

Digital Leadership Competencies: A Systematic Literature Review

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Abstract

The rise of digitalization has necessitated a shift in the skillset required of leaders to navigate the ever-evolving digital landscape. This article presents a systematic literature review of classical and contemporary leadership approaches, identifying key competencies required for effective leadership in the digital era.

Digital transformation has brought significant changes to the business environment, requiring leaders to adapt to a new set of challenges and opportunities. This has led to an increasing interest in the development of digital leadership skills and competencies. While communication, vision, and innovation have been identified as important skills for digital leaders, there is a need for a deeper understanding of the unique competencies required for success in the digital era. Moreover, the importance of creating a digitally savvy workforce and the role of training and development programs for leaders cannot be understated.

This article aims to explore the current state of digital leadership, highlighting the key competencies needed for success in the digital age and the role of training and development programs in developing these competencies. Through a comprehensive review of the existing literature, this article aims to offer valuable insights and practical recommendations to business leaders and organizations seeking to succeed in the dynamic and complex digital landscape.

KEYWORDS: *E-Leadership, Transformational Leadership, Digital Era, Digital Ecosystem, Visionary Leadership.*

JEL CLASSIFICATION: M12, M15, O32

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1. Introduction

The interplay between advanced information technology (IT) and leadership has emerged as a topic of great significance and interest in the current rapidly evolving digital landscape. While leadership has traditionally been recognized as a vital element for the success of organizations, the advent of digital transformation has brought forth new challenges and opportunities that leaders must navigate. Advanced IT has the potential to revolutionize the way organizations operate, communicate, and compete in the marketplace, and effective leadership is critical for driving and managing this transformation. Additionally, it is noteworthy that leadership can also shape the development and adoption of advanced IT. Leaders'

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decisions and actions can significantly impact the adoption and effectiveness of IT initiatives, given their roles in crafting organizational culture and strategy. Hence, it is evident that the relationship between advanced IT and leadership is a two-way street, and gaining insight into this dynamic is essential for organizations to thrive in the digital era. The term "e-leadership" was introduced by researchers to define the emerging context for examining leadership. E-leadership is a social influence process mediated by advanced information technology (AIT) that produces changes in attitudes, emotions, thinking, behavior, and/or performance among individuals, groups, and/or organizations. This concept highlights the significance of technology in shaping leadership practices and outcomes, and emphasizes the need for leaders to develop new skills and competencies in the digital era. The definition of e-leadership laid the foundation for a deeper understanding of how AIT and leadership interact, and it has practical implications for organizations seeking to adapt to a rapidly changing digital environment (Avolio et al., 2000).

Gruia et al. (2022) observe that during global crises, certain businesses, particularly those with a primary focus on online activities, experience significant growth and success. This highlights the resilience of companies with a strong online presence in the face of adversity. In light of this, it becomes increasingly important to identify and comprehend the competencies necessary for effective digital leadership. The success of online-based businesses during crises underscores the need for a comprehensive understanding of the key competencies required for effective digital leadership. According to Ölçer et al. (2014), emotional intelligence (EI) plays a significant role in shaping the success of leaders and their followers within organizations. As digital leadership competencies become increasingly important, it is crucial to understand the impact of emotional intelligence in the current business environment.

In today's digital age, virtual collaboration has become an increasingly popular approach for organizational communication and teamwork. Virtual spaces offer the ability for teams to collaborate without the need for physical presence, providing unparalleled convenience and flexibility. Through virtual platforms, team members can easily share information, resources, and ideas regardless of their geographical location or time zone. The virtual environment also allows organizations to tap into a wider pool of talent, including remote workers and freelancers. As a result, effective leadership in virtual environments has become a critical factor in achieving organizational success. With the growing importance of virtual collaboration, organizations must prioritize the development of leadership strategies that are tailored to the unique challenges of the virtual space. According to a recent study by Mayer et al. (2023), the findings emphasize the crucial role of effective leadership behaviors in promoting task accomplishment and team collaboration in virtual environments. This underscores the need for leaders to develop appropriate leadership strategies and behaviors that are tailored to the unique challenges of virtual teams.

Although research results on the effects of digital leadership have been mixed, recent findings suggest that shared leadership in self-managing project teams

can positively impact team performance. Shared leadership, which emphasizes the distribution of leadership functions among team members, has been shown to promote collaboration and innovation within teams. This approach encourages team members to take responsibility for their own work and actively engage in decision-making processes. In self-managing project teams, shared leadership can be particularly effective in supporting team performance by enabling team members to work together more cohesively and effectively towards common goals. These findings underscore the importance of developing leadership strategies that are well-suited to the demands of digital environments, and suggest that shared leadership approaches can be a valuable tool for promoting performance in self-managing project teams.

While previous research on digital leadership has yielded mixed results, recent findings suggest that shared leadership can positively impact team performance, particularly in self-managing project teams. This approach emphasizes the distribution of leadership functions among team members, promoting collaboration, and innovation within teams. As noted by Antoni & Syrek (2017), shared leadership encourages team members to take responsibility for their own work and actively engage in decision-making processes. In the context of self-managing project teams, shared leadership has been shown to support team performance by enabling team members to work together more cohesively and effectively towards common goals. These findings highlight the importance of developing leadership strategies that are tailored to the demands of digital environments and underscore the potential benefits of shared leadership approaches in enhancing team performance.

Avolio and Surinder (2003) suggest that anonymity in digital environments can enhance the motivational effect of transformational leadership, by emphasizing the collective identity of the group. In contrast, transactional leadership that links contingent rewards to output tends to lead to greater idea generation in short-term tasks. The authors raise the question of why brief interactions via electronic channels can have profound effects on human motivation and performance, compared to face-to-face settings. They note that what works in face-to-face settings may not work in computer-mediated settings, and vice versa, highlighting the importance of exploring the unique dynamics of digital environments. Overall, their insights suggest that effective leadership in digital environments requires a nuanced understanding of the distinctive features and affordances of digital technologies, and the ability to adapt leadership strategies accordingly.

2. Literature review

Before delving into digital leadership, it is essential to comprehend the underlying aspects of the contemporary digital era. Nicolescu & Nicolescu (2019) provide a comprehensive framework to elucidate the process of digitalization, which commences with digitization, advances to digitalization, and culminates in digital transformation. The digital revolution transcends technological boundaries, exerting

multifaceted impacts on diverse facets of society such as the economy, environment, and human relationships. Building on this understanding, it becomes clear that digital leaders must possess a unique set of competencies to effectively navigate and manage organizations in this ever-evolving digital era. It is essential for leaders to conduct an analysis within their organization to determine its current position on the digitalization scale, thereby facilitating tailored strategies to effectively progress through the digital transformation journey.

The literature on leadership is characterized by a variety of definitions, approaches, and perspectives. Some scholars have focused on the leader as the central factor in understanding leadership, while others have emphasized the importance of relational or follower-centered perspectives. In addition, there has been a debate between those who view leadership in terms of traits versus behaviors, and those who draw on cognitive or affective frameworks to understand leadership and its effects. Hernandez et al. (2011) suggest that these various approaches can be categorized into four broad mechanisms: traits, behaviors, cognition, and affect. It is important to note that these categories are not mutually exclusive, and different leadership theories may draw on multiple mechanisms. Nonetheless, categorizing leadership theories in this way can provide a helpful framework for understanding the diversity of approaches in the field, and may ultimately contribute to the development of more integrated and nuanced theories of leadership.

Numerous studies have demonstrated the influence of emotions on decision-making and behavior. The current societal trend towards virtual activities, such as online training, remote work, and digital socialization, raises an intriguing possibility for the future of leadership and followership. Specifically, the prospect of robots serving in certain roles, free from the influence of human emotions, has been proposed. This suggests the potential for a new form of leadership, one that is driven by logic and impartiality rather than human emotions. However, the implications of this possibility are not yet fully understood, and further research is needed to explore the potential benefits and drawbacks of leadership and followership roles performed by robots in virtual environments. Nonetheless, the idea highlights the importance of exploring new forms of leadership and followership in the rapidly evolving landscape of the digital era. Avolio et al. (2014) have suggested that while it is unlikely for robot technology to fully control e-leadership processes and outcomes, the development of robots with the ability to recognize and express emotions, monitor psychological states, and provide suggestions to humans is a possibility worth considering. The potential implications of such a development for the future of leadership and decision-making are significant, and raise important ethical and moral questions that must be carefully considered.

Samani et al. (2012) have posited that robots possess a number of advantages over humans, making them well-suited to take on leadership positions. While the notion of replacing human leaders with robots may initially seem implausible, current technological trends and the increasing integration of technology into our daily lives suggest that the idea of robots assuming positions of responsibility is not only feasible, but may even be desirable, as Samani's analysis suggests. However, the

potential implications of such a development for the future of leadership and society as a whole must be carefully considered. The shift towards increased reliance on technology in leadership raises significant ethical and moral questions, and highlights the need for ongoing research and reflection on the intersection between technology and human leadership. As we navigate the ever-evolving digital landscape, it is essential that we remain vigilant in our examination of the potential benefits and drawbacks of these developments.

Effective communication has long been recognized as a crucial skill for leaders, and this importance has only increased in the digital age. As Chaudhary et al. (2022) point out, communication skills are particularly valuable for e-leaders, who must be able to listen to and understand what cannot be seen in virtual environments. Furthermore, the absence of physical proximity and the inability to read body language can make it challenging for e-leaders to establish and maintain trust with team members. As such, effective communication in virtual environments requires a high degree of skill and adaptability. E-leaders must be able to tailor their communication style to the needs of individual team members, and be able to navigate complex interpersonal dynamics in a virtual context. As Chaudhary and colleagues suggest, cultivating strong communication skills is essential for e-leaders seeking to succeed in the digital age.

3. Digital era leadership competencies

As we continue to move into the digital age, leadership has evolved to include a new set of skills and competencies that are necessary for success. Leaders in the digital era need to adapt to new technologies and ways of communication in order to effectively lead their teams. This requires developing new skills and competencies, such as digital literacy, virtual communication, and the ability to lead remote teams. A leader who possesses the skills and competencies necessary to effectively utilize digital technology has the potential to significantly influence the performance and outcomes of their organization. Adamovic's research (2018) highlights the significant challenges and complexities faced by leaders in the digital era. With the advent of new technologies and the rise of virtual teams, the role of leaders has become multifaceted, and they must possess a range of new competencies. Specifically, leaders must be culturally intelligent, demonstrating an awareness of and sensitivity to cultural differences. They must also act as boundary spanners, connecting individuals and groups within and across organizational boundaries. In addition, effective leaders in the digital era must practice people-oriented leadership, demonstrating an ability to motivate and inspire team members in a virtual setting.

In their recent research, Gilli et al. (2022) argue that the successful navigation of digital transformation within organizations requires leaders who possess the ability to recognize and capitalize on digital opportunities to create new business models. The authors suggest that these leaders must possess a combination of digital and business acumen in order to effectively guide their organizations

through the challenges and opportunities presented by the digital landscape. The study emphasizes the importance of developing and implementing leadership strategies that prioritize the integration of digital technologies within traditional business operations to achieve competitive advantage in the market. It is also important the way that the leaders are able to identify their stakeholders and to offer them a higher value, based on a corporate social responsibility (Cristache et al, 2019), that makes the organizations to be more attentive to the needs and expectations of the members of their ecosystems.

Bawany (2020) proposes the concept of "disruptive digital leaders" who have a visionary mindset when it comes to emerging technologies. These leaders possess a risk-tolerant attitude towards the volatile nature of future technologies and the unpredictability of user adoption. Their motivation stems from the challenge of creating new business value by harnessing breakthrough technologies. These leaders must be able to think innovatively and adapt quickly to the fast-paced digital landscape. The development of new approaches must address to all the key aspects of an organization, supporting the digital transformation along the whole value chain, how is the case of the supply chain management (Minculete et al., 2022).

Berman (2012) emphasizes the importance of enabling the networked workforce, which requires the right people and skills across the organization. In the digital era, a workplace that encourages social networking among employees, customers, and partners is vital for fostering innovation and driving business growth. However, this requires a shift from rigid rules to values-based guidelines. Business leaders must set the example and participate in online communities to bring in diverse viewpoints and create a collaborative culture. Berman's study highlights the need for organizations to embrace social networking and build a networked workforce to thrive in the digital age.

4. Developing leaders for the digital era

As we continue to progress further into the digital era, the role of leadership within organizations has become increasingly complex and challenging. Leaders now need to be able to navigate and harness the potential of the digital landscape in order to lead their teams towards success. This requires a new set of skills and competencies that are specific to the digital age. According to a study by Kane (2018) on digital leaders, executives have identified the most important skill that a leader must possess, which is the ability to provide vision and purpose. In essence, leaders must offer direction. The second most important skill concerns innovation: creating an environment in which people can experiment. Finally, in third place, is the ability to empower people to think differently. This research highlights the critical role that digital leaders play in guiding their organizations through the complex and rapidly changing digital landscape.

According to recent research conducted by Sheshadri et al. (2023), it was found that the successful adoption and utilization of digital technology can have a significant impact on organizational performance. Specifically, IT capability,

dynamic innovation ability, and dynamic digital workplace policies were identified as key factors that contribute to the emergence and use of digital technology. The study also revealed that employee performance and work-life balance serve as mediating contextual factors that can facilitate the impact of these exogenous factors on organizational performance. Additionally, the moderating effect of leadership support was found to play a crucial role in ensuring better organizational performance.

To stay ahead of the competition, leaders must adapt their leadership styles to incorporate the latest digital tools and techniques. Benitez et al. (2022) conducted an analysis on the impact of digital transformation on leadership roles and practices. According to their findings, digital transformation has resulted in significant changes in leadership roles and practices, particularly in terms of communication, collaboration, and decision-making. The authors emphasize the importance of leaders being able to adapt to these changes, which requires them to develop new skills and competencies, such as digital literacy and data analytics. The analysis concludes that the successful integration of digital technologies in leadership practices can lead to increased efficiency, productivity, and innovation within organizations. By investing in digital leadership development, businesses can unlock the potential of digital technology, streamline processes, and foster a more innovative and productive workforce. As such, it is imperative for leaders to recognize the importance of digital leadership and invest in the development of this critical skillset.

Certainly, the rapid advancements in digital technology have had a significant impact on the way organizations operate and the role of leaders within them. With the rise of remote work and the increasing importance of digital communication, the skills and competencies required of leaders in the digital era have undergone significant changes. As a result, a growing body of research has focused on identifying the key skills and characteristics necessary for effective digital leadership. One such study, conducted by Li et al. (2016), highlights the importance of hybrid skills for e-leaders, who are tasked with leading organizational change and practice. This highlights the need for leaders to continually learn and adapt to new technologies and trends, while also possessing a combination of management, market, ICT, and industry-specific skills.

5. Method

The research was based on a comprehensive review of the existing literature on this topic. The review was conducted to identify key trends and insights related to digital leadership skills, as well as to provide recommendations for business leaders and organizations seeking to thrive in the digital age. A comprehensive analysis of scholarly articles, reports, and other relevant sources was carried out to extract relevant data and insights. The resulting findings were carefully analyzed to identify emerging patterns and themes related to digital leadership skills.

6. Conclusion and future direction

After conducting a thorough review of the literature, our analysis has revealed that the skills and competencies required for effective digital leadership extend beyond technical expertise. Leaders must be able to provide direction, foster innovation, and empower their employees. Our study also highlights the importance of contextual factors, such as IT capability, dynamic innovation ability, and digital workplace policies, in facilitating effective digital leadership and driving organizational performance.

In light of our findings, it is recommended that organizations prioritize the development of digital leadership skills and competencies to enable sustainable growth and success in the digital age. Future research could further explore the specific strategies and approaches that can enhance the digital leadership capabilities of individuals and organizations. Moreover, it would be valuable to investigate the implications of emerging technologies, including AI and IoT, for the future of leadership and work in the digital era.

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