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Navigating the Digital Frontier: A Literature Review on Business Digitalization

Btissam Benga
Azzouz Elhamma
Research laboratory in organizational management sciences
National School of Commerce and Management of Kenitra
Ibn Tofail University of Kenitra, Morocco

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Abstract

The rise of digital technology has compelled organizations to undergo significant changes or, at the very least, reassess their operational strategies. Many major corporations have poured significant financial resources into what is commonly referred to as "Digitalization." Digitalization, the integration of digital technologies into various aspects of life and business, has revolutionized industries across the globe, but even if Digitalization offers numerous benefits, including increased efficiency, innovation, and improved customer experiences, it also presents challenges such as security risks, the digital divide, technological dependency, and ethical considerations. The objective of our article is to present a literature review on digitalization and provide an overview of the notable constraints and obstacles associated with digitalization and its advancement. The literature review concerning digitalization was conducted through a systematic search across various research databases and platforms including but not limited to ScienceDirect, Google Scholar, and ACM Digital Library. Articles, research papers, books, and conference proceedings published between 2012 and 2024 were considered for inclusion in the review. Synthesizing and analyzing information from various publications and authors revealed a comprehensive understanding of the challenges and opportunities associated with digitalization. The results highlighted common themes such as security risks,

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the digital divide, technological dependency, ethical considerations, and the demand for digital resources. Additionally, the review identified key strategies for addressing these challenges and leveraging digital technologies for positive societal impact.

Keywords: Digitalization, Organizations, Integration, Costumer experiences, Challenges

1. Introduction

In recent decades, the forces of globalization have intensified the need for businesses to adapt. This adaptation is essential not only for survival but also for thriving in competitive landscapes. Efficient adaptation requires businesses to seamlessly integrate digital processes and collaborative tools. Consequently, the significance of digital transformation has grown exponentially. Research underscores the necessity of incorporating digital transformation into existing business frameworks, as it encompasses more than just technological changes. It affects various facets of business operations (Elhamma, 2023). Successful business transformation hinges on the ability to both leverage existing resources and explore new possibilities to enhance organizational agility.

Digital technologies have the potential to disrupt the competitive landscape by reshaping traditional markets. The emergence of platforms has revolutionized existing market structures, leading to the advent of the sharing economy. These platforms facilitate the exchange of digital goods and services, blurring the lines between traditional market boundaries. In this virtual domain, competition transcends physical constraints, allowing for faster and more fluid information flows. As a result, the barriers to entry that once hindered new entrants become less significant in the face of digital innovation.

This article dives deep into the complex world of digitalization, examining its definitions, numerous advantages, and built-in limitations. With the global economy steadily moving towards digital integration, grasping the nuances of this trend becomes crucial for businesses striving to stay competitive in an increasingly interconnected world.

As businesses worldwide wrestle with the need to adapt and innovate, understanding the complexities of digitalization emerges as a vital strategic requirement. From streamlining operations to enhancing customer experiences, the potential rewards of digital transformation are extensive and alluring. Yet, amidst the promises of efficiency gains and expanded markets, there are challenges and constraints that require careful consideration.

By navigating through the intricacies of digitalization, this article aims to provide businesses with the insights needed to fully leverage its potential

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while mitigating inherent risks. In doing so, it aims to be a guiding light amidst the ever-changing landscape of the digital age, empowering enterprises to chart a path towards sustainable growth and resilience in this digital era. The literature review for this article was conducted through a comprehensive search strategy aimed at capturing relevant studies pertaining to digital transformation and its associated challenges and benefits. Relevant kinds of literature were obtained through academic databases such as Scopus, IEEE Xplore, and Google Scholar. The search encompassed a variety of keywords and phrases including digital transformation, business innovation, digitalization challenges, and among others. Studies were selected based on predefined inclusion criteria, which included relevance to the topic, publication in peer-reviewed journals, and recency of publication. Exclusion criteria comprised studies not available in English, duplicate publications, and those lacking empirical evidence or substantial theoretical contributions. A total of 64 studies were identified and included in the review process. The synthesis and analysis of findings were carried out by systematically categorizing and comparing insights from various publications and authors, allowing for a comprehensive understanding of the complexities and nuances surrounding digital transformation in business contexts.

This article will be structured as follows: Firstly, we will clarify the notion of digitalization through a literature review, then, we will present the components of the digitalization phenomenon, and finally, we will point out the main advantages and limits of the digitalization of businesses.

2. Definition and components of digitalization

2.1. Digitalization's definition

The digitalization of companies involves incorporating digital technologies and solutions across all facets of a business or organization (Elhamma and El-moumane, 2023). This evolution entails leveraging digital tools, technologies, and data to optimize business operations, boost efficiency, and align with the evolving digital landscape. It encompasses aspects like operations, communication, customer engagement, marketing, and the broader spectrum of business processes.

The industrial management literature defines digitalization as the phenomenon of intelligent connected machines that information and digital technologies power (Lenka et al .2017).

Digitalization is defined as the use of digital technologies and of data in order to create revenue, improve business, replace/transform business processes, and create an environment for digital business, whereby digital information is at the core (Clerck, 2017).

Digitalization is the growing application of ICT across the economy "encompassing a range of digital technologies, concepts and trends such as

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artificial intelligence, the “Internet of Things” (IoT) and the “Fourth Industrial Revolution” (Morley et al. 2018).

Digital transformation is the combined effects of several digital innovations bringing about novel actors (and actor constellations), structures, practices, values, and beliefs that change, threaten, replace, or complement existing rules of the game within organizations, ecosystems, industries, or fields (Hinings et al. 2018).

Digitalization is the process of spreading a general-purpose technology. The last similar phenomenon was electrification. Digitalization of products and services shortens distances between people and things. It increases mobility. It makes network effects decisive. It allows the use of specific data to such an extent that it permits the satisfaction of individual customer needs – be it consumers or businesses. It opens up ample opportunities for innovation, investment, and the creation of new businesses and jobs. Going forward it will be one of the main drivers of sustainable growth (Devereux and Vella, 2018).

The concept of "digital transformation" is derived from the broader notion of "digitalization", which refers to the utilization of digital technologies to drive business innovation and generate new sources of revenue and value (Kohtamäki et al .2019).

The term "digital transformation" encompasses much more than simply incorporating new technologies. It represents a fundamental shift in business models, encompassing a change in approach to internal and external processes. To fully realize the benefits of digitalization, companies must cultivate new skills, foster a supportive corporate culture, and adopt innovative organizational and operational models (Eller et al .2020).

The advantages of digital transformation are substantial, encompassing heightened efficiency, speed, and quality of work, along with cost reductions, enhanced asset utilization, and overall business efficacy.

Digitalization offers tremendous opportunities for improving efficiency, speed, and quality of work, reducing costs, enhancing asset utilization, and optimizing the use of raw materials, labor, and other key aspects of business performance. It is a complex phenomenon that encompasses various levels, including digital entrepreneurship, digital strategies, digital processes, and digital education (Kraus et al .2019). furthermore, orchestrating a successful digitalization effort can be challenging, as it requires restructuring existing processes, realigning strategic goals, and adjusting organizational structures (Hinings et al .2018).

Digitalization is considered the set of changes that digital technology causes or influences in all aspects of human life (Benkaraache and Ghanouane, 2020)

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The term “digitalization” goes beyond simply digitization (Apte and Nerlekar, 2020) although digitization typically refers to the straightforward conversion of analog information into digital form, the terms "digital transformation" and "digitalization" are often used interchangeably and encompass a wider array of political, commercial, and social issues. They refer to the integration of innovative digital technologies related to the Internet into a company's operations (Benkaraache and Ghanouane, 2020).

Research emphasizes that Digitalization should be included in the existing business perspectives, as this topic addresses much more than just technological shifts (Bouncken et al . 2021).

The combination of various technologies, such as cloud technologies, sensors, big data, and 3D printing, enables the development of entirely new products and business models that incorporate digital services within physical products (Abou-foul et al .2021).

Several researchers from different disciplines have contributed to the evaluation of Digitalization and its opportunities and challenges (Burton-Jones et al. 2020; Hai et al. 2021). As digitalization reshapes industries, its impact extends beyond mere economic shifts to affect societies at large. Consequently, as the significance of digital transformation becomes increasingly evident, it also brings with it heightened expectations.

Digitalization is a process that affects all aspects of society and the economy, and there are several factors that contribute to its progress. Technological advancements, changes in consumer behavior, government policies and regulations, as well as increased access to the internet and the popularity of mobile devices, are all key factors in digitalization. Companies are also increasingly being driven to digitize to stay competitive, realize cost savings, and meet the demands of their customers (Ejbari and Bouali, 2022). Moreover, businesses must undertake a digital transformation project to ensure their survival in a constantly evolving world (Ejbari and Bouali, 2022). The digital freedom of access to products and information also risks leading to imitation and increased competition. As a result, companies are required to review their strategies to maintain their longevity and satisfy the changing expectations of their customers (Ejbari and Bouali, 2022).

Digital tools such as Social, Mobile, Analytics, and Cloud (SMAC) technologies are driving digitalization (Teubner and Stockinger, 2020), and offering opportunities to change the way in which firms work (Aström et al .2022). In accordance with (Chan et al .2022), Social networks provide market exposure for a company and foster connections with stakeholders. Mobile networks further link various actors within the business ecosystem and offer continuous access to learning and information from anywhere, anytime. Cloud technology enables accessibility, storage, and the exchange of pertinent information, along with workflow monitoring and remote collaboration.

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Lastly, analytics aids in comprehending business and customer requirements, identifying opportunities and market trends, and delivering personalized services and communications.

Digital technologies are therefore easily available to the firm and can improve its effectiveness in profitable ways (Chan et al . 2022), provided their introduction is accompanied by innovative business models or transformations of the traditional model (Aström et al. 2022). Nevertheless, an investigation must continue on the impact of new technologies on the decision-making process of the firm (Troise et al. 2022) and consumer privacy (Quach et al. 2022).

In a recent study, Witschel et al. (2022) demonstrated that the innovation of the business model is an effective way of continuing to be competitive in the digital era. To do so, these authors defended the role that dynamic capabilities play in the innovation of the business model, as well as contextual factors, leadership, and business mentalities. Although, Wen et al .(2022) affirmed that manufacturing firms with greater viability are more adaptable to Digitalization and tend to implement differentiated competitive strategies, for which reason they concluded that the effect of incentivizing innovation is greater for firms of higher viability.

The antecedents of Digital transformation (digital orientation, digital intensity, and digital maturity) were also analyzed to understand their influence on the financial success of firms (Nasiri et al .2022). Khan and Javaid (2022) considered that the IoT was a critical component of Industry 4.0, which improved product manufacturing efficiency because it was done with fewer errors and costs. Somohano-Rodríguez et al. (2022) analyzing the role that enabling digital Industry 4.0 (I4.0) technologies played in SME innovations, found that strategic planning advanced I4.0 and that enabling Information and Communication digital technologies promoted innovation more intensely than enabling digital technologies for integration and advanced robotics.

When transitioning processes from manual to digital, and with digitalization in place, machines become automated through the utilization of digital services such as Cloud computing, IoT, Big Data analytics, Database Analytics, Blockchain technology, and Smart machines. This integration allows machines to work in conjunction with humans, advancing automation while synchronizing with standardization. Advancements in robotics, artificial intelligence, and machine learning are ushering in a new era of automation, where machines can match or even surpass human performance across various domains. Automation offers businesses opportunities to enhance performance, quality, and speed while minimizing or eliminating errors. Additionally, it helps in reducing labor costs and fostering skill growth. In certain activities,

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the productivity and outcomes achieved through automation exceed human capabilities.

Therefore, within the framework of this paper, we understand the concept of digitalization as a comprehensive change in processes using innovative digital technologies, guided by a specific digital strategy, and supported by qualified digital capabilities, aimed at creating value and increasing business performance.

2.2. Digitalization's components

Digitalization represents a profoundly disruptive, ongoing, and intricate process. Organizations need to be agile and ready to surmount the challenges posed by this digital transformation swiftly to thrive in the contemporary market landscape (Morakanyane et al. 2017).

Digitalizing companies entails the transformation of conventional business processes, operations, and models through the incorporation of digital technologies. The table below summarizes the essential components of digitalization:

Table 1. The essential components of digitalization

Components	Definition
Digital Strategy	Firms require a well-defined digital strategy that outlines their objectives, initiatives, and roadmap for digital transformation, aligned with overall business goals (Weill and Woerner, 2018).
Data Analytics	and Business Intelligence: Utilizing analytics tools to derive insights from data, aiding in data-driven decision-making, understanding customer behavior, and enhancing operational efficiency.
Cloud Computing	Leveraging cloud services for storage, computing power, and software applications, offering scalability, flexibility, and cost-effectiveness.
Internet of Things (IoT)	Connecting physical devices to the internet for real-time monitoring, predictive maintenance, and process automation across industries.
Digital Customer Experience	Enhancing interactions through digital channels, including personalized marketing, self-service options, and seamless omnichannel experiences (Weill and Woerner, 2018).
Automation and Robotics	Implementing automation technologies to streamline tasks, reduce errors, and boost productivity.
Artificial Intelligence and Machine Learning	Integrating AI and ML algorithms for decision automation, personalized customer experiences, operational optimization, and data insights.
Cybersecurity	Deploying robust measures to safeguard digital assets, customer data, and sensitive information from cyber threats.

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Digital Talent Development	Investing in recruiting and upskilling employees with digital expertise.
Collaboration Tools and Platforms	Utilizing digital tools for communication, teamwork, and knowledge sharing.
Regulatory Compliance and Governance	Ensuring adherence to regulations and standards governing digital operations, data privacy, and cybersecurity.

Digitalization is an ongoing process, requiring companies to continuously adapt their strategies to leverage emerging technologies and maintain competitiveness in the digital era.

3. Advantages and limits of Digitalization

3.1. Advantages of digitalization in business

This article is poised to enrich our comprehension of the multifaceted benefits of digitalization in business, spanning from operational efficiency and customer experience to innovation, sustainability, and societal influence.
Jacobides et al .(2018) delved into the ways digital platforms facilitate collaboration within ecosystems, driving value co-creation, competitive advantage, and sustained business growth. Gupta et al .(2019) examined how digital technologies, like artificial intelligence and big data analytics, empower personalized customer experiences, targeted marketing, and operational efficiency, bolstering business success.

Chesbrough (2020) discussed open innovation in the digital age, stressing how digitalization encourages collaboration, knowledge sharing, and co-innovation among organizations, accelerating growth and market leadership. Moreover, Smith et al. (2019) explored how digitalization enhances operational efficiency and cost reduction through automation and data-driven decision-making.

Additionally, Chen (2020) investigated how digitalization drives market expansion and internationalization for businesses via e-commerce platforms and digital marketing strategies. Furthermore, Gupta et al. (2020) analyzed how digitalization elevates customer experiences and loyalty through personalized interactions, targeted advertising, and seamless omnichannel engagement.

Lee and Park (2020) highlighted the benefits of digitalization in supply chain management, emphasizing real-time tracking, inventory optimization, and demand forecasting enabled by IoT and AI technologies. Similarly, Wang and Li (2021) discussed the strategic advantages of digital transformation in fostering innovation and agility, enabling rapid adaptation to market changes and capitalization on emerging opportunities. In addition, Zhou et al. (2021) examined the environmental sustainability benefits of digitalization, including

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reduced paper consumption, minimized travel through remote collaboration tools, and optimized energy usage via smart building technologies. Moreover, Kim et al. (2021) investigated how digitalization enhances employee productivity and satisfaction through remote work capabilities, flexible scheduling, and digital training programs.

Lastly, Kim et al. (2021) explored digitalization's advantages in risk management and compliance, showcasing how advanced analytics and AI systems bolster fraud detection, regulatory compliance, and cybersecurity. Furthermore, Li and Wang (2021) analyzed the societal impact of digitalization, emphasizing its role in bridging socioeconomic disparities, promoting digital inclusion, and fostering economic growth through digital skills development and entrepreneurship.

We have previously highlighted the transformative impact of digitalization on the business landscape. Now, let us delve into specific advancements and their advantages:

- Enhanced Operational Efficiency:
    - Digital technologies streamline workflows, minimizing errors and boosting operational efficiency.
    - This streamlined approach translates to cost savings, as operations are executed with greater precision.
- Secure Cloud-Based Data Storage:
    - Cloud storage has become standard practice for businesses, offering secure data management.
    - Major players like Microsoft and Google provide high-security cloud services, ensuring robust digital asset management.
- Empowerment through Data Analysis:
    - Digital technologies enable sophisticated data analysis tools like Google Analytics.
    - These tools are indispensable for modern businesses, facilitating informed decision-making and driving growth.

These advancements underscore the myriad benefits of digitalization, from heightened productivity and efficiency to enhanced innovation and customer experiences. In today's digital age, embracing these changes isn't just a trend but a necessity dictated by contemporary realities.

Additionally, here are some other benefits of digitalization:

1. Time and Cost Savings:
    - Digitizing documents and processes reduces operational costs and eliminates errors.
    - Automation frees up time for complex tasks while promoting eco-friendly practices by reducing paperwork.
2. Enhanced Customer Experience:

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- Online payment options and streamlined processes enhance convenience for customers.
- Automation decreases order processing time, leading to higher customer satisfaction and increased orders.

3. Innovation:
    - Digital platforms offer creative tools for business improvement and product expansion.
4. Improved Productivity:
    - Digital tools like Mailshake streamline processes, saving time and ensuring accuracy.
5. Global Reach:
    - Digitalization removes geographical barriers, allowing businesses to reach customers worldwide.
6. Increased Profits:
    - Statistics from organizations like SAP Center for Business Insights and Oxford Economics indicate a significant boost in profits post-digital transformation.
7. Agility:
    - Digitalization enables faster innovation and adaptation to market changes, enhancing business agility.
8. Brand Building:
    - Online presence facilitates brand identity establishment and recognition through digital marketing tools.
9. Expanded Target Audience:
    - Websites and mobile apps broaden the reach of businesses, tapping into diverse demographics and markets.

However, certain challenges such as siloed decision-making and reliance on legacy systems hinder digital transformation efforts. Overcoming these obstacles is crucial for businesses to fully leverage the benefits of digitalization and thrive in the digital era.

3.2. Limits of digitalization in business:

Digitalization represents a profoundly disruptive, ongoing, and intricate process. Organizations need to be agile and ready to surmount the challenges posed by this digital transformation swiftly to thrive in the contemporary market landscape (Morakanyane et al .2017).

Digital transformation heralds a paradigm shift, transcending mere technological upgrades to redefine the essence of business operations. Consequently, as organizations embark on this transformative journey, they must meticulously assess various dimensions, including stakeholder reactions, customer impacts, financial considerations, and strategic alignment. Through

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such endeavors, companies not only fortify their competitive edge but also chart a course toward future growth and expansion. However, navigating this transformation is fraught with multifaceted challenges. Analyses of workforce dynamics underscore concerns about heightened unemployment and exacerbated income disparities arising from technological advancements. These challenges are compounded by the risks associated with digitalization, spanning data breaches, cyber threats, and privacy infringements, which erode consumer trust and tarnish brand reputations. Moreover, discussions surrounding digitalization's limitations in ensuring equitable access reveal persistent disparities in internet connectivity and digital literacy, particularly among marginalized communities. Similarly, assessments of its impact on supply chain management unveil vulnerabilities to cyber threats, operational disruptions, and overreliance on digital platforms. Consequently, addressing these challenges necessitates a comprehensive approach that prioritizes responsible digital transformation.

The challenges of digitalization are multifaceted and warrant comprehensive examination. Chen et al. (2019) explored the impact on the workforce, highlighting the potential for increased unemployment and income inequality due to job displacement and automation. Moreover, Kopalle et al. (2021) delved into the risks associated with digitalization, including data breaches, cyberattacks, and privacy concerns, which undermine consumer trust and brand reputation. Furthermore, Zhang and Lu (2020) discussed the limitations in achieving equitable access to technology, especially in marginalized communities with limited internet connectivity and digital literacy. Lee and Park (2020) analyzed the downsides in supply chain management, such as increased vulnerability to cyber threats and disruptions from system failures. Additionally, Chen and Tian (2021) examined the challenges in organizational culture and change management, highlighting employee resistance and cultural barriers to integrating digital technologies. Moreover, Wang and Li (2021) explored the environmental impacts, such as increased energy consumption and electronic waste generation. Lastly, Kim et al .(2021) investigated the limits in customer relationships, including depersonalized interactions and concerns about data privacy. Additionally, Li and Zhang (2021) discussed regulatory challenges, including antitrust concerns and the need for ethical standards. Lastly, Kim et al .(2021) analyzed the social implications, including social isolation and the digital divide.

One of the main drawbacks of undergoing digital transformation is the potential rise in complexity and fragmentation. For instance, as businesses transition away from traditional methods, they often embrace various new technologies, leading to a more intricate overall system. Moreover, the piecemeal adoption of these technologies can further fragment systems, with data fragmentation being a significant hurdle. Nevertheless, digital

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transformation offers an opportunity to tackle these issues by identifying disparate systems and fostering a more integrated approach to technology utilization. For instance, many companies leverage AI and automated data management to consolidate their technology stack and establish a more cohesive data architecture. Thus, while integrating new technology and managing data from diverse sources can introduce complexity, a primary advantage of digital transformation lies in centralizing and simplifying these systems.

Another drawback is the lack of standardization across different industries. Due to the novelty of digital transformation, there are no universally accepted standards for its implementation. This absence of standardization complicates comparisons between solutions and vendors, making it challenging for businesses to determine the optimal approach. However, this lack of standardization also fosters creativity and flexibility in finding tailored solutions that suit individual business needs. Digital transformation is inherently adaptable, allowing businesses to tailor their approach based on factors such as size, digital maturity, and specific requirements.

High costs are often perceived as a significant disadvantage of digital transformation. Investments in new hardware, software, and employee training can accumulate expenses. Additionally, reassessing existing processes and procedures incurs costs associated with evaluation and modification. However, digital transformation doesn't necessarily have to be prohibitively expensive. Incremental approaches enable conservative technology investments, yielding returns from early-stage innovations. By adopting a phased approach, businesses can identify opportunities to reduce costs, such as centralizing technology, automating processes, and migrating to cloud solutions.

There is also a risk of failure associated with digital transformation due to the substantial changes it entails. Implementing new technologies or altering processes can lead to unexpected challenges and financial losses if initiatives fall short. Mitigating this risk involves understanding common failure points, preparing for challenges, and maintaining flexibility. Businesses should identify transformational needs, acquire necessary skills, test technologies before deployment, and promote a digital-first culture to minimize failure risks.

Digital transformation can disrupt employees by requiring them to acquire new skills and adapt to changes in work processes. Furthermore, technological advancements may render some roles redundant, causing stress and anxiety. Transparent communication and providing opportunities for training and advancement can alleviate these concerns and foster a smoother transition for employees.

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Loss of customer trust is another potential drawback of digital transformation. Changes to systems or processes may unsettle customers, leading them to seek alternatives. Maintaining trust requires transparent communication about transformation goals and benefits. By prioritizing customer needs, businesses can leverage technology and data management to enhance the overall customer experience.

Finally, digital transformation increases the risk of data breaches and cyberattacks as businesses store and share more data electronically. Robust cybersecurity measures, including employee training and investment in security technologies, are essential to mitigate these risks. However, hasty cybersecurity investments without proper assessment can exacerbate issues such as complexity and costs.

Conclusion

In conclusion, the literature reviewed provides a multifaceted understanding of business digitalization, encompassing various definitions, boundaries, and advantages. Through this review, it becomes evident that digitalization is not merely a technological shift but a comprehensive transformation that reshapes organizational structures, processes, and strategies. One key finding is the diversity of definitions surrounding digitalization, reflecting its complex and evolving nature. While some scholars emphasize the adoption of digital technologies, others highlight broader organizational changes and cultural shifts. Despite these differences, a common thread emerges: digitalization entails leveraging technology to enhance efficiency, innovation, and competitiveness.

Moreover, this review underscores the importance of recognizing the limits and challenges associated with digitalization. From concerns about data privacy and cybersecurity to the risk of job displacement, businesses must navigate various obstacles on their digital transformation journey. Understanding these limitations is crucial for developing effective strategies and mitigating potential risks. In light of these findings, it is clear that business digitalization is not a one-size-fits-all endeavor. Instead, it requires careful consideration of organizational goals, resources, and capabilities.

Moving forward, further research is needed to address emerging trends and challenges in business digitalization. From the rise of artificial intelligence and machine learning to the growing importance of data ethics and governance, there are numerous avenues for future exploration. By staying abreast of these developments and fostering a culture of innovation, businesses can continue to thrive in an increasingly digital world. This article provides a clear understanding of Digitalization foundations in regard to the advancements achieved in the last few years: on the one hand, the developments achieved in the service industry are being made in combination

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with synergies between digital services and other new technologies, such as AI or IoT; on the manufacturing domain, companies are also pursuing new venues in finding competitive advantages by applying innovative digital practices on their industrial process (e.g. servitization strategies). Moreover, several authors have concluded that additional debate on the digitalization agenda is needed, to further develop a deeper understanding of how digital initiatives are changing existing business models.

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References:

1. Abou-Foul, M., Ruiz-Alba, J. L., & Soares, A. (2021) The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis. Production Planning & Control, 32(12), 975-989.
2. Abriane, A., Rachid, Z. I. K. Y., & Bahida, H. (2021) Les déterminants de l'adoption de la digitalisation par les entreprises : Revue de littérature. Revue Française d'Economie et de Gestion, 2(10).
3. Apte, M. I., & Nerlekar, V. (2020) Literature Review on Study of Impact of Digitalization on Financial Performance of Urban Co-operative Banks.
4. Arnold, C., Kiel, D. , & Voigt, K.-I. (2016) "*How the Industrial Internet of Things changes business models in different manufacturing industries*", International Journal of Innovation Management, Vol. 20 No. 8, pp. 1640015-1-1640015-25.
5. Aström, J., Reim ,W., & Parida ,V. (2022) Value creation and value capture for AI business model innovation: a three–phase process framework. Rev Manag Sci 16:2111–2133.
6. Awan ,U., Sroufe ,R., & Shahbaz ,M. (2021) Industry 4.0 and the circular economy: a literature review and recommendations for future research. Bus Strat Environ 30(4):2038–2060.
7. Benkaraache, T., & Ghanouane, K. (2020) Modèle théorique d'évaluation de l'apport de la transformation digitale à la chaîne de valeur des entreprises. Revue Internationale des Sciences de Gestion, 3(2).
8. Boitan, IA ., & Stefoni, SE. (2022) Digitalization and the shadow economy; impact assessment and policy implications for EU countries. East. Eur Econ Early Access: Jul 2022.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

9. Bouali, J., & Ejbari, R. (2022) La transformation digitale des entreprises : Proposition d'un cadre théorique global de compréhension. International Journal of Accounting, Finance, Auditing, Management and Economics, 3(1-1), 348-366.
10. Bouncken, R. B., Kraus, S., & Roig-Tierno, N. (2021) Knowledge-and innovation-based business models for future growth: Digitalized business models and portfolio considerations. *Review of Managerial Science*, 15(1), 1–14.
11. Bouwman, H., de Reuver, M. & Shahrokh, N. (2017) "*The impact of digitalization on business models: how IT artefacts, social media, and big data force firms to innovate their business model*", 14th International Telecommunications Society (ITS) Asia-Pacific Regional Conference, Kyoto, June 24-27.
12. Bresciani ,S. (2018) The management of organizational ambidexterity through alliances in a new context of analysis: Internet of Things (IoT) smart city projects Technological Forecasting and Social Change.
13. Burton-Jones ,A. , Akhlaghpour ,S. , Ayre , S., Barde ; P., Staib , A. , & Sullivan ,C. (2020) Changing the conversation on evaluating digital transformation in healthcare: Insights from an institutional analysis. *Information and Organization*, 30(1), 100255.
14. Chan, YE., Krishnamurthy,R., & Sadreddin, A. (2022) Digitally-enabled university incubation processes. Technovation 118:102560.
15. Chen, C., Zhu, L., Zhong, H., Liu, C., Wu, M., & Zeng, H. (2019) Practical innovation of Chinese enterprises from "digital survival" view. J. Manag. Sci. China 22 (10), 1–8.
16. Chen ,H.Y. , Das, A. , & Ivanov , D. (2019) Building resilience and managing post-disruption supply chain recovery: lessons from the information and communication technology industry Int. J. Inf.Manag., 49 , pp. 330-342.
17. Chen, Y. (2020) Improving market performance in the digital economy China Economic Review.
18. Chen, Q., & Tian, H. (2021) Impact mechanism of import competition on the development quality of Chinese manufacturing: Based on the mediating effect of innovation. Inq. into Econ. Issues (09), 130–142.
19. Cherkasova, V. A., & Slepushenko, G. A. (2021) The impact of digitalization on the financial performance of Russian companies. Finance : Theory and practice, 25(2), 128- 142.
20. Chesbrough, H. (2020) To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective. Industrial Marketing Management, 88, 410–413.
21. Clerck, J. (2017). Digitalization, Digital Transformation: The Differences. i-SCOOP .

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

22. Crittenden, W., Biel, I., Lovely III, W (2019) Embracing digitalization: student learning and new technologies. J. Mark. Educ. 41(1), 5–14 .
23. Denicolai, S., Zucchella, A., & Magnani, G. (2021) Internationalization, digitalization, and sustainability: Are SMEs ready A survey on synergies and substituting effects among growth paths. Technological Forecasting and Social Change, 166, 120650.
24. Devereux, M., &Vella, J. (2018) Debate: implications of digitalization for international corporate tax reform. Intertax 46(6), 550–559 .
25. Donthu N., Kumar S., & Pattnaik , D. (2020) Forty-five years of journal of business research: A bibliometric analysis. *Journal of Business Research*, 109, 1–14.
26. Efimov, V., & Lapteva, A. (2018) The future of universities: is digitalization the priority J. Sib. Fed. Univ. Humanit. Soc. Sci. 11(12), 1925–1946 22.
27. Elhamma , A. (2023) Digitalisation et Incertitude environnementale : cas du contrôle de gestion des entreprises marocaines, Revue Economie, Gestion et Société, Vol. 1, n°39.
28. Elhamma, A. & El-moumane, R. (2023) Impact of Firm Size on Digitalization of Management Control: Evidence from Morocco, International Journal of Management, Accounting and Economics, Volume 10, Issue 6, pp.412-424.
29. Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020) Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. Journal of Business Research, 112, 119-127.
30. Fernández-Portillo, A., Almodóvar-González, M., Sánchez-Escobedo, M. C., & CocaPérez, J. L. (2022) The role of innovation in the relationship between digitalisation and economic and financial performance. Company-level research. European Research on Management and Business Economics, 28(3), 100190.
31. Ghobakhloo, M. (2018) The future of manufacturing industry: A strategic roadmap toward Industry 4.0-Journal of Manufacturing Technology Management.
32. Gobble, M. (2018) Digitalization, digitization, and innovation. Res. Technol. Manag. 61(4), 56–59.
33. Gupta, S., Chen, H. Z., Hazen, B. T., Kaur, S., & Gonzalez, E. D. R. S. (2019) Circular economy and big data analytics: A stakeholder perspective. Technological Forecasting and Social Change, 144, 466–474.
34. Hai, T. N., Van, Q. N., Thi Tuyet, M. N. (2021) Digital transformation: Opportunities and challenges for leaders in the emerging countries in response to Covid-19 pandemic. *Emerging Science Journal*, 5, 21–36.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

35. Henriette, E., Feki, M., & Boughzala, I. (2015) The shape of digital transformation: a systematic literature review. In: Proceedings of the Mediterranean Conference on Information Systems, MCIS 2015, pp. 431–443. AISeL Press.
36. Hinings, B., Gegenhuber, T., & Greenwood, R. (2018) Digital innovation and transformation: An institutional perspective. Information and Organization, 28(1), 52- 61.
37. Jacobides ,M., Cennamo ,C., & Gawer ,A. (2018) Towards a theory of ecosystems. Strat Manag J 39:2255–2276.
38. Javaid, M., & Khan, I.H., (2022) "Exploring contributions of drones towards Industry 4.0", *Industrial Robot*, Vol. 49 No. 3, pp. 476-490.
39. Ji, C., Y. Li, W.,Qiu, U., & Li ,K. (2012) Big Data Processing in Cloud Computing Environments. In 2012 12th International Symposium on Pervasive Systems, Algorithms and Networks (ISPAN), 17–23. IEEE.
40. Kim J., Giroux M,Choi Y. K., Gonzalez-Jimenez H., Lee J. C., Park J., & Jang S., . (2021) The moderating role of childhood socioeconomic status on the impact of nudging on the perceived threat of coronavirus and stockpiling intention. *Journal of Retailing and Consumer Services*, 59, 102362.
41. Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., & Baines, T. (2019) Digital servitization business models in ecosystems: A theory of the firm. Journal of Business Research, 104, 380-392.
42. Kopalle, P., Kumar ,V., & Subramaniam , M. (2020) How legacy frms can embrace the digital ecosystem via digital customer orientation. J Acad Market Sci 48:114–131.
43. Kraus, S., Roig-Tierno, N., & Bouncken, R. B. (2019) Digital innovation and venturing: An introduction into the digitalization of entrepreneurship. Review of Managerial Science, 13(3), 519-528.
44. Lenka, S., Parida, V. & Wincent, J. (2017) Digitalization capabilities as enablers of value co-creation in servitizing firms. Psychol. Market. 34(1), 92–100 .
45. Li ,H., & Wang ,Y. (2021) Organisational mindfulness towards digital transformation as a prerequisite of information processing capability to achieve market agility. J Bus Res 122:700–712.
46. López-Rubio P., Roig-Tierno N., & Mas-Verdú F. (2021) Assessing the origins, evolution and prospects of national innovation systems. *Journal of the Knowledge Economy*.
47. Morakanyane, R., Grace, A. A., & O'reilly, P. (2017) Conceptualizing digital transformation in business organizations: A systematic review of literature.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

48. Morley, J., Widdicks, K., & Hazas, M. (2018) Digitalisation, energy and data demand: the impact of internet traffic on overall and peak electricity consumption. Energy Res. Soc. Sci. 38(1), 128–137 .
49. Nadkarni, S., & Prügl, R. (2021) Digital transformation: a review, synthesis and opportunities for future research. Management Review Quarterly, 71, 233-341.
50. Nasiri ,M., Saunila ,M., Ukko J .(2022) Digital orientation, digital maturity, and digital intensity: determinants of fnancial success in digital transformation settings. Int J Oper Prod Manage 42(13):274–298.
51. Nasser, T., & Tariq ,R. S.(2015) "Big Data Challenges." *Journal of Computer Engineering & Information Technology* 4 (3): 1–10.
52. Parida, V., Sjödin, D., & Reim, W. (2019) Reviewing literature on digitalization, business model innovation, and sustainable industry: past achievements and future promises. Sustainability 11(2), 391-1–391-18 .
53. Park ,J., Lee, J. (2020) Nudging to reduce the perceived threat of coronavirus and stockpiling intention. *Journal of Advertising*, 49(5), 633–647.
54. Parviainen P., Tihinen M., Kääriäinen J., & Teppola S. (2017) Tackling the digitalization challenge: How to benefit from digitalization in practice. *International Journal of Information Systems and Project Management*, 5(1), 63–77.
55. Quach ,S., Thaichon ,P., Martin ,KD., Eaven ,S., & Palmatier, RW. (2022) Digital technologies: tensions in privacy and data. J Acad Market Sci 50(6):1299–1323.
56. Reis, J., Amorim, M., Melão, N., & Matos, P. (2018) Digital transformation: a literature review and guidelines for future research. Trends and Advances in Information Systems and Technologies : Volume 1 6, 411-421.
57. Rondero, C.L., Martinez-Flores, J.L., Smith, N.R., Morales, S.O.C., & Aldrette Malacara, A. (2019) Digital supply chain model in Industry 4.0. J. Manuf. Technol. Manag.
58. Somohano-Rodríguez ,FM., Madrid-Guijarro, A., & Lopez-Fernandez ,JM. (2022) Does industry 4.0 really matter for SME innovation J Small Bus Manage 60(4):1001–1028.
59. Teubner ,RA., & Stockhinger ,J. (2020) Literature review: understanding information systems strategy in the digital era. J Strat Inform Syst 29:101642.
60. Tozanlı, Ö.; Kongar, E. & Gupta, S.M. (2020) Trade-in-to-upgrade as a marketing strategy in disassembly-to-order systems at the edge of blockchain technology. Int. J. Prod. Res. 1–18.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

61. Troise ,C., Tani ,M., Matricano ,D., & Ferrara ,E. (2022) Guest editorial: Digital transformation, strategies management and entrepreneurial process: dynamics, challenges and opportunities. J Strat Manage 15(3):329–334.
62. Truant, E., Broccardo, L., & Dana, L. P. (2021) Digitalisation boosts company performance: an overview of Italian listed companies. Technological Forecasting and Social Change, 173, 121173.
63. Valenduc, G., & Vendramin, P. (2017) Digitalisation, between disruption and evolution. Transf.: Eur. Rev. Labour Res. 23(2), 121–134 .
64. Weill, P.,& Woerner, S.L. (2018) What's Your Digital Business Model?: Six Questions to Help You Build the Next-Generation Enterprise (Boston, Harvard Business Review Press).
65. Wen , HW., Zhong ,Om., & Lee, CC. (2022) Digitalization, competition strategy and corporate innovation: evidence from Chines manufacturing listed companies. Int Rev Financial Anal 82:102166.
66. Wiech, M., Boffelli, A., Elbe, C., Carminati, P., Friedli, T., & Kalchschmidt, M. (2022). Implementation of big data analytics and Manufacturing Execution Systems: an empirical analysis in German-speaking countries. Production Planning & Control, 33(2-3), 261-276.
67. Witschel, D., Baumann, D., & Voigt, KI. (2022) How manufacturing firms navigate through stormy waters of digitalization: the role of dynamic capabilities, organizational factors and environmental turbulence for business model innovation. J Manage Organization 28(3):681–714.
68. Zhou, D., Kautonen, M., Dai, W., & Zhang, H. (2021) Exploring how digitalization influences incumbents in financial services: The role of entrepreneurial orientation, firm assets, and organizational legitimacy. Technological Forecasting and Social Change, 173, 121120.

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1. https://hbr.org/2021 / HARVARD BUSINESS REVIEW
2. https://journals.sagepub.com/doi/full/10.1177/21582440211047576
3. https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-digital-transformation
4. www.sciencedirect.com