



Adaptive Leadership and Organizational Culture: The Key to Digital Transformation for Sustainability

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Abstract

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Organizational transformation is essentially a strategic response to the increasingly complex dynamics of the business environment in the digital era. This process involves fundamental changes not only in structure and culture but also in business models and leadership approaches. This study reviews recent literature regarding the role of adaptive leadership, digital leadership, and organizational culture in driving innovation and strengthening organizational resilience. The findings indicate that digital transformation requires not only technology investment but also visionary leadership that is capable of building a collaborative, flexible, and innovative culture across all organizational levels. Adaptive leadership has been proven to be crucial in addressing resistance, managing limited resources, and fostering cross-functional collaboration. By employing a qualitative systematic review methodology, this study emphasizes the importance of integrating transformational vision with digital technology to enhance effectiveness, innovation, and long-term sustainability. The results of this review provide practical implications for organizations seeking to reinforce resilience and competitiveness while navigating the acceleration of global change.



1. Introduction

Organizational transformation is a strategic phenomenon that is increasingly gaining attention in the digital era. The global business environment, characterized by rapid technological acceleration, market uncertainty, and a continuous demand for innovation, forces organizations to undergo fundamental, not merely incremental, changes. This transformation includes restructuring, redefining vision and mission, and integrating digital technology into business processes. Furthermore, organizational transformation is not just about adopting technology but also about how leadership, culture, and innovation are managed so that the organization can adapt and survive (Trushkina et al., 2020). Adaptive leadership is one of the key factors in driving organizational transformation. Unlike traditional leadership, which tends to be stable and hierarchical, adaptive leadership emphasizes the ability to navigate uncertainty, encourage participation, and empower teams to face complex challenges.

Adaptive leaders also play a role in shaping a dynamic, flexible, and innovation-oriented organizational culture. Recent research shows that adaptive leadership has a direct relationship with the success of digital transformation, especially when combined with an organizational culture that supports learning and cross-functional collaboration (Altay et al., 2018). In the context of digital leadership, leaders are not only required to be visionary but also capable of leveraging data, technology, and innovation to drive strategic decisions. Digital leadership integrates managerial approaches with disruptive technology, enabling organizations to move more agilely, responsively, and competitively. Digital leaders act as change facilitators who ensure that technology adoption goes hand in hand with changes in behavior, structure, and

organizational values (Petry, 2018). Organizational culture plays a central role in determining the extent to which transformation can succeed. A rigid and resistant culture often becomes a barrier to the implementation of new policies and the adoption of digital technology. Conversely, a culture that is inclusive, collaborative, and open to learning allows organizations to be more adaptive to change. Recent studies confirm that the integration of an adaptive culture with transformational leadership results in increased innovation and organizational effectiveness in the long term (Marques-Quinteiro et al., 2019).

On the other hand, digital transformation also presents challenges, including internal resistance, limited resources, and the digital skills gap. Without an adaptive leadership strategy, organizations are at risk of failing to manage this transition. Therefore, the role of leaders in creating a work environment that supports innovation, collaboration, and flexibility is becoming increasingly important. Research by Busari et al. (2020) emphasizes that adaptive and transformational leadership styles can accelerate the adoption of new technology while increasing organizational sustainability. Furthermore, the literature shows that the combination of adaptive leadership with digital leadership forms a synergy that strengthens the dynamic capabilities of an organization. These capabilities allow companies not only to survive in crisis situations but also to innovate and create new value.

Soluk and Kammerlander (2021) found that adaptive and transformational leadership contribute significantly to the development of dynamic capabilities in digital transformation projects. The urgency of organizational transformation in the digital era demands an adaptive, visionary, and technology-based leadership approach.

The integration of adaptive leadership, organizational culture, and digital leadership is an important prerequisite for fostering innovation and creating long-term sustainability. Therefore, this study aims to review the latest literature on the synergy between adaptive leadership, organizational culture, and digital transformation to provide practical and theoretical insights for modern organizations

2. Literature Review

2.1. Organizational Transformation and Adaptive Leadership

Organizational transformation in the digital era fundamentally requires radical changes in various aspects, from organizational structure and strategy to the overall company culture. Modern organizations today can no longer rely solely on traditional approaches that tend to be static and rigid; instead, they need a high degree of flexibility and continuous adaptability to face the fast-changing and uncertain dynamics of the business environment. In this context, adaptive leadership plays a very central and strategic role. An adaptive leader does not just direct, but is also able to navigate various uncertainties, respond to market changes quickly, and empower employees to contribute actively to the continuous innovation process.

Recent studies show that adaptive leadership serves as a key catalyst in encouraging organizations to adopt new technology and develop innovations. Altay et al. (2018) found that organizational culture can moderate the relationship between adaptive leadership and the success of digital transformation, which confirms the importance of a strong synergy between the leadership style and the organizational culture itself. Similarly, Busari et al. (2020) emphasize that the combination of

adaptive and transformational leadership styles has been proven to accelerate the process of technology adoption while increasing the organization's long-term sustainability. Furthermore, Trushkina et al. (2020) also highlighted in depth the role of value-based leadership in shaping a more dynamic, open, and adaptive organizational culture to manage the major challenges that arise from technological disruption. The emphasis on values, a long-term vision, and team empowerment is a key to ensuring that organizational transformation is not just understood as a technology transition, but also interpreted as a comprehensive paradigm shift.

2.2. Digital Leadership, Organizational Culture, and Innovation

A digital leader is not only a master of technology but is also able to integrate that technology with the organization's business strategy as a whole to create a sustainable competitive advantage. In Petry's (2018) research, digital leadership is seen as an inseparable and vital element for building a truly adaptive and resilient organization in the digital era. A digital leader is required to have a visionary, collaborative, and data-driven character in making every strategic decision that affects the direction of the organization.

An adaptive organizational culture is also an important prerequisite for supporting the effectiveness of digital leadership. Rath et al. (2021) revealed that a harmonious integration between a flexible organizational culture and adaptive-transformational leadership can strengthen organizational resilience in the face of disruption. In line with this, Marques-Quinteiro et al. (2019) state that adaptive leadership in a learning organization can increase innovation capacity, especially by increasing the self-efficacy of employees toward inevitable change.

Furthermore, Ruel et al. (2021) add that digital leadership plays a very important role in directing the development of innovative business models and managing organizational change in a structured way. Thus, innovation is not merely born from technology adoption, but also from a leader's success in building an organizational culture that supports creativity, cross-team collaboration, and continuous learning. The literature confirms that the success of organizational transformation in the digital era is highly dependent on a combination of adaptive leadership, digital leadership, and an innovative and flexible organizational culture. These factors not only strengthen organizational resilience but also directly increase the capacity for continuous innovation in the future.

3. Methods

This study uses a systematic literature review (SLR) with a qualitative approach to analyze the role of adaptive leadership, organizational culture, and digital leadership in driving organizational transformation in the digital era. This method was chosen because it is able to synthesize the results of previous research in a structured manner so as to provide a comprehensive understanding of trends, key findings, and existing research gaps. The research stages begin with the identification of literature sources through reputable scientific databases like Google Scholar or Elsivier with indexed national and International journals. Inclusion criteria are set for published articles focusing on the themes of organizational transformation, adaptive leadership, organizational culture, digital leadership, and organizational innovation. From the results of the initial search, a number of articles were obtained which were then

selected based on their relevance to the research topic. The selection process follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) principles. The first stage is identification, followed by screening of titles and abstracts, then a full evaluation of the articles that meet the criteria. Articles that were not in line with the research focus, such as those that discussed organizational transformation but without the context of leadership or digitalization, were eliminated. With this approach, the research ensures that only relevant and high-quality literature is analyzed.

Data analysis techniques are carried out through thematic coding. The selected articles are analyzed to identify key themes such as: the role of adaptive leadership in facing digital complexity, the integration of digital leadership with organizational culture, challenges in implementing digital transformation, and strategies for building innovative and sustainable organizations. This process allows the research to find recurring patterns and relationships between variables reported by various studies. Data validity is strengthened by performing source triangulation. The findings from international journals are compared with national literature and applied research reports to obtain a more complete picture. In addition, the qualitative method allows researchers to emphasize contextual aspects that often cannot be captured by quantitative approaches, for example, the dynamics of organizational culture or leadership styles in a certain context.

This systematic approach provides several advantages. First, the research can present organized scientific evidence to answer the research questions. Second, this method is able to identify research gaps that have not been widely explored, such as

the synergistic relationship between adaptive leadership and digital leadership in managing transformation. Third, this methodology produces practical contributions by compiling recommendations based on empirical findings from the latest literature. Thus, the qualitative methodology based on a systematic review used in this study not only provides a comprehensive synthesis of knowledge, but also generates practical insights that can be the basis for organizational strategy in managing transformation in the digital era

4. Results

The results of this systematic literature review show that organizational transformation in the digital era cannot be separated from the interaction of three main factors, namely adaptive leadership, digital leadership, and organizational culture. The findings from various literatures confirm that a successful transformation is not just about technology adoption, but a comprehensive change that involves the mindset, structure, strategy, and relationships between individuals in the organization. First, the role of adaptive leadership is proven to be very important in encouraging organizations to face the dynamics of increasingly rapid change. Adaptive leaders are able to navigate uncertainty, manage internal resistance, and encourage employee participation in facing challenges.

The study by Altay et al. (2018) confirms that adaptive leadership has a positive correlation with the success of digital transformation, but this influence is highly dependent on organizational culture. A collaborative, open, and innovative culture can strengthen the effectiveness of adaptive leadership in fostering organizational

readiness to face digitalization. Conversely, a rigid and hierarchical culture often hinders leaders from driving change. The research by Busari et al. (2020) supports this finding by showing that adaptive and transformational leadership styles accelerate the adoption of new technology. Adaptive leaders act as facilitators who help employees overcome technological uncertainty, while transformational leaders inspire with a clear vision. The combination of these two styles results in accelerated innovation while strengthening organizational sustainability. This shows that organizations that want to succeed in digital transformation need to develop a hybrid leadership model that is able to balance a long-term vision with short-term flexibility.

In addition to adaptive leadership, the results of the literature review highlight the importance of digital leadership as a form of leadership that is relevant to the era of technological disruption. Digital leaders are required not only to be visionary, but also skilled in leveraging data, technology, and innovation in making strategic decisions. Petry (2018) calls digital leadership a primary prerequisite for building an adaptive organization. This is in line with Kupiek's (2021) research, which shows that digital leadership plays an important role in increasing organizational agility through an adaptive management strategy. Thus, digital leadership not only facilitates the integration of technology, but also creates new structures and work patterns that are more agile and responsive to the market. Digital leadership includes the ability to inspire, facilitate virtual collaboration, and encourage continuous innovation through the use of digital technology that is relevant to organizational goals. The presence of digital leadership brings various strategic benefits to organizations that are facing the wave of transformation. One of the main benefits is increased efficiency in decision-

making through data analytics and real-time monitoring. In addition, digital leaders are able to create a culture of innovation that encourages employees to actively contribute to the creation of added value (Guinan et al., 2019).

However, the implementation of digital leadership often faces challenges. One of them is the lack of readiness of leaders to integrate a transformational vision with the use of technology. Many leaders are still stuck in traditional managerial patterns so they fail to take advantage of digital opportunities optimally. Ruel et al. (2021) emphasize that digital leadership must be accompanied by the ability to design innovative business models and the skills to manage organizational change. This shows that the success of digital leadership cannot be achieved only with technical skills, but requires integrated visionary, collaborative, and innovative capacity. In addition to leadership, organizational culture is proven to be the foundation that determines the direction of a successful transformation. An organizational culture that supports learning, collaboration, and flexibility strengthens the effectiveness of both adaptive and digital leadership. Trushkina et al. (2020) showed that value-based leadership is able to shape a dynamic, adaptive, and innovative organizational culture. This kind of culture allows organizations to more easily integrate disruptive technology and manage the uncertainty of the business environment.

The findings from Rath et al. (2021) reinforce the role of adaptive culture by highlighting that adaptive-transformational leadership will only be effective if the organization has the values of flexibility and the courage to experiment. In other words, technology and leadership are only instruments, while culture is the foundation that determines the success of the transformation. This is in line with Marques-

Quinteiro et al. (2019) who confirm that adaptive leadership in a learning organization can increase innovation by increasing employees' self-confidence in the face of change. Adaptive leadership has been developed as a response to the need for organizations to respond to rapid and unexpected change. The theory of adaptive leadership emphasizes the importance of leaders in guiding organizations through complex challenges where clear solutions are not always available. On the other hand, flexible leadership requires leaders to have the skills and attitudes that can adapt to situational changes that arise. Leaders who are not able to adapt to technological and market changes are at risk of inhibiting organizational innovation and growth (Cortes & Herrmann, 2021).

Furthermore, the results of the literature review also show that organizational innovation is the main output of the synergy between adaptive leadership, digital leadership, and organizational culture. Soluk and Kammerlander (2021) found that adaptive and transformational leadership contribute significantly to the development of dynamic capabilities, which are a prerequisite for organizations to innovate sustainably. These dynamic capabilities include the organization's ability to respond to environmental changes, integrate new resources, and create value through innovative business models. Competitive advantage is achieved by daring to take risks in trying new things and always listening to feedback given by customers, as well as identifying new opportunities because the business environment changes and trying to understand customer needs and desires. This strategic flexibility requires managers to find a balance by taking the necessary actions to avoid investments that may fail.

Specifically, strategic flexibility allows for the creation of value and superior performance by using strategic options (Pudjiarti & Putranti, 2020).

This study also highlights the existence of major challenges in organizational transformation. Internal resistance, limited resources, the digital skills gap, and cultural mismatch are the main inhibiting factors. A study by Stewaert et al. (2017) explains that adaptive leaders must be able to manage this resistance through effective communication, employee empowerment, and the creation of a work environment that supports experimentation. In this context, adaptive leadership does not only act as a driver of change, but also as a mediator that bridges the gap between the organization's vision and the reality of implementation.

The results of the study confirm that the success of organizational transformation in the digital era is highly dependent on the synergy between adaptive leadership, digital leadership, and organizational culture. The three of them play a complementary role: adaptive leadership provides flexibility and the ability to navigate uncertainty; digital leadership provides vision, strategy, and the use of technology; while organizational culture ensures sustainability through collaborative, innovative, and flexible values. This synergy ultimately encourages the formation of a resilient, innovative, and highly competitive organization. Thus, it can be concluded that organizational transformation is not just a technology project, but a long-term strategic journey that requires visionary leadership, an adaptive culture, and a capacity for continuous innovation. The results of this study provide practical implications for leaders and organizational managers to design a more holistic transformation strategy, oriented toward people as well as based on technology.

5. Discussion

The results of this study confirm that organizational transformation in the digital era is a complex, multidimensional process that cannot be viewed only from a technological perspective. The literature shows that the role of adaptive leadership, digital leadership, and organizational culture are key elements that complement each other. However, at the implementation stage, organizations face various challenges that require special strategies so that the transformation does not just stop at the level of rhetoric, but is truly internalized into the structure and daily work practices. Adaptive leadership is proven to provide a foundation for organizations to face uncertainty. Adaptive leaders play a role in reducing internal resistance, building trust, and encouraging cross-functional collaboration. However, the main challenge faced is how to ensure that this leadership style can be applied consistently at various levels of the organization.

In many cases, adaptive leadership is often concentrated at the top level, while the middle to operational levels are still stuck in traditional management patterns. This has the potential to create a gap in the implementation of the transformation. Therefore, organizations need to develop mechanisms for continuous adaptive leadership training and development at all levels of the hierarchy. Digital leadership provides a strategic direction in the use of technology. The literature confirms that digital leaders must be visionary, collaborative, and data-driven. However, problems arise when many leaders still have limitations in integrating a transformational vision with the use of technology. Another challenge is the digital competency gap between leaders and employees. If leaders are unable to set an example in the use of technology,

the transformation process is at risk of being hindered. Therefore, a digital leadership development strategy must be designed not only based on management theory, but also involve practical learning in mastering technology.

Organizational culture is the foundation that determines the success or failure of a transformation. A flexible, inclusive, and collaborative culture can accelerate technology adaptation and support continuous innovation. However, the big challenge that arises is how to change a deeply rooted organizational culture. Cultural change often requires a long time and high resistance. In addition, the literature also shows that organizational transformation cannot be separated from structural challenges such as limited resources, rigid regulations, and the digital skills gap. These factors often become a barrier even though the leadership and organizational culture already support change. Therefore, a transformation strategy requires a holistic approach that not only focuses on the internal dimensions of the organization, but also pays attention to external factors, including government policies, market conditions, and global technological developments.

This discussion also highlights the importance of the synergy between adaptive leadership, digital leadership, and organizational culture. The three cannot stand alone, but must be integrated. Adaptive leadership provides flexibility, digital leadership provides vision and direction, while organizational culture ensures sustainability. Without this synergy, the transformation is at risk of failing or only resulting in cosmetic changes. Finally, this study underlines the need for the development of new, more integrative theories in understanding organizational transformation. Most of the literature still highlights the role of leadership, culture, and technology separately. In

fact, reality shows that the three are closely related. Further research can explore an integrative model that combines adaptive leadership, digital leadership, and organizational culture within the framework of dynamic capabilities to provide a more complete understanding of the success of transformation. Thus, this discussion emphasizes that organizational transformation is not just a technology project or formal restructuring, but a long-term strategic journey that requires commitment, alignment, and synergy from various aspects of the organization.

6. Conclusion

This study confirms that organizational transformation in the digital era is a long-term strategic process that cannot be separated from the interaction between adaptive leadership, digital leadership, and organizational culture. Transformation is not just about implementing new technology, but also involves a paradigm shift in organizational leadership, values, and behavior. Adaptive leadership emerges as a decisive factor in navigating uncertainty, managing resistance, and encouraging employee participation. Digital leadership strengthens this process by providing a strategic direction based on data, innovation, and technology. Meanwhile, an adaptive, collaborative, and innovative organizational culture becomes the foundation that ensures the sustainability of the transformation. The synergy of these three elements is proven to be able to increase the dynamic capabilities of the organization, accelerate innovation, and strengthen competitiveness in the midst of an increasingly complex business environment.

However, challenges still exist, including internal resistance, limited resources, and the digital skills gap. Therefore, organizations need to develop a holistic strategy that integrates leadership development, organizational culture improvement, and technology mastery. With this approach, the transformation does not only result in cosmetic changes, but truly shapes a resilient, competitive, and sustainable organization. In a practical sense, this study provides the implication that organizations need to invest in digital-adaptive leadership development programs and build an organizational culture that supports learning and innovation. Theoretically, these findings open up space for the development of an integrative model that combines leadership, culture, and technology as a prerequisite for the success of organizational transformation in the digital era.

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