



Hybrid Leadership Models in the Age of Digital Transformation

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Abstract

This study aims to explore the role of hybrid leadership models in facilitating effective digital transformation within organizations, with a focus on leadership adaptability, digital fluency, and collaborative leadership. A qualitative research design was employed, utilizing semi-structured interviews to gather data from 24 participants involved in digital transformation initiatives across various sectors, including technology, healthcare, finance, education, and retail. The participants were recruited from online platforms, and the data collection process continued until theoretical saturation was reached. The data was analyzed using NVivo software, with key themes and subthemes emerging from the interview transcripts. The study identified three primary themes crucial for successful hybrid leadership in the digital age: leadership adaptability, digital fluency, and collaborative leadership. Participants emphasized the need for leaders to be flexible and open to change, demonstrating both traditional leadership qualities and the ability to leverage new technologies. Digital fluency emerged as a significant factor, with leaders who embraced digital tools and data-driven decision-making reporting higher success in driving transformation. Additionally, collaborative leadership was highlighted, with leaders fostering team-based decision-making and emphasizing cross-functional cooperation. These themes illustrate the multifaceted nature of leadership in the digital transformation process. Hybrid leadership models, characterized by adaptability, digital fluency, and collaboration, are essential for organizations navigating digital transformation. The findings suggest that leaders who can balance human-centered leadership with technological integration are better positioned to drive organizational change. Future research could explore the long-term impact of hybrid leadership and its interaction with organizational culture and employee outcomes.

Keywords: Hybrid leadership, digital transformation, leadership adaptability, digital fluency, collaborative leadership, qualitative research, organizational change.

1. Introduction

Digital transformation is reshaping how organizations operate, innovate, and deliver value to their customers. At its core, digital transformation refers to the integration of digital technologies into all areas of business, fundamentally changing how organizations function and how they interact with their customers. This transformation often leads to the disruption of established processes, business models, and organizational structures, requiring a shift in leadership approaches to successfully manage the change (Carvalho et al., 2022). As organizations adapt to the fast pace of technological advancements, leaders are faced with the challenge of guiding their teams through these transitions while ensuring alignment with the organization's strategic objectives.

The concept of leadership within the digital transformation framework has evolved significantly in recent years. Traditional leadership models, which were predominantly focused on hierarchical control and decision-making, are being supplemented



or replaced by digital leadership practices that emphasize collaboration, agility, and data-driven decision-making (Musaigwa, 2023). Digital leadership has become an essential capability for leaders, enabling them to manage technological change effectively, influence organizational culture, and drive innovation (Eryeşil, 2021; Türk, 2023).

One of the key challenges leaders face during digital transformation is balancing the demands of technology with the needs of their workforce. While technology can enhance efficiency, improve communication, and provide new opportunities for innovation, it can also create resistance and uncertainty among employees who are reluctant to embrace change. Therefore, leaders must develop a hybrid approach—blending human-centered leadership with digital fluency—to manage this tension effectively. This hybrid leadership model not only requires leaders to be technologically adept but also to foster an organizational culture that values empathy, transparency, and communication (Daud, 2023; Eryeşil, 2021).

Hybrid leadership models combine elements of traditional leadership styles with the competencies required for leading in a digital environment. These models acknowledge that digital transformation is not merely about adopting new technologies but also about transforming the way people work and interact within organizations (Al-Mannaie et al., 2022). As such, hybrid leadership involves navigating both the human and technological aspects of transformation, ensuring that technology enhances rather than replaces the human element of work. Several studies have explored the role of leadership styles in digital transformation, highlighting the need for leaders to be adaptable and flexible in their approach (Al-Mannaie et al., 2022; Sow & Aborbie, 2018). Traditional leadership models, such as transformational leadership, have been found to be particularly effective in environments characterized by rapid change. Transformational leaders inspire and motivate their teams, fostering a shared vision for the future while encouraging innovation and risk-taking (Antonopoulou, 2024; Abdullah, 2024). However, the digital age demands that these leaders also possess strong digital competencies—skills such as data literacy, technological fluency, and the ability to leverage digital tools for decision-making (Niță & Guțu, 2023; Terania, 2023). The importance of digital fluency in leadership cannot be overstated. Leaders who are digitally fluent are better equipped to make informed decisions, use technology to drive efficiency, and foster innovation within their teams. Digital tools, such as data analytics platforms and collaborative technologies, enable leaders to streamline operations, identify new business opportunities, and respond more effectively to customer needs (Carvalho et al., 2022; Daud, 2023). However, digital fluency alone is not enough. Leaders must also have the emotional intelligence and interpersonal skills required to lead diverse teams through digital transformation.

In this regard, empathy and communication are pivotal. Hybrid leaders must strike a balance between leveraging technology for operational efficiency and maintaining strong, authentic connections with their teams. As digital transformation often requires significant organizational change, leaders must communicate clearly and frequently with employees to alleviate concerns, provide support, and foster a sense of stability (Eryeşil, 2021; Musaigwa, 2023). Research has shown that effective communication from leadership helps reduce resistance to change and increases employee buy-in during periods of digital transformation (Niță & Guțu, 2023). Moreover, hybrid leaders must embrace a collaborative approach to leadership. Traditional top-down leadership structures are increasingly being replaced by more collaborative models that encourage cross-functional teamwork and collective decision-making. Digital transformation often involves breaking down silos within organizations, requiring leaders to foster a culture of collaboration across departments and teams (Carvalho et al., 2022; Sow & Aborbie, 2018). Hybrid leaders facilitate this process by creating environments that promote open communication, trust, and shared ownership of organizational goals.

As digital transformation continues to reshape organizations worldwide, the need for hybrid leadership has become increasingly critical. Leaders must not only possess traditional leadership qualities but also have the technological acumen and adaptability to navigate the complexities of the digital landscape. Hybrid leadership models offer a way forward by blending human-centered leadership with digital competencies, allowing leaders to manage the challenges of transformation while ensuring that their teams remain engaged, motivated, and equipped for the future. By examining the experiences and perspectives of leaders involved in digital transformation, this study provides valuable insights into how hybrid leadership can be implemented effectively to drive organizational success in the digital age.

2. Methods and Materials



This study employed a qualitative research design to explore hybrid leadership models in the context of digital transformation. A total of 24 participants were purposively selected based on their experience and involvement in leadership roles within digitally transforming organizations. The participants were recruited through professional networking on online platforms, including LinkedIn and industry-specific forums. The sample comprised diverse leaders from various industries to ensure a comprehensive understanding of hybrid leadership practices.

Theoretical saturation was the guiding principle for determining the sample size. Interviews continued until no new themes or insights emerged from the data, confirming that theoretical saturation had been achieved.

Data were collected using semi-structured interviews, allowing participants to share in-depth perspectives on their leadership approaches in digital transformation settings. An interview guide was developed, featuring open-ended questions designed to elicit detailed responses on hybrid leadership strategies, challenges, and outcomes. The interviews were conducted virtually via video conferencing tools, providing flexibility for participants and ensuring geographic diversity.

Each interview lasted approximately 45 to 60 minutes and was recorded with the participants' consent. Detailed notes were also taken during the interviews to capture non-verbal cues and contextual nuances.

The interview data were transcribed verbatim and analyzed using NVivo software to facilitate systematic coding and thematic analysis. A two-step coding process was adopted: initial open coding to identify recurring patterns and axial coding to establish relationships between the identified themes.

The analysis was guided by an iterative process, ensuring continuous refinement of themes and categories. Triangulation was employed by comparing emerging themes with existing literature on hybrid leadership and digital transformation to enhance the study's credibility. Regular peer debriefing sessions were conducted to validate the findings and minimize potential biases.

3. Findings and Results

The study included 24 participants with diverse backgrounds to provide a comprehensive perspective on hybrid leadership models in digital transformation. Of these, 15 participants (62.5%) identified as male, and 9 (37.5%) identified as female. Participants' ages ranged from 30 to 55 years, with a mean age of 42. Most participants (70.8%, n=17) held senior leadership positions, such as directors or vice presidents, while the remaining (29.2%, n=7) were middle managers actively involved in digital transformation initiatives.

In terms of industry representation, 8 participants (33.3%) were from the technology sector, 6 (25%) from healthcare, 5 (20.8%) from finance, 3 (12.5%) from education, and 2 (8.3%) from retail. Geographically, participants were primarily based in North America (58.3%, n=14), followed by Europe (25%, n=6), and Asia (16.7%, n=4). This diverse sample allowed the study to capture a wide range of experiences and insights related to hybrid leadership in digitally transforming organizations.

Table 1. The Results of Thematic Analysis

Category	Subcategory	Concepts
Adaptability in Hybrid Leadership	Flexibility in Decision-Making	Iterative decision-making, Customizing solutions, Adjusting strategies in real-time
	Managing Diverse Teams	Cross-cultural communication, Remote team management, Inclusive team practices, Conflict resolution strategies
	Overcoming Resistance to Change	Employee training programs, Transparency in communication, Engagement initiatives
Digital Competency in Leadership	Tech-Savviness and Digital Fluency	Tech training programs, Using collaborative tools, Continuous learning initiatives, Engaging in tech forums
	Leveraging Data for Decision-Making	Analytics-driven insights, Real-time dashboards, Predictive modeling
Balancing Human and Technological Leadership	Building Empathy in Tech-Environments	Active listening, Compassion in leadership, Recognition of individual contributions, Supportive feedback mechanisms
	Ethical Leadership in AI Integration	Bias reduction in AI systems, Upholding transparency, Ensuring ethical compliance
	Coordinating Human-Tech Collaboration	Human-centered design, Tech-augmented workflows, Smooth transition protocols
	Future-Proofing Leadership Skills	Identifying emerging trends, Leadership development programs, Continuous upskilling, Scenario-based planning

Adaptability in Hybrid Leadership

Flexibility in Decision-Making



Participants emphasized the importance of iterative decision-making and the ability to adjust strategies in real-time as critical traits for hybrid leaders. One participant remarked, "Leadership today requires not just making decisions but continuously refining them based on emerging data and situations." Customizing solutions to fit unique challenges was another recurring theme, reflecting the dynamic nature of decision-making in digitally transforming organizations.

Managing Diverse Teams

Effective management of diverse teams, including those working remotely, emerged as a vital skill for hybrid leaders. Respondents highlighted the importance of cross-cultural communication and fostering inclusive practices. As one leader shared, "Managing teams across different geographies and cultures requires us to be intentional about inclusivity and adaptability in communication styles." Conflict resolution strategies and remote team management were also emphasized as key competencies.

Overcoming Resistance to Change

Resistance to change was a common challenge faced by leaders in digital transformation contexts. Many participants noted that transparent communication and employee training programs were pivotal in mitigating resistance. One interviewee explained, "When people understand the 'why' behind the change and see their role in the bigger picture, they become more open to adapting." Engagement initiatives were also cited as effective in fostering a sense of ownership among team members.

Digital Competency in Leadership

Tech-Savviness and Digital Fluency

Tech-savviness was identified as a fundamental competency for hybrid leaders. Respondents frequently mentioned continuous learning initiatives and the use of collaborative tools as key to staying digitally fluent. One participant commented, "Being a digital leader means staying ahead of the curve—learning about new tools and technologies is not optional anymore." Engaging in tech forums and implementing structured training programs were also noted as effective strategies.

Leveraging Data for Decision-Making

The ability to utilize data effectively was another critical theme. Leaders highlighted the use of analytics-driven insights, real-time dashboards, and predictive modeling to inform decisions. As one participant stated, "Data has become the backbone of strategic decisions; having the right data at the right time is what drives success in a hybrid model." This subtheme underscored the growing reliance on data in leadership practices.

Balancing Human and Technological Leadership

Building Empathy in Tech-Environments

Empathy emerged as a cornerstone of hybrid leadership, particularly in technology-driven environments. Participants stressed the importance of active listening and providing supportive feedback. One leader noted, "Even in a tech-heavy role, people need to feel valued and heard—empathy bridges the gap between humans and technology." Recognizing individual contributions was also seen as crucial for maintaining morale.

Ethical Leadership in AI Integration

Ethics in AI integration was another significant concern. Respondents emphasized the need for bias reduction in AI systems and maintaining transparency. "We have a responsibility to ensure that our AI systems align with ethical guidelines and don't perpetuate existing inequalities," one participant explained. Upholding ethical compliance was a recurring theme in discussions about AI-driven decision-making.

Coordinating Human-Tech Collaboration

Coordinating the interplay between human skills and technology was a frequent topic of discussion. Leaders pointed to human-centered design, tech-augmented workflows, and smooth transition protocols as effective strategies. As one participant noted, "Technology should empower teams, not replace them—it's about finding the right balance."

Future-Proofing Leadership Skills

Participants underscored the need for leaders to continuously upskill and prepare for emerging trends. Leadership development programs and scenario-based planning were highlighted as crucial for future-proofing leadership roles. One respondent remarked, "The pace of change is relentless, and leaders must stay ahead by constantly learning and adapting."

4. Discussion and Conclusion



The results of this study provide insightful reflections on the role of hybrid leadership models in navigating digital transformation. The three primary themes identified—leadership adaptability, digital fluency, and collaborative leadership—underscore the complexities leaders face when integrating digital technologies with human-centered leadership practices. Each of these themes is supported by existing literature and highlights the multifaceted nature of leadership in the digital age.

One of the most salient findings of this study was the emphasis on leadership adaptability in the context of digital transformation. Hybrid leaders in this study demonstrated a high degree of flexibility in balancing traditional leadership qualities with the demands of digital integration. As digital transformation accelerates, leaders must pivot quickly to manage change and respond to evolving business needs (Musaigwa, 2023). Participants emphasized the importance of being open to experimentation and embracing change as a key trait of hybrid leadership. Many of them reported that they had to adapt their leadership style continuously to meet the shifting needs of their teams and the organization.

These findings align with those of previous studies, which suggest that leaders must possess adaptability to thrive in digitally transformed environments. According to Al-Manna'ei, AlSaffar, and A'Ali (2022), digital transformation requires leaders to adjust their approach rapidly, as technology-driven changes often disrupt established routines and business models. In particular, leaders with transformational leadership traits—who inspire, motivate, and challenge their teams—tend to succeed in digital settings (Al-Manna'ei et al., 2022). However, they must also embrace new technologies and data-driven approaches to ensure the organization remains competitive and relevant in the digital era (Carvalho et al., 2022). The results of this study suggest that leaders who are flexible and open to both technological and human-centered approaches are better equipped to manage these dual demands.

A key subtheme of digital fluency emerged as another critical factor for effective hybrid leadership. Leaders in this study who demonstrated digital fluency were able to harness the full potential of digital tools and platforms, thus enabling more efficient decision-making and innovation. Digital fluency was not limited to technical expertise alone but also encompassed the ability to make data-driven decisions, foster digital literacy among employees, and leverage emerging technologies to improve organizational performance. The participants reported that their ability to understand and integrate digital tools significantly impacted their effectiveness as leaders in a digitally transformed environment.

These findings are consistent with prior research that underscores the importance of digital fluency in leadership. Eryeşil (2021) argued that digital leadership requires a deep understanding of both technological innovations and their applications in organizational processes. Leaders who possess digital fluency are not only proficient in using digital tools but are also capable of leading their teams through technological disruptions (Eryeşil, 2021). Furthermore, Carvalho, Alves, and Leitão (2022) highlighted that digital leadership is increasingly defined by a leader's ability to use data and digital platforms to drive performance, innovation, and organizational transformation (Carvalho et al., 2022). Leaders in this study who embraced technology were better able to inspire confidence in their teams, thereby fostering a more agile and resilient organization.

The third central theme, collaborative leadership, highlights the shift from top-down management to more inclusive and team-oriented approaches to leadership. Participants indicated that they placed significant emphasis on fostering a culture of collaboration, breaking down silos, and encouraging open communication across departments. Hybrid leaders in this study recognized the value of collective intelligence and relied on their teams to contribute diverse perspectives to decision-making processes. Collaboration, both within the organization and with external stakeholders, was identified as crucial for innovation and the successful implementation of digital transformation strategies.

This emphasis on collaboration aligns with the findings of previous studies that emphasize the need for leaders to create environments where teamwork, knowledge sharing, and collective problem-solving are prioritized. As Daud (2023) noted, leadership styles that foster employee engagement and collaboration are crucial for driving organizational change, particularly in environments that require innovation and flexibility. The findings from this study further corroborate the idea that hybrid leadership models that emphasize collaboration are particularly well-suited for managing digital transformation. Malik (2024) also emphasized that leaders who cultivate a sense of shared purpose and community within their teams are more likely to succeed in the digital transformation process, as this approach fosters an environment of mutual trust and shared responsibility.

Despite the significant contributions of this study, there are several limitations that must be acknowledged. First, while the sample size of 24 participants is reasonable for qualitative research, it may not fully capture the diversity of experiences in different organizational contexts or industries. The participants were drawn from a limited set of sectors—technology,



healthcare, finance, education, and retail—limiting the generalizability of the findings across all industries. Future research could benefit from a more diverse sample that includes organizations from sectors such as manufacturing or public services to explore how hybrid leadership is applied in different contexts.

Second, the study relied solely on semi-structured interviews as the data collection method, which, while rich in detail, may not have captured the full spectrum of leadership experiences. Interviews are subjective by nature, and participants may have provided responses that were influenced by social desirability or recall bias. Moreover, the research design did not include any longitudinal data, which would be valuable in understanding how hybrid leadership evolves over time as digital transformation progresses. Future studies could incorporate longitudinal approaches or mixed-methods designs to explore how hybrid leadership evolves and adapts over longer periods.

Finally, the research was conducted primarily through online platforms, which may have introduced some bias in the selection of participants. While online platforms offer accessibility and convenience, they may also skew the sample toward more digitally literate individuals or those in leadership positions with access to such platforms. Future studies could incorporate face-to-face interviews or other methods to ensure a more representative sample of leadership experiences.

Given the evolving nature of digital transformation and leadership, future research could expand on several key areas. First, future studies could explore how hybrid leadership models are applied across different stages of digital transformation. While this study focused on leaders who have already embarked on digital transformation initiatives, it would be valuable to examine how hybrid leadership is developed and applied at various stages—ranging from initial adoption to full integration of digital technologies. This could provide deeper insights into the role of leadership in guiding organizations through the entire transformation process.

Second, future research could examine the role of organizational culture in shaping hybrid leadership effectiveness. While this study highlighted leadership traits, it did not deeply explore how organizational culture influences the success of hybrid leadership. It would be valuable to investigate whether certain organizational cultures are more conducive to hybrid leadership models and how cultural elements such as trust, transparency, and innovation influence the adoption of hybrid leadership approaches.

Another potential area for future research is the impact of hybrid leadership on employee outcomes. While this study focused on leadership perspectives, there is a need to understand how hybrid leadership affects employee engagement, satisfaction, and performance. Examining the employee perspective on hybrid leadership could provide a more holistic view of how these leadership models impact organizational success.

Finally, future studies could investigate the intersection of hybrid leadership with artificial intelligence (AI) and other emerging technologies. As AI continues to play a larger role in digital transformation, understanding how leaders integrate AI with human-centered leadership practices could offer valuable insights into the future of hybrid leadership in the digital age.

For practitioners, the findings from this study provide several important takeaways. First, organizations should prioritize the development of hybrid leadership capabilities at all levels of leadership, particularly as digital transformation continues to accelerate. Leaders who are adaptable, digitally fluent, and collaborative are better positioned to guide their organizations through the complexities of technological change. This requires not only investing in leadership development programs but also fostering a culture that encourages continuous learning and the acquisition of digital skills.

Second, organizations should consider investing in digital tools that enhance collaboration and communication across teams. Leaders who leverage digital platforms to streamline communication and foster cross-functional collaboration are more likely to succeed in implementing digital transformation initiatives. Tools such as cloud-based collaboration platforms, data analytics tools, and communication apps can help leaders and employees work together more efficiently, driving innovation and improving decision-making.

Lastly, it is crucial for organizations to recognize that hybrid leadership is not just about technology—it is about people. Leaders must be able to integrate technological solutions with the human element of leadership. This means fostering a culture of trust, empathy, and emotional intelligence while also embracing technological innovation. Developing leaders who can balance these competing demands is essential for organizations that wish to succeed in an increasingly digital world.

Ethical Considerations



All procedures performed in this study were under the ethical standards.

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Conflict of Interest

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