

Research Article

Digital Transformation in Leadership Management: Opportunities and Challenges in the COVID-19 Scenario

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ARTICLE INFO

Article history:

01 Jul 2024 (Received)

07 Aug 2024 (Accepted)

15 Aug 2024 (Published Online)

Keywords:

Digital Transformation, Internet of Things, Covid-19 Leadership, AI, Cybersecurity.

ABSTRACT

Digital transformation is a crucial process in the development of public and private organizations, with various conceptions. This paper aims to understand the perception, cognitive development, positive aspects, achievements, urgency, and challenges faced by civil servants and leaders in the digital transformation process. The research method is based on available documents and authors' views. The findings will contribute to the theoretical basis and direction for leaders, highlighting the importance of leadership thinking innovation in driving successful digital transformation across countries, especially emerging ones. The research demonstrates the challenges of digital transformation and the need for effective leadership.

DOI: <https://doi.org/10.103/xxx> @ 2024 Transactions on Banking, Finance, and Leadership Informatics (TBFLI), C5K Research Publication

1. Introduction

Digital transformation is a rapidly evolving trend that has significantly impacted various aspects of organizations, including businesses. The widespread adoption of digital technology, such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT), has led to a shift in business processes, products, services, and relationships. This transformation is crucial for public and private organizations of all sizes, especially those at risk of being wiped out without it. Digital transformation is often seen as a catalyst for change, combining digital technology with physical components to enable social change and create new values for users. It is also emphasized for its ability to improve existing processes and the team business model that can change under the impact of digital transformation (Shahi & Sinha, 2021).

The pandemic has further accelerated the adoption of digital transformation, making it an indispensable trend. However, the analysis, control, and processing of large amounts of data are not easy tasks. The research and testing of issuing digital currencies have become a trend in many countries worldwide, with some Asian countries starting to research and test these currencies. Governments need to increase cooperation in research and issue digital currencies, but early warnings about

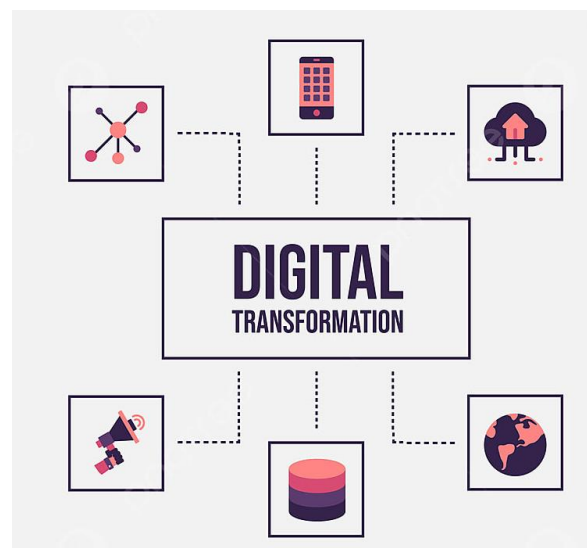


Fig. 1. Digital transformation framework.

cryptocurrencies are being exploited for money laundering or other criminal activities. Fig. 1 shows digital transformation framework.

The strategies that make up the achievements of many countries so far may not have the same effect in the future due to changes in international integration and digital technology development. Leaders of many public and private organizations are making heavy investments by moving towards digital development,

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Cite: Md Mesbah Uddin (2024). Digital Transformation in Leadership Management: Opportunities and Challenges in the COVID-19 Scenario. *Transactions on Banking, Finance, and Leadership Informatics*, 1(1), pp. 12-16.

focusing on efficiency and improving leadership capacity to adapt to the digital transformation context. The greater the efficiency and satisfaction with leadership, the higher the digital leadership skills are. Before the Covid-19 pandemic, private organizations and public service providers developed digital transformation strategies to develop organizations. As the pandemic covered much of the world, organizations and governments were forced to rethink their operating models to ensure that crisis-affected organizations, governments, and citizens were protected. It is time for organizations and governments to realize the importance of digital transformation, which is gradually reshaping how public services such as health, education, and communication are delivered. In conclusion, digital transformation is an increasingly popular trend that cannot be ignored by any individual, organization, or country (Hai et al., 2021).

The research framework presented in this paper presents an analytical structure, an explanation of digital transformation, context driving digital transformation, achievements and challenges of the current process, and suggestions for leaders in digital transformation.

2. Literature review

Digital transformation is a process where digital technologies disrupt value creation paths, triggering strategic responses from organizations. This process involves managing structural changes and organizational barriers. A comprehensive framework of 282 works is presented, emphasizing the role of dynamic capabilities and ethical issues in future strategic IS research on digital transformation. This framework provides a comprehensive understanding of the process and its implications (Vial, 2021).

A paper reviews 58 peer-reviewed studies on digital transformation from 2001 to 2019, focusing on technology and actors. It develops inductive thematic maps and nine core themes to analyze the processes of digital transformation. Cross-disciplinary contributions from 28 papers on technological disruption and 32 papers on corporate entrepreneurship supplement the state-of-the-art. However, certain aspects, such as the pace of transformation, culture, work environment, and middle management perspective, are significantly underdeveloped (Nadkarni & Prügl, 2021). Another paper aims to contribute to the discussion of effective digital transformation in organizations by analyzing skills trends and analyzing perceptions of challenges and opportunities. A literature review and online survey were conducted to identify the necessary skills for digital transformation. The main identified skills include artificial intelligence, nanotechnology, robotization, internet of things, augmented reality, and digitalization. The study focuses on mobile technologies, tablets, and smartphone applications as popular digital learning contexts. The study aims to help organizations rethink their strategies based on skills development to

respond to digital transformation challenges (Sousa & Rocha, 2019).

3. Research Methodology

This paper explores the concept of digital transformation in organizations, focusing on a systematic literature review. The mixed research methodology is applied, with a focus on qualitative research, which is considered more suitable for studying phenomena related to organizational stability and development. A systematic document review method is followed to limit systematic error and ensure the evaluation and synthesis of relevant studies. The analysis process involves analyzing existing documents and researching numerical conversion based on relevant resources. The term "digital transformation" is used to address three research questions:

Q1: Why do organizations and emerging countries need to implement digital transformation before the Covid-19 pandemic impacts?

Q2: How digital transformation affect organizations and emerging countries during the pandemic?

Q3: How organizations and countries can successfully carry out digital transformation during the Covid-19 pandemic?

Fig. 2 shows research procedure flowchart.

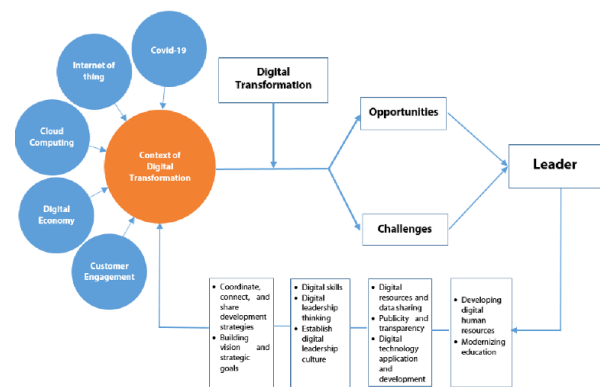


Fig. 2. Research procedure flowchart.

The analytical process is scalable, scientific, and transparent, providing the best evidence to inform academics and practitioners.

4. Need for Digital Transformation Technology

Digital transformation is a significant trend in countries, particularly developing ones, as they strive to build smart organizations based on digital technology. However, many enterprises, especially small and medium enterprises, are not fully aware of the role of digital transformation. In developing countries, small

and medium enterprises face barriers such as a lack of skills, inadequate information technology platforms, and cultural challenges. To adapt to digital transformation, businesses are gradually investing in cloud computing technology, network security, and artificial intelligence. According to IDG's report "The Status of Digital Business Transformation in 2018," 55% of startups have actively applied digital technology to operate their businesses, contributing to a 34% increase in revenue. Big Data, mobile technology, personal cloud storage, public cloud storage, application programming interfaces, and embedded technology (40%) are the technologies with a remarkable increase and are being strongly adopted by businesses.

Public sector agencies have not promoted digital transformation with specific actions, as they believe it can disrupt personnel, especially long-term positions, or leaders and organizations that are not ready to invest in modern technology due to the cost of spending. The structure of information and communication technology revenue is currently mainly contributed by foreign direct investment enterprises, with export revenue contributing mainly to the total revenue. The value-added ratio is not high, and the environment for digital start-ups is not yet attractive. Governments are working hard to promote rapid digital transformation thanks to advances in digital identity, population rights, and digital lifestyles, seeing digital transformation as the key to boosting the economy. As public administrations have begun to digitally transform, private sector firms engaged in the process earlier, especially in information and communication technology, have achieved growth. From 2010 up to now, the scale of the ICT industry has achieved the fastest growth rate of 16 times. Fig. 3 shows digital transformation features.



Fig. 3. Digital transformation features.

Digital transformation drives organizations towards fundamental change in the organization, strategy, and organizational structure, but also in the distribution of

power. Organizations must redesign their strategy, organizational structure, and allocation of power, and initiate an innovation process related to new leadership methods. Digital leaders should be understood as someone with digital skills, business knowledge, and strategic thinking, characterized by strategic leadership, business knowledge to add value to the organization, and digital comprehension to exploit technology trends. By the end of 2020, the Covid-19 crisis forced countries to enter a period of accelerating the application of digital technology. This is an important warning for leaders and governments, as digital transformation is taking place in the public sector and contributes significantly to improving ways to better serve citizens.

5. Advantages of Digital Transformation in COVID-19

Digital transformation has been proven to have positive effects on firms' productivity and performance at the macro level. This transformation involves replacing traditional workflows with digital processes, increasing time spent on research, changing the modern working model, improving employee spiritual life, enhancing workflow efficiency, applying new services and technologies quickly and flexibly, improving work quality and performance, increasing labor productivity, improving product quality and appearance, increasing beneficiary satisfaction, and increasing re-investment ability. Digital transformation presents challenges but also creates advantages. It encourages employees to overcome challenges by adopting new processes and working ways that align with the goals of digital transformation. In the near future, mobile technology with 5G networks will increase the connection of technological equipment, cloud computing will expand the scope of activities, and artificial intelligence, augmented reality, and additive manufacturing will drive the increased value of rapid manufacturing operations. Successful digital transformation shows organizations will deploy many new technologies, especially the ability to use complex technologies like artificial intelligence and the Internet of Things. Posing for leaders to be on a mission level is one of the keys to success in digital transformation. As organizations achieve success in the digital transformation process, they also create digitally savvy leaders and actively participate in the process.



Fig. 4. Role of Digital transformation during Covid-19.

Fig. 4 shows role of digital transformation during Covid-19 . Zero transformation is the application and development of information and communication technologies, which is a breakthrough in socio-economic development. Digital data and technology transform models, processes, products/outputs of production, and business processes, affecting domestic growth, labor productivity, and employment structure. Digital transformation involves digital technologies such as 5G, artificial intelligence, big data, and blockchain, which form an ecosystem through which future economic and social changes will arise.

6. After Covid-19 Challenges from the Digital Transformation

Digital transformation is a critical process that requires both public and private enterprises to undergo significant changes in investment, production, and business. The key to successful digital transformation lies in the digital capabilities of the workforce. Leaders must redefine their roles and responsibilities to align with the goals of the digital transformation process, fostering a sense of urgency to make changes within the unit. Organizations must develop clear workforce strategies to identify the digital skills and capabilities they currently have and will need to meet their future goals.

When planning a digital transformation, organizations must consider the cultural changes they will face as employees and organizational leaders adapt to adopt and rely on unfamiliar technologies. One of the biggest barriers to digital transformation is the change in leaders' minds and perceptions about the importance of digital transformation. To overcome these challenges, leaders need to develop digital skills, actively adapt to new situations and practices, and deal with immediate complications.

To be successful after the context of the COVID-19 pandemic, leaders need to be equipped with appropriate digital skills, contributing to the optimal development of the team. In the digital transformation process, new technologies and models can be tested, engaging everyone while preserving basic human values. To do this, leaders need a comprehensive digital transformation strategy, enhance smart, public, and transparent governance capabilities, build connection infrastructure and network security, and build an ecosystem of innovation and entrepreneurship.

Digital transformation requires a strong, secure, and flexible digital network infrastructure. Cybersecurity incidents risk harming the sustainability and quality of public services, endangering national security, and undermining economic growth. Emerging countries are not fully prepared to deal with cybersecurity threats caused by the dispersion of resources, even struggling with the development of a digital economy. A digital leader should possess exceptional qualities, including a

solid knowledge of digital and new technologies, strategic thinking, wide influence, knowledge and leadership capabilities, and digital knowledge to improve the performance of the organization and exploit technology trends such as innovation opportunities and digital leadership skills.

There is still confusion about whether a digital leader is the leader of a business or an organization engaged in digital activities. However, a digital leader should be understood as someone with digital skills (digital knowledge) with business knowledge and strategic thinking. An attitude of opposition, not support from the staff, is one of the major barriers that leaders must find ways to resolve. Most small and medium enterprises lack the capital and technology resources to invest, and their experience in production management is weak, has no business strategy, and has limited competitiveness. These challenges, along with the way of thinking and the limited capacity of digital transformation in leaders, are crucial obstacles that make the digital transformation process not keep up with the requirements of reality, which is also the cause of many countries lagging in digital transformation.

7. Conclusion

The technological revolution is transforming the world at an unprecedented rate, transforming organizations, information exchange, and interactions with partners in both public and private sectors. Governments need to develop the right policy framework and leadership skills to effectively navigate this transformation. Digital transformation is becoming an indispensable choice for organizations, regardless of size, but presents challenges, especially in slow and developing countries with limited infrastructure and laborers lacking digital skills. A successful leader in a digital age must be aware of digital transformation, equip qualified workers with digital skills, and proactively absorb the achievements of digital transformation. They must make informed decisions, adjust strategy when risks are detected, and contribute to the optimal development of the organization.

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