digital transformation (PNRR, 2022a). The plan's objectives include increasing investment in IT&C infrastructure, improving access to high-speed internet, developing digital skills, and encouraging businesses to adopt digital technologies in their processes (PNRR, 2022b).

The Digital Europe program is an EU-funded initiative aimed at promoting digital transformation in Europe's economy and society (European Commission, 2018, 2022b). The program focuses on providing strategic funding to support projects in five key areas, including supercomputing, artificial intelligence, cyber security, advanced digital skills, and the widespread use of digital technologies. Digital Innovation Hubs (DIHs) are one-stop centres designed to help businesses become more competitive by using digital technologies (European Commission, 2022a). They provide access to technology infrastructure, knowledge, commercial and financial support, and act as a regional first point of contact to strengthen the innovation ecosystem. The European Industry

Digitisation Strategy aims to strengthen the EU's competitiveness in digital technologies and ensure that all businesses can benefit from digital innovation (European Commission, 2018).

Financial resources, government policies, and regulatory changes are all crucial factors that influence the digital transformation of organizations. The availability of financial resources is particularly important for SMEs, which face barriers to innovation due to limited access to financial resources. Government policies and initiatives, such as the National Recovery and Resilience Plan and the Digital Europe program, provide strategic funding and support to promote digital transformation. Regulatory changes also play a role in driving digital transformation, as organizations adapt to comply with new laws and regulations. Ultimately, digital transformation is necessary for organizations to remain competitive and meet the evolving needs of their customers in a rapidly changing business environment.

COVID-19 pandemic crisis

The COVID-19 pandemic has triggered significant changes in the global business landscape, particularly with regards to digital transformation (ANA KUTNJAK, 2021; Gabryelczyk, 2020; McKinsey, 2020). Many businesses have had to re-evaluate their models, processes, and systems due to the bottlenecks created by the crisis (McKinsey, 2020; Seetharaman, 2020). To ensure business continuity and overcome supply chain disruptions, organisations have quickly moved online and implemented smart working solutions (Gabryelczyk, 2020; Soto-Acosta, 2020). The OECD (2021) reports that 70% of businesses surveyed increased their use of digital technologies due to COVID-19. However, many did not have a plan or adequate time to effectively implement these changes, leaving them vulnerable to cybercrime (Pramanik, 2016).

The sudden shift to remote working has pushed companies over a 'technology inflection point', accelerating the adoption of digital tools (McKinsey, 2020; Seetharaman, 2020). While this has been necessary to adapt to the new normal, there is a continued need for advice, support, and guidance to inform the transition and address risks associated with the use of digital solutions (ANA KUTNJAK, 2021). The pandemic has highlighted the importance of a solid digital strategy, with businesses needing to select the right digital systems, update employees' digital skills and develop appropriate protection and security measures (Gabryelczyk, 2020).

As a result of the pandemic, several notable transformations have taken place in the digital business landscape (Di Vaio et al., 2020). Firstly, there has been an accelerated shift towards digital business models. This includes an increase in e-commerce, digital payments and virtual services as companies have had to adapt to meet the needs of remote customers (T. Wang & Ji, 2010). This trend is likely to continue in the post-pandemic context, with businesses needing to invest in digital technologies and upgrade their workforce to remain competitive.

Secondly, remote working and digital collaboration tools have become more prevalent as companies have had to find ways to continue their operational activities with employees working from home (Berry, 2021; Jigjiddorj et al., 2021). This has led to an increased focus on digital security and the use of artificial intelligence (AI) and automation

(Trung et al., 2021). For instance, companies have adopted AI-powered tools to screen employees for COVID-19 symptoms and enforce social distancing protocols (Di Vaio et al., 2020).

Thirdly, the pandemic has driven an increase in the use of digital technologies to improve operational efficiency and supply chain resilience (Bienhaus & Haddud, 2018; Soto-Acosta, 2020). This includes the use of data analytics, the Internet of Things (IoT), and blockchain (Dong et al., 2022; Mendhurwar & Mishra, 2019; Y. Wang et al., 2018). Companies have adopted these technologies to enhance their visibility into supply chain operations, reduce costs, and mitigate risks associated with disruptions caused by the pandemic.

However, the pandemic has also highlighted the disparities that exist in technology adoption and digital readiness across various industries and regions (Seetharaman, 2020). Some businesses have been able to quickly adapt to the new normal while others have struggled (McKinsey, 2020). This emphasizes the need for businesses to invest in digital technologies and upgrade their workforce to remain competitive and continue to thrive in the post-pandemic context.

The COVID-19 pandemic has accelerated the adoption of digital technologies and transformed the global business landscape (Gabryelczyk, 2020; Georgescu et al., 2022; Soto-Acosta, 2020). While this has been necessary to adapt to the new normal, there is a continued need for advice, support, and guidance to inform the transition and address risks associated with the use of digital solutions. As the digital landscape continues to evolve, companies must remain agile and embrace innovation to stay ahead of the competition.

3.2. Challenges in the internal organsational environment

Organizations that remain rooted in traditional business models and thinking patterns are at an increased risk of business lock-in, which could ultimately lead to bankruptcy without any significant changes. This risk is due to their inability to acknowledge and adapt to current trends in the business environment, particularly with regards to the proliferation of digital technologies. Although various external factors can influence an organization's digital transformation, such as market competition, the process of implementing fundamental changes through digital technologies and rethinking traditional business models ultimately requires the organization's willingness to make this shift. The organization's decision to undergo a fundamental change is thus the primary factor in its digital transformation, which can be influenced by a variety of internal and external factors.

Availability of resources

One of the most critical driver of digital transformation is the financial situation of the organization (ANA KUTNJAK, 2021; Jones et al., 2021; Tsiavos & Kitsios, 2022). Digital transformation is a long-term investment that requires a feasibility analysis of the project as well as an assessment of its profitability. Organizations need to consider the costs of implementing and supporting the project, including procurement, delivery, hardware and software installation, staff retraining, and management training costs (Harel et al., 2020).

Human capital and its readiness for transformation are another critical driver of digital transformation (Al-Alawi et al., 2023; Benevene & Cortini, 2010). The number of ICT specialists and the skills and flexibility of other employees are important factors in this process. Organizations need to assess the competencies and skills of their employees and identify areas where they need to be improved (Angélico Gonçalves et al., 2016; Guerra et al., 2023; Kutnjak et al., 2019). Developing the competencies and skills of employees is essential for successful digital transformation, as emphasized by Blanka et al. (2022).

Technical skills such as data analysis and programming are essential for effective navigation of digital transformation (Demir, n.d.; Kutnjak et al., 2019). Non-technical skills such as communication and problem-solving are also necessary (Sousa & Rocha, 2019). Therefore, organizations need to assess the technical and non-technical skills of their employees and identify areas where they need to be improved. Training programs need to be designed to ensure that employees acquire the necessary skills to navigate the digital transformation journey successfully.

Human creativity is another critical factor that drives digital transformation (Botella-Carrubi & Torras, 2019; Guerra et al., 2023; Jiang et al., 2022). Knowledge is a more important factor than skills, as argued by (Jiang et al., 2022). Therefore, organizations need to encourage and foster a culture of creativity and innovation within the workplace. They need to create an environment where employees are encouraged to think outside the box and come up with innovative solutions to problems.

Digital culture

In today's fast-paced world, businesses must adapt to the rapid advancement of technology solutions to remain competitive. Developing a digital culture has become crucial for companies to transform their operations and improve their interactions with customers and employees (Goran et al., 2017; Slack, 2022). A digital culture is described as the way in which digital tools and technologies shape a company's behavior and mindset (Tulip, 2023). When a company embraces a digital culture, employees use digital technology for collaboration, innovation, and providing customers with access to products, services, and support (Martínez-Caro et al., 2020; Slack, 2022).

Implementing an effective digital culture offers numerous benefits, including driving an organization to embrace change and identifying revenue opportunities through data optimization and analytics (Goran et al., 2017; Tulip, 2023). Digital culture plays a significant role in driving digital transformation within an organization, characterized by a focus on innovation, collaboration, continuous learning, adaptability, and effective communication (Slack, 2022; Tulip, 2023).

One of the main benefits of a strong digital culture is the ability to identify revenue opportunities through data optimization and analytics (Philip & Mckeown, 2004; Y. Wang et al., 2018). With the increasing amount of data available, organizations can analyze and make data-driven decisions that lead to increased efficiency and effectiveness (David Alvaro & Cynthia A. Challener, 2022; Gölzer & Fritzsche, 2017). Digital culture encourages employees to adopt a data-driven mindset and use data to inform their decisions (Tsedal Neeley & Paul Leonardi, 2022; Tulip, 2023).

Effective communication is critical to ensuring everyone understands the goals and objectives of the organization's digital transformation (Blanka et al., 2022). A strong digital culture promotes effective communication, enabling employees to share ideas and collaborate on innovative solutions (Tulip, 2023). It encourages open communication channels and creates a supportive environment that empowers employees to take risks and experiment with new ideas (Blanka et al., 2022; Jigjiddorj et al., 2021).

To develop a strong digital culture, organizations need leadership that promotes innovation, collaboration, continuous learning, adaptability, and effective communication. Leaders must foster a culture of experimentation and provide employees with the tools and resources they need to innovate and collaborate. Leaders must also be open to feedback and embrace a growth mindset that enables them to learn and adapt to new technologies and trends.

Digital strategy

In addition to developing a digital culture, digital transformation requires a comprehensive approach that considers the organizational structure and strategy of the business (Brown et al., 2014; Mithas et al., 2013). Organizational structure refers to how a company is organized and how its various departments are related to one another (Stefan F.Dieffenbacher, 2022). It encompasses the decision-making hierarchy, employee roles and responsibilities, and supporting processes and systems (Markus & Robey, 1988). Different types of organizational structures can impact digital transformation in various ways (Stefan F.Dieffenbacher, 2022). For example, a hierarchical structure with centralized decision-making may struggle to adapt quickly to changes in the market triggered by new digital technologies, while a flat structure with decentralized decision-making may allow the organization to be more agile and responsive to change (Kwon, 2018; Stefan F.Dieffenbacher, 2022) .

An organization's digital strategy plays a crucial role in driving its digital transformation (Bharadwaj et al., 2013; Yeow et al., 2018). A well-defined digital strategy should be a key component of the company's overall strategy, giving direction and focus to the organization, helping it to prioritize and allocate resources effectively (Helmy Ismail Abdelaal et al., 2018; Kane et al., 2015; Mithas et al., 2013). A digital strategy should outline specific goals and objectives, as well as the resources and processes required to achieve them (Kane et al., 2015). It should be designed to help companies better understand the potential benefits of new technologies and ensure that technology investments are aligned with overall business goals (Bharadwaj et al., 2013; Kane et al., 2015).

To achieve digital transformation, companies need strong leadership, a willingness to embrace change, and the necessary resources (Cortellazzo et al., 2019; Kathuria et al., 2010). Strong leadership is essential to communicate the digital strategy and vision, gain buy-in from all stakeholders, and align resources accordingly (Cortellazzo et al., 2019). It is also essential to develop a culture of innovation and experimentation that encourages employees to test new ideas and approaches (Kathuria et al., 2010). A willingness to embrace change is crucial to ensure that the organization can adapt to new technologies

and processes. Finally, the necessary resources, including funding, talent, and technology, are critical to implementing a successful digital transformation.

4. The impact of the drivers of digital transformation on management

Digital transformation is causing significant changes in businesses worldwide. It offers increased efficiency, better performance, and access to new knowledge and capital. Digital technologies can also lead to increased specialization and profitability. To remain competitive, companies need to adapt to the digital needs of the modern market by implementing and utilizing new technologies that create more efficient and productive business models, systems, and platforms. The management of the organization ultimately decides to adopt and implement these technologies. They need to be flexible and open to change to keep up with market trends. The impact of digital transformation drivers on organizational management is the focus of this chapter.

4.1. Business process optimization

Digital technologies are having a significant impact on how businesses operate and manage their activities. Martinčević (2021) argues that the widespread expansion of digital technologies and technological advancements have led to an increasing need to ensure business continuity, which is driving management decisions regarding operability and efficiency. The author identifies automation as one of the ways in which management's decision to adopt digital technologies is influencing the organization's activity. Automation technologies, such as Robotic Process Automation (RPA) (S. C. Lin et al., 2018; Micah Smith, 2021; UiPath, 2021), enable companies to streamline and optimize repetitive tasks such as data entry, form filling, report preparation, and customer service (Martinčević, 2021). This not only increases operational efficiency but also reduces costs resulting from errors in repetitive business processes (Niels Neelis, 2017; UiPath, 2021). From a management perspective, automation also offers opportunities to retrain employees, allowing them to progress by taking on responsibilities that require new skills and a more creative and innovative approach.

Also, Martinčević (2021) highlights that the collection, storage, and analysis of large amounts of data enable organizations to better understand customer behavior and market trends, providing the basis for strategic decisions related to product development, marketing, and sales. Data analytics tools can also help determine the productivity and effectiveness of employees' work, streamlining communication and task management between subordinates and managers. Levchaev & Khezazna (2019) analyze how digital technologies are transforming management tools, such as enterprise resource planning (ERP) and customer relationship management (CRM) systems, making them more flexible and agile to better support digital business models. The authors argue that digital technologies are facilitating the development of new business models and creating new opportunities for companies to interact with customers and partners.

4.2. Digital competition and changing business practices

Digital technologies are prompting organizations to adapt to changes brought about by the digital transformation of the economy. Management of organizations must

respond to these changes swiftly to maintain business continuity. Developing a digital transformation strategy is a complex and long-term process, and it is not merely about implementing technology solutions. Management must initiate and promote the transformation journey, aided by good information and authority over the organization's resources (Akmaeva et al., 2017; Andal-Ancion et al., 2003; Appio et al., 2021). Matt et al. (2015) suggest several digital transformation strategies, including enhancing internal operations through digital technologies, creating new digital products and services, fostering a culture of innovation (Appio et al., 2021), having a clear vision and strategy (Kane et al., 2015), and building necessary skills and capabilities (Guerra et al., 2023; Müller & Hopf, 2017; Sousa & Rocha, 2019).

The expansion of digital technologies and new business models are prompting organizations to adopt digital transformation strategies (Helmy Ismail Abdelaal et al., 2018; Kane et al., 2015; Matt et al., 2015). Matt et al. (2015) stress the importance of leadership openness to change as a significant aspect of organizational management. They propose several strategic approaches, including improving internal processes and operations, creating new digital products and services, and developing a culture of innovation and experimentation (Davenport, 1993; World Economic Forum, 2018). The authors highlight the need for strong leadership with a clear vision and strategy for digital transformation (Bharadwaj et al., 2013; Kane et al., 2015). This includes fostering a culture of continuous learning and development to effectively use digital technologies and create value for customers (Murtaza Masood Mustafa & Santosh Kumar Nanda, n.d.; T. Wang & Ji, 2010). They also stress the importance of an appropriate risk tolerance and openness to experimentation to be prepared for continuous changes in business models triggered by technological progress. Successful digital transformation depends on the organization's ability to adapt and evolve digital transformation strategies as the digital landscape and technologies continue to advance.

4.3. Management structure change

The rapid adoption of digital technologies across industries has led to the emergence of the Chief Digital Officer (CDO) (Haffke et al., 2016; Horlacher, 2016; Horlacher et al., 2016) role, responsible for driving the digital transformation of a company. The CDO is seen as a catalyst for change, taking ownership of the strategic and communication aspects of digital transformation, and working proactively to drive cross-functional changes within the company (Buchwald & Lorenz, 2020; Tumbas et al., 2017). The relationship between the CDO and the Chief Information Officer (CIO) is interdependent but with clear distinctions between their responsibilities. The CIO is responsible for managing the organization's technology infrastructure, while the CDO focuses on leveraging digital technologies to drive business growth and innovation (Haffke et al., 2016). According to Haffke et al., (2016), it is important to have both a CIO and a CDO in an organization undergoing digital transformation, as these two roles are complementary. The CIO is responsible for optimizing the existing technology infrastructure, while the CDO is responsible for developing new digital products and services. The authors suggest that the CIO and CDO should work together to develop a

shared vision and strategy for the organization and set clear goals and metrics to measure the success of digital transformation efforts.

4.4. Management practices change

The adoption of digital technologies has become essential for organizations to secure or increase their competitive advantage (Elizabeth Robinson, 2017; Knowles, 2017). Digital transformation has significantly influenced managerial practices, and organizations need to develop the systems required to govern this complex transformation (Kathuria et al., 2010; Murtaza Masood Mustafa & Santosh Kumar Nanda, n.d.). The practices required for managers include networking, team building, supporting, mentoring, inspiring, recognizing, rewarding, consulting, delegating, planning, clarifying, problem solving, monitoring, and reporting (Yukl, 2012). These practices can be categorized into four types: task-oriented, relationship-oriented, change-oriented, and externally oriented.

Task-oriented practices are related to the effective use of organizational resources to accomplish tasks and maintain stable business operations (Yukl, 2012). Digital technologies have optimized the use of resources, allowing managers to save resources by facilitating remote working and collaboration (Jigjiddorj et al., 2021). By implementing digital technologies, communication processes have been streamlined, and the exchange of information between different positions and departments within the organization has been facilitated. Managers can use digital tools such as instant messaging, video conferencing, and cloud-based project management platforms to communicate and collaborate with their teams in real time, regardless of their physical location(Kathuria et al., 2010). Data and analytics are also being used to improve business performance, with managers using real-time information to make data-driven decisions.

Relationship-oriented practices aim to enhance the quality of human resources and relationships within an organization (Yukl, 2012). Digital transformation has had a significant impact on relationship-oriented practices by enabling organizations to use data and analytics to gain a deeper understanding of customers and personalize interactions (Murtaza Masood Mustafa & Santosh Kumar Nanda, n.d.). Social media and messaging apps have also become important channels for communication and engagement, allowing organizations to listen and engage with customers in real time (Huseynli, 2022). Additionally, digital tools and platforms have allowed for more effective collaboration and communication among employees, regardless of location, as remote working has become more prevalent.

Change-oriented practices involve encouraging and facilitating change within the organization (Yukl, 2012). Digital transformation has made change-oriented practices more critical, as businesses need to be agile and adapt quickly to remain competitive (Akmaeva et al., 2017). To ensure business continuity, managers must encourage and anticipate change by promoting innovation initiatives among employees, facilitating employee learning, and providing opportunities for development and growth.

External management practices involve networking, external monitoring, and representation (Yukl, 2012). Digital transformation has significantly changed external management practices, leading to changes in the way companies interact with customers, such as collecting and analyzing data to personalize products and services and improve

customer engagement and loyalty (Gölzer & Fritzsche, 2017). It has also led to the emergence of new technologies, such as AI and IoT, which have the potential to automate tasks, provide personalized recommendations, and improve supply chain efficiency (Trung et al., 2021). By embracing digital transformation, companies can gain a competitive advantage and improve their overall performance.

5. Conclusion

Knowing the drivers of digital transformation and their impact on management is crucial for organizations in today's rapidly changing business environment. New technologies, social changes, and globalization are disrupting traditional management norms, and organizations must adopt an entrepreneurial mindset and agile principles to succeed. The drivers of digital transformation, and a well-defined strategy, a structure that promotes innovation, and competition within the digital industry can drive successful transformation. The government plays a significant role in shaping a country's competitiveness in the digital economy. The COVID-19 pandemic has accelerated the need for digital transformation, and organizations must implement alternative ways of doing business. The role of the manager is evolving in the digital age, and organizational culture and strategy are vital factors for successful digital transformation. By prioritizing culture and strategy, organizations can create a growth-oriented environment that enhances the customer experience and drives long-term success.

The contribution of this paper is to identify the determinants of digital transformation and their influences on organisational management, along with defining how organisations and their management can adapt to the digital age and thrive in a dynamic environment. Having a clear definition of the drivers as well as the influence on the management of organizations, a proposed objective for further research is to analyze the strategic imperatives of digital transformation as well as the ways and practices of implementing organizational change through digital technologies and opportunities.

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