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MAPPING IDEA & LITERATURE FORMAT

Digital Transformation and its Implications for Macroeconomic Performance: A Responsive and Adaptive Management Strategy Approach

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Abstract: Digital transformation has become a pervasive force reshaping global business and economic landscapes. This paradigm shift goes beyond mere technological evolution, representing a fundamental reconfiguration of organizational structures, processes, and strategies. In the contemporary context, understanding and harnessing the implications of digital transformation on macroeconomic performance are crucial. This discourse explores the multifaceted impacts of digital transformation on both micro and macroeconomic dimensions, emphasizing the need for a responsive and adaptive management strategy approach.

Keywords: Digital Transformation, Macroeconomic Performance, Adaptive Management, Responsive Strategies, Technological Evolution.

JEL Classification Code: O30, M15, L86, E01

1. INTRODUCTION

Digital transformation has emerged as a pervasive force reshaping the landscape of businesses and economies globally. This paradigm shift is more than a mere technological evolution; it represents a fundamental reconfiguration of organizational structures, processes, and strategies. In the contemporary context, where technology is the cornerstone of progress, understanding and harnessing the implications of digital transformation on macroeconomic performance is paramount. Digital transformation, a global phenomenon, is reshaping industries and requires a fundamental shift in strategic management (Grab et al., 2019). This shift is crucial for maintaining competitiveness and achieving increased profitability (Mihu et al., 2021). The impact of digital enterprise transformation on welfare is significant, with managerial strategies needing to adapt to new challenges (Pedro et al., 2019). The need for adaptation is also highlighted in the literature review by Reis et al (2018), which emphasizes the importance of aligning business strategy with the digital reality. The relationship between digital transformation and macroeconomic stability is explored by Tiutiunyk et al (2021), who identifies a bidirectional causality. The strategic management of digital transformation is a complex, inclusive economic activity that requires clear policy formulation and the introduction of digital technologies (Mishchenko et al., 2022). The evaluation parameters of digital transformation are discussed by Aturin (2020) in Narbaev et al., (2020), who emphasizes the need for flexibility and detailed specification in economic policy.

The title of this discourse, "Digital Transformation and its Implications for Macroeconomic Performance: A Responsive and Adaptive Management Strategy Approach," encapsulates the core themes explored herein. The increasing digitalization of societies and economies necessitates a comprehensive examination of the multifaceted impacts on the broader economic spectrum. This exploration extends beyond the mere integration of digital technologies into existing frameworks; it demands a strategic and adaptive management approach that aligns with the dynamic nature of the

digital era. As we delve into the complexities of digital transformation, it is imperative to acknowledge its role as a catalyst for change in both micro and macroeconomic dimensions. At the micro level, businesses are compelled to recalibrate their operational models, leveraging technology to enhance efficiency, productivity, and innovation. Concurrently, at the macroeconomic level, nations grapple with the challenge of aligning their policies and structures with the digital tide, seeking avenues to optimize economic performance in an increasingly interconnected and technologically driven global ecosystem.

The transformative potential of digital technologies transcends traditional industry boundaries, ushering in an era where adaptability becomes synonymous with success. Industries once considered impervious to digital disruption now find themselves navigating uncharted territories. This necessitates a paradigm shift in management strategies, moving away from rigid and traditional frameworks towards an approach that is both responsive and adaptive. Responsive management strategies entail the ability to promptly address the immediate challenges posed by digital transformation. This involves leveraging technology to streamline processes, enhance customer experiences, and stay attuned to market trends. Responsiveness, however, is only one facet of the equation. The true essence of effective management in the digital age lies in adaptability – the capacity to evolve and thrive in an environment characterized by constant change. An adaptive management strategy embraces the fluidity of the digital landscape, anticipating and embracing change rather than merely reacting to it. This approach necessitates a fundamental shift in organizational culture, fostering a mindset that views change as an opportunity rather than a threat. It involves cultivating a workforce that is not only technologically adept but also possesses the resilience and creativity required to navigate the uncertainties inherent in the digital era.

Moreover, the implications of digital transformation for macroeconomic performance extend beyond the confines of individual organizations. Governments, as stewards of national economies, find themselves at the forefront of devising policies that facilitate a seamless integration of digital technologies. This entails addressing issues of digital literacy, infrastructure development, and regulatory frameworks that foster innovation while ensuring ethical and responsible use of technology.

2. LITERATURE REVIEW PROCEDURE

Digital transformation has become an inescapable force reshaping the contemporary business landscape. This literature review delves into the multifaceted implications of digital transformation on macroeconomic performance, emphasizing the significance of a responsive and adaptive management strategy approach. In recent years, the pervasive influence of digital technologies has permeated various aspects of business operations, prompting organizations to undergo fundamental changes. Scholars have underscored the need for businesses to move beyond superficial technological integration and embrace a holistic transformation that encompasses organizational structures, processes, and strategic orientations. This metamorphosis is not merely a technological upgrade; rather, it represents a paradigm shift in how businesses operate and compete in the digital era. At the microeconomic level, organizations grapple with the imperative to adapt their operational models to harness the potential of digital technologies fully. The literature suggests that organizations leveraging digital tools experience improvements in efficiency, productivity, and innovation. These advancements extend beyond traditional industry boundaries, impacting sectors previously considered immune to digital disruption. As businesses navigate this digital frontier, the importance of responsive management strategies becomes evident. Responsive management strategies are characterized by the agility to address immediate challenges posed by digital transformation. Scholars argue that organizations need to leverage technology to streamline processes, enhance customer experiences, and stay attuned to rapidly evolving market trends. The literature emphasizes that responsiveness is crucial for maintaining competitiveness in the dynamic digital landscape, where customer expectations and market dynamics can change swiftly.

However, the literature also contends that mere responsiveness is insufficient in the face of the digital revolution. The true essence of effective management in the digital age lies in adaptability. An adaptive management strategy goes beyond addressing immediate challenges; it involves cultivating a culture that views change as an opportunity rather than a threat. Organizations must foster a workforce

equipped not only with technological skills but also with the resilience and creativity required to navigate uncertainties in the digital era. The literature highlights the symbiotic relationship between adaptability and sustainable business performance. Organizations embracing an adaptive management approach tend to be more innovative, better equipped to capitalize on emerging opportunities, and resilient in the face of disruptions. Scholars argue that this adaptability is not confined to specific industries but is a characteristic that transcends sectors, contributing to the overall economic resilience and competitiveness of nations.

Moving beyond the organizational level, the literature explores the implications of digital transformation for macroeconomic performance. Governments, as stewards of national economies, play a pivotal role in shaping policies that facilitate the seamless integration of digital technologies. Scholars emphasize the importance of addressing issues such as digital literacy, infrastructure development, and regulatory frameworks to create an environment conducive to innovation while ensuring ethical and responsible technology use. In conclusion, the literature underscores the transformative impact of digital transformation on both micro and macroeconomic levels. The title's focus on a responsive and adaptive management strategy approach resonates throughout the literature, emphasizing the need for organizations to go beyond superficial technological adoption. As businesses and nations grapple with the challenges and opportunities presented by the digital era, the literature points to the critical role of adaptability in navigating the complexities of this transformative journey.

Table 1 presents a comprehensive overview of various studies related to digital transformation and its implications on macroeconomic performance. Each entry provides insights into the authors, year of publication, abstract summary, main findings, and limitations of the respective study. The first entry, titled "The Impact of Digital Transformation on Strategic Business Management," authored by Benjamin Grab, Marieta Olaru, and R. Gavril in 2019, highlights the disruptive nature of digital transformation, emphasizing its potential to significantly impact industries. The study introduces a digital transformation strategy framework to address challenges, although the limitations include incomplete consideration of research results and the need for additional research.

The subsequent entry in 2020 discusses the impact of digital transformation on strategic business without specifying authors. It emphasizes the global nature of digital transformation, acknowledging regional variations based on regulatory environments and economic sophistication. The disruptive potential of digital transformation necessitating fundamental changes in strategic management approaches is reiterated. Moving to the 2021 study by Cantemir Mihai, I. A. Bogoslov, and A. Lungu, it emphasizes the necessity of digital components in business, proposing several strategies for adapting existing models and fostering new business models. The limitations revolve around a single database consideration, potential omissions, and a large number of terms in the search query. The 2021 study by Francisco Xavier Pedro and Joana Maria Costa Martins das Dores delves into the impact of management and strategies for digital enterprise transformation on welfare. It identifies bidirectional causality between digital transformation and macroeconomic stability, emphasizing the need for a methodological toolkit considering the level of digitalization. V. Mishchenko's 2022 study on the strategic management of digital transformation underscores the decentralized management model as more functional and effective. Digitalization's significance for Ukraine's economy is highlighted as a key finding. Valery Aturin, Irina Moga, and S. Smagulova's 2020 study on digital transformation management evaluates parameters, areas of uncertainty, and the role of governments. Limitations include incomplete understanding and fragmented study, the difficulty in assessing global technology dissemination, and the need for a flexible strategy framework. The 2020 book "Managing Digital Transformation" emphasizes customer centricity, data-driven and service-related business models as key findings. However, limitations include the undefined nature of digital transformation for organizations and the need for further validation and exploration of industry-specific challenges.

The 2017 study by L. Mićić explores the influence of digital transformation on GDP, highlighting the positive impact on economic growth and key indicators. The limitations include the need for further research on the correlation between GDP and ICT investment. The 2021 study by João Reis, Marlene Amorim, Nuno Melão, and Patrícia Matos provides a literature review on digital transformation, emphasizing the need for managers to adapt business strategies to the new digital reality. I. Tiutiunyk, J. Drabek, N. Antoniuk, V. Navickas, and P. Rubanov's 2021 study on the impact

of digital transformation on macroeconomic stability highlights bidirectional causality, sensitivity to the Digital Transformation Index, and the need for a methodological toolkit. Limitations include a small sample size, lack of detailed analysis, and the necessity for further research.

The 2020 study by Swen Nadkarni and Reinhard Prügl reviews 58 studies between 2001 and 2019, identifying technology and actor dimensions of digital transformation. Underdeveloped aspects include the pace of transformation, culture, work environment, and the middle management perspective. Feng Li's 2020 study identifies three emerging approaches for leading successful digital transformation: innovating by experimenting, radical transformation via incremental changes, and dynamic sustainable advantages. Limitations include the need for more systematic research and new research methods to address the rapid pace of change. Chernet Gebayew, Inkreswari Retno Hardini, G. Panjaitan, N. Kurniawan, and Suhardi's 2018 systematic literature review concludes that organizations should modify their business plans or policies for a new digital business model. The study highlights challenges in identifying all opportunities and challenges of digital transformation.

The 2018 study by C. Heavin and D. Power discusses challenges for digital transformation and proposes a decision support guide for managers. Limitations include challenges in operationalizing transformative digital transformation, potential gaps in coverage, and the preliminary nature of the research. Sascha Kraus, Susanne Durst, João J. Ferreira, Pedro Veiga, Norbert Kailer, and Alexandra Weinmann's 2022 study on digital transformation in business and management research notes the rapid growth and complexity of research in this area. Philipp Kurmann and Brian Arpe's 2019 study on managing digital transformation emphasizes the undefined nature of digital transformation, the significance of customer centricity, and key success factors. Limitations include the need for further validation, limited representation, and exploration into industry-specific challenges. Ulrike Stefanie Foerster-Pastor Foerster-Metz, Katrin Marquardt, Nina Golowko, Andreas Kompalla, and C. Hell's 2018 study explores the impact of digitalization on organizational behavior, leadership, and workforce, emphasizing significant changes in workforce population, skill sets, and interaction within organizations. Nagy K. Hanna's 2016 study introduces the EDGE approach as a comprehensive operating model with technology at its core, emphasizing best practices, challenges during the global pandemic, and the potential of ICT in addressing global challenges.

Swen Schneider and Olga Kokshagina's 2021 study discusses challenges faced by firms at the beginning of their digital transformation efforts, emphasizing the central paradigm, AI's impact, and the need for new leadership skills and approaches. Emily Henriette, Mondher Feki, and I. Boughzala's 2015 study concludes that digital transformation is more than just a technological shift, impacting business models, operational processes, and end-users' experience.

3. CONCLUSION AND PROPOSITION

Examining the array of studies on digital transformation yields several hypotheses for guiding further academic inquiry within this dynamic field:

Hypothesis 1: The increasing integration of digital technologies into diverse facets of business operations necessitates a fundamental paradigm shift in strategic management approaches, requiring not only technological adaptation but also a broader organizational transformation.

Hypothesis 2: Macro-economic performance is significantly influenced by the degree of digitalization within an economy, with bidirectional causality between digital transformation and macroeconomic stability being a prominent factor. This influence manifests through the adoption of digital technologies, the development of a supportive regulatory environment, and overall digital readiness.

Hypothesis 3: Organizations that embrace adaptability and invest in developing digital competencies among their workforce are more likely to achieve sustained innovation, competitiveness, and resilience in the face of digital transformation.

- Hypothesis 4:* Effective government interventions, including infrastructure development, digital literacy initiatives, and supportive regulatory frameworks, positively contribute to the success of digitalization at both micro and macroeconomic levels.
- Hypothesis 5:* Different industries may encounter distinct hurdles and opportunities during the digitalization process, necessitating tailored strategies for successful transformation. Industry-specific challenges require focused attention in future research.
- Hypothesis 6:* The field of digital transformation research remains dynamic and continuously evolving, as indicated by recurring limitations such as the need for additional research, incomplete consideration of results, and potential biases. Future studies should aim to address these gaps, contributing to the refinement and advancement of theoretical frameworks and practical insights in the domain of digital transformation.

Table 1. Mapping Literature

Title	Authors	Year	Abstract summary	Main findings	Limitations
The Impact of Digital Transformation on Strategic Business Management	Benjamin Grab, Marieta Olaru, R. Gavril	2019	The disruptive nature of digital transformation has the potential to shake the foundations of industries.	The main findings of the paper are: - The disruptive nature of digital transformation has the potential to significantly impact industries, necessitating fundamental changes in strategic management approaches. - The introduction of the digital transformation strategy framework aims to address the challenges posed by this phenomenon and encourages further research in this area.	The limitations of the study are not explicitly stated in the paper, but based on the information provided, potential limitations include: - Incomplete consideration of research results - Inadequate capture of regional impact - Need for additional research in the field (self-reported)
The Impact of Digital Transformation On Business Management	Cantemir Mihu, I. A. Bogoslov, A. Lungu	2021	The existence of digital components as an integrated part of business is no longer an option, but a necessity.	- Orienting existing business models towards digitalization, by adapting them; - Developing new business models; - Imposing certain changes in management practice and organizational culture; - Increasing the performance obtained by businesses; - Determining competitive advantages for the business; - Increasing opportunities for business internationalization as a result of digitalization, as well as sustaining the progress and international performance of the business; - Increasing the possibilities for sustainable business development; - Supporting innovation, value creation and originality value;	The limitations of the study as stated in the paper are related to the consideration of a single database, the possibility of unintentional omission of key terms, and the inclusion of a large number of terms in the search query.

Title	Authors	Year	Abstract summary	Main findings	Limitations
				- A better orientation towards the needs of the digital consumer; - Increasing brand awareness.	
The Impact Of Management And Strategies For Digital Enterprise Transformation On Welfare	Francisco Xavier Pedro, Joana Maria Costa Martins das Dores	2021	Digital transformation is progressing exponentially.	-	The limitations of the study include: - The study is based on the Global Innovation Index (GII) input-output framework and literature review on innovation, which may not cover all aspects of digital enterprise transformation. - The impact of management and strategies for digital enterprise transformation on welfare may vary across different countries and regions, which is not fully explored in this chapter. - The chapter does not delve into the specific challenges and opportunities for digital enterprise transformation in different industries, which could be a fruitful area for further research.
Digital Transformation: A Literature Review And Guidelines For Future Research	João Reis, Marlene Amorim, Nuno Melão, Patrícia Matos	2018	Managers should adapt their business strategy to a new digital reality.	-	-
The Impact Of Digital Transformation On Macroeconomic Stability:	I. Tiutiunyk, J. Drabek, N. Antoniuk, V. Navickas, P. Rubanov	2021	The bidirectional causality between the digital transformation of the economy and indicators of	The main findings are the bidirectional causality between digital transformation and macroeconomic stability, the	The limitations of the study include a small sample size for some countries, lack of detailed

Title	Authors	Year	Abstract summary	Main findings	Limitations
Evidence From EU Countries			its macroeconomic stability is beneficial for authorities to form competitive advantages of the economy and its sustainable development.	sensitivity of macroeconomic stability to shocks of the Digital Transformation Index, and the necessity of considering the level of digitalization in developing a methodological toolkit for increasing macroeconomic stability.	analysis on differences in obtained results compared to other research, not considering the possibility that average correlation may be caused by similarity of tendencies rather than close relationship, and the need for further research to define the relationship between the level of business competitive advantages and the Digital Transformation Index.
Strategic Management Of Digital Transformation Of The Economy	V. Mishchenko	2022	The decentralized management model is more functional and effective.	Digitalisation is a complex, inclusive economic activity and a strategic policy task for governments globally. Strengthening approaches to digital transformation and the importance of digital transformation for Ukraine's economy are key findings.	-
Digital Transformation Management: Scientific Approaches And Economic Policy	Valery Aturin, Irina Moga, S. Smagulova	2020	The key characteristics of new economic policy are flexibility and detailed specification to fine-tune the combination of tools depending on the object of management.	The main findings include the evaluation parameters of digital transformation, areas of high uncertainty in digital transformation, and the role of governments in promoting digital transformation.	The limitations of the study include the incomplete understanding and fragmented study of many aspects of digital transformation management, the difficulty in assessing the direction of global technology dissemination, parameters of technological competition in global markets, and transformational effects caused by the emergence of new digital technologies, and the need for a

Title	Authors	Year	Abstract summary	Main findings	Limitations
					flexible strategy framework for managing digital transformation in the state scale.
Improving Business Performance Through Innovation In The Digital Economy	-	2020	The book Managing Digital Transformation is unique in its approach.	-	-
Digital Transformation And Its Influence On GDP	L. Mičić	2017	Increased European countries investment in digital transformation through private and public ICT sector development usually has positive impact on economic growth as well as key indicators such are GDP, productivity and employment.	- Digital transformation, high-tech public spending, and ICT sector development have a positive impact on economic growth and key indicators such as GDP, productivity, and employment. - There is a positive relationship between ICT use index and growth rate of real GDP per capita, indicating the potential for ICT to contribute to economic growth. - The digital economy is identified as a key sector for economic growth and new employment.	The limitations of the study include the lack of adequate study to completely confirm the correlation between high GDP per capita and high ICT investment and spending, the need for further research in the area of influence of tech investment on key macroeconomics indicators, and the potential positive effects of further investments in the high tech sector on digital transformation and macroeconomic indicators. The paper itself could serve as a basis for further research in this area, and there is a need for further increase of ICT investments and development of the ICT industry in south-east Europe to achieve the level of EU10 countries in 2004 and join the group of countries in central Europe with medium GDP

Title	Authors	Year	Abstract summary	Main findings	Limitations
					per capita and more developed economies.
Digital Transformation: A Multidisciplinary Reflection And Research Agenda	Peter C. Verhoef, Thijs Broekhuizen, Yakov Bart, Abhi Bhattacharya, John Qi Dong, Nicolai Fabian, Michael Haenlein	2021	Digital transformation requires specific organizational structures and bears consequences for the metrics used to calibrate performance.	The main findings are the identification of the three stages of digital transformation, the delineation of growth strategies for digital firms, and the emphasis on the multidisciplinary nature of digital transformation research.	The limitations include the lack of empirical research on the link between the different phases of digital transformation and performance, and the need for a better understanding of contextual influences and factors moderating the impact of digital transformation on firm performance. The paper also suggests that little is known about the degree to which firms should transform digitally. Furthermore, it highlights the need for future research to measure how digital readiness of firms may help the transition through the phases of digital transformation.
Business Performance Management Models Based On The Digital Corporation's Paradigm	Sergei, Aleksandra, Ludmila, Olga, Victoria, Tamara, Vladimir	2017	The concept of corporate performance management is timely.	The main findings are an overview and comparative analysis of classical and digital models of corporate governance, a paradigm for building information and analytical systems for digital corporation management using advanced business intelligence, and a proposed paradigm for the evolutionary development of a digital corporation based on a 4-level information architecture.	The limitations include the resistance of corporations to digital transformation, the flexibility and evolutionary nature of the digital transformation process, the applicability primarily to large corporations, and the requirement for a deep survey and overcoming organizational and business barriers for each project (confidence: 95)



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Digital Transformation And Its Challenges To The Strategic Management System	I. Maksimenko, Tatiana Vashko, S. Zdrestova-Zakharenkova	2021	Digital technologies and their tools are fundamentally changing not only the technological order but also the economic system.	The main findings of the paper include the importance of understanding and overcoming the challenges of digital transformation, the intention for the results to guide further research, and the identification of the most frequently encountered challenges in digital transformation.	-
Digital Transformation: An Overview Of The Current State Of The Art Of Research	S. Kraus, Paul Jones, Norbert Kailer, Alexandra Weinmann, Nuria Chaparro-Banegas, N. Roig-Tierno	2021	The literature on digital business transformation is qualitatively classified into three different clusters based on technological, business, and societal impacts.	The paper aims to provide insight into the current state of the literature on digital transformation through a systematic literature review, identifying and examining the main research avenues in the field, with a majority of research focused on changes DT triggers in business processes and organizational implications.	The limitations of the study include: - The literature review does not include all research done on digital transformation - The authors' subjectivity within the research process may have influenced the selection of literature - Bibliometric analysis may generate biased results due to articles being cited more often over time and self-citations - More literature is needed to uniformly define digital transformation - The study focuses on already-digitized established industries, and future research could address latecomer industries such as oil and gas - The framework for organizational digital transformation can be

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					extended by applying multiple case studies with cross-case comparisons - Research on how to manage digital transformation and its associated costs will be a key element for the future - There is a need for new theories in the current age of radical change in innovation and digital transformation - Emphasis on socio-cultural aspects could be very insightful for understanding digital transformation - Research on how crowd-based platforms gain legitimacy will enhance the understanding of digital transformation
Digital Transformation In Business And Management Research: An Overview Of The Current Status Quo	Sascha Kraus, Susanne Durst, João J. Ferreira, Pedro Veiga, Norbert Kailer, Alexandra Weinmann	2022	Existing research on digital transformation to date has been limited to certain domains.	The main findings are related to the rapid growth and complexity of digital transformation research, the focus on structural changes required for DT, and the development of a comprehensive framework for understanding DT in the areas of business and management.	-
Managing Digital Transformation - How Organizations Turn Digital Transformation Into Business Practices	Philipp Kurmann, Brian Arpe	2019	Digital transformation leverages data-driven and service-related business models.	The main findings are: - The phenomenon of digital transformation is undefined for organizations.	The limitations of the study include: - The undefined nature of digital transformation for organizations



Title	Authors	Year	Abstract summary	Main findings	Limitations
				- Customer centricity is a key objective for digital transformation. - Digital transformation leverages data-driven and service-related business models, and effective strategies are integral to overarching corporate strategies. - Key success factors to turn digital transformation into business practices include top management support, flatter hierarchies, intensified people management, utilizing data and digital technologies, and customer-centric key performance indicators.	- Limitations of the qualitative approach and multiple case study design - The need for further validation and revision of the conceptualizing framework - Limited representation of digital transformation experiences from only eight case companies - Potential biases and limitations in data collection from semi-structured interviews - Lack of exploration into industry-specific challenges in implementing digital transformation - The need for further research on the long-term impacts and sustainability of digital transformation strategies.
Digital Transformation And Its Implications On Organizational Behavior	Ulrike Stefanie Foerster-Pastor Foerster-Metz, Katrin Marquardt, Nina Golowko, Andreas Kompalla, C. Hell	2018	Companies need to understand the impacts and effects associated with these mega trends and prepare themselves for the future.	The main findings of the paper include the impact of digitalization on organizational behavior, leadership, and workforce, emphasizing significant changes in the workforce population, required skill sets, and the ways of interaction within organizations.	-
Mastering Digital Transformation: Towards A Smarter Society,	Nagy K. Hanna	2016	The EDGE approach is a comprehensive operating model with technology at its core.	The main findings include best practices in manufacturing, challenges faced by businesses during the global pandemic,	The limitations of the study include the challenges in achieving the positive benefits of ICT technologies, the potential fragility

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Economy, City And Nation				and the potential of ICT in addressing global challenges.	of software as an adaptation tool, and the dilemmas and uncertainties arising from the ICT revolution. The specific answers for each country are expected to come through invention, innovation, re-imagination, experimentation, evaluation, and systematic learning.
Digital Transformation: A Review, Synthesis And Opportunities For Future Research	Swen Nadkarni, Reinhard Prügl	2020	The pace of transformation, the culture and work environment, or the middle management perspective are significantly underdeveloped.	The paper consolidates existing findings in the literature of information systems and proposes future research opportunities for digital transformation. It systematically reviews 58 peer-reviewed studies published between 2001 and 2019, identifies technology and actor as the two aggregate dimensions of digital transformation, and integrates cross-disciplinary contributions from reviewing papers on technological disruption and corporate entrepreneurship. The review also highlights certain underdeveloped aspects such as the pace of transformation, culture and work environment, and the middle management perspective.	The limitations of the study include underdeveloped aspects such as the pace of transformation, culture and work environment, and the middle management perspective, as well as suggestions for future research opportunities and the need to strengthen the management perspective.
Leading Digital Transformation: Three Emerging Approaches For Managing The Transition	Feng Li	2020	The emerging approaches can be used to guide digital transformation initiatives.	- The paper identifies three emerging approaches for leading successful digital transformation: innovating by experimenting, radical transformation via successive incremental changes, and	The limitations of the study include the need for more systematic research, qualitative research based on case studies and ethnographic approaches, large-

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				dynamic sustainable advantages through an evolving portfolio of temporary advantages. - The research emphasizes the urgency and perpetual nature of digital transformation, highlighting the need for new and iterative approaches to bridge the strategy-execution gap in the volatile digital economy. - It challenges the traditional linear processes for digital transformation and calls for new leadership skills and approaches to manage the transition effectively.	scale quantitative research, and the development of new research methods to address the rapid pace of change in the digital transformation landscape.
A Systematic Literature Review On Digital Transformation	Chernet Gebayew, Inkreswari Retno Hardini, G. Panjaitan, N. Kurniawan, Suhardi	2018	Organizations should modify their business plan or policy to a new digital business model in order to achieve their goals.	Digital transformation fundamentally alters how businesses perform and bring value to customers. Organizations should modify their business plan or policy to a new digital business model in order to achieve their goals, particularly in the applying of operation and process management. The study highlights the challenges of identifying the entire opportunities and challenges of digital transformation.	The limitations of the study are not clearly stated, but it is mentioned that it is difficult to identify all the opportunities and challenges of digital transformation, and that problems occurred in the previous study. No specific limitations or suggestions for further research are provided.
Governance Strategies For A Sustainable Digital World	I. Linkov, Benjamin D. Trump, Kelsey Poinsett-Jones, Marie-Valentine Florin	2018	Digitalization raises potential sustainability challenges pertaining to social and environmental wellbeing driven by automation of information processing and delivery of services.	- Digitalization is both an opportunity and a challenge to the UN Global Sustainable Development Goals - The increasing scale and complexity of digital systems present challenges for	-

Title	Authors	Year	Abstract summary	Main findings	Limitations
				promoting sustainable digital growth and development - Adaptive governance approaches are likely necessary to address the economic and social sustainability challenges posed within differing manifestations of digitalization.	
Digital Transformation Process And Smes	Dilber Ulas	2019	SMEs should transform their organizational structures and business making cultures starting from manufacturing technologies to management perceptions as to get a productive digital transformation process.	Digital transformation is a functional use of web in various aspects of business and is a data-oriented management model. SMEs play a crucial role in the economy and need to be able to perform cost-benefit analysis of digital technologies to undergo a productive digital transformation process. Empirical studies show that SMEs have erratic behaviors in terms of ICT investment and require external support to integrate digital transformations into their overall strategy.	The limitations of the study are not explicitly stated in the paper, except for the erratic behaviors of SMEs in terms of ICT investment and the need for external support. (Note: The paper does not provide specific limitations or suggestions for further research beyond this statement.)
Transformation Of Management Technologies In The Digital Economy	P. Levchaev, B. Khezazna	2019	The management paradigm and highly effective processes of management of various focus groups by formalized and algorithmized teams of artificial intelligence are presented to the control subsystem.	The main findings include the increased efficiency of management decisions with digital technologies, the polarization of society in terms of management hierarchy, and the self-sufficiency of the management system.	-
Digital Economy And The Evolution Of Strategic Management	V. Markova, S. Kuznetsova	2019	The space of strategic choices expands significantly in modern economics.	The main findings of the paper are the focus on digital platforms and business ecosystems leading to the transformation	-

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				of various aspects of business, and the expansion of strategic choices in modern economics leading to a multi-vector and multi-agent approach in determining the company's strategy.	
Challenges For Digital Transformation – Towards A Conceptual Decision Support Guide For Managers	C. Heaven, D. Power	2018	The digital transformation decision support guide for managers may be useful across a range of organizational scenarios.	The main findings of the paper include the significant impact of digital technologies on organizational transformation, the identification of common dilemmas faced by managers in digital transformation, and the proposal of a decision support guide for facilitating successful digital transformations.	The limitations of the study include limited consideration of the challenges of operationalizing a transformative digital transformation approach, potential gaps in coverage of managerial dilemmas, the preliminary nature of the research, and the proposal status of the digital transformation decision support guide.
A Review Of The Impact Of The Digital Transformation On The Global And European Economy	Z. Wysokińska	2021	Leading technologies can allow sustainable development goals to be achieved faster and more effectively.	- Digitization has transformed economic activity worldwide, driven by reduced costs of data collection and increased computing power. - The production and export of advanced technology products in the EU have shown significant growth, with a substantial portion of exports going to the United States, China, and Great Britain. - The Digital Single Market Strategy aims to facilitate cross-border e-commerce in the EU, strengthen the EU through digitization, and support open science and access to scientific results.	-

Title	Authors	Year	Abstract summary	Main findings	Limitations
Transformation Of The Paradigm Of The Economic Entities Development In Digital Economy	Serhiy Shkarlet, M. Dubyna, Khrystyna Shtyrkhun, L. Verbivska	2020	Global digitization forces modern enterprises to respond to the rapid changes in the external environment and adapt to it.	Global digitization is transforming existing business models, statistical indicators of digitalization impact were analyzed, and the feasibility and advantages/disadvantages of digital economy tools were outlined.	-
The Impact Of Digital Transformation On Business Models And Competitive Advantage	Kresnawidiansyah Agustian, E. S. Mubarak, Agustian Zen, Wiwin Wiwin, Aulia Januar Malik	2023	Digital transformation has brought about a significant business paradigm shift.	Digital transformation is a necessity for maintaining relevance and competitiveness, leading to a significant business paradigm shift.	The limitations of the study include limited resources hindering full adoption of digital technology, the challenge of changing organizational culture to support digital transformation, uncertainty brought about by rapidly evolving technology, the complex and continuously evolving issue of data security, and the possibility that not all organizations may succeed in achieving competitive advantage through digital transformation.
Modern Trends In The Development Of The Regional Economic Management System In The Context Of Digital Globalization	O. Prihodchenko, V. Panskov, L. Afanasyeva	2021	The mechanism of strategic management of the region should be based on digitalization technologies.	- Digital transformation is essential for strategic management at the regional level - The integration of digital transformation processes can increase the efficiency of state (regional) management - The development of digital technologies has a significant impact on the economy	The limitations of the study include the lack of qualified personnel and "brain drain" outside the region and the country as a whole, as well as the need for support for individual enterprises, research centers, and educational institutions. The study also emphasizes the importance of large research centers for becoming a leader in the scientific and technical process and ensuring the



Title	Authors	Year	Abstract summary	Main findings	Limitations
					implementation of state programs in the field of information technology.
Digital Transformation: What We Have Learned (Thus Far) And What Is Next	S. Schneider, Olga Kokshagina	2021	Firms face challenges at the beginning of their digital transformation efforts.	- The emergence of the central paradigm of digital transformation due to the variety of digital technologies, enabling constant connectivity and new ways of generating and processing data. - The motivation for the study, which aims to understand the current knowledge and remaining gaps in business and management in the digital era. - The significance of AI's impact being most beneficial when it augments rather than replaces human workers.	-
The Shape Of Digital Transformation: A Systematic Literature Review	Emily Henriette, Mondher Feki, I. Boughzala	2015	Digital transformation is more than just a technological shift.	Digital transformation is more than just a technological shift and has impacted business models, operational processes, and end-users experience.	-



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