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Digital leadership in the public sector: a scoping review and outlook

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ABSTRACT

In an era characterized by rapidly changing technological landscapes, public sector organizations find themselves in a pressing need to initiate efficient digital transformation programs for digital government. Managing digital transformation initiatives has grown increasingly complex, as leaders are often confronted with a plethora of demands that can be conflicting and, at times, difficult to determine and prioritize, especially if any aspect of the capability to transform is missing. Consequently, it has become vital to gain a clear understanding of digital leadership for both practitioners and academics. In this article, we conducted a comprehensive scoping review of recent studies on digital leadership and the individuals who exemplify it – digital leaders. Our thematic analysis allowed us to categorize our findings into succinct conceptual areas including the definition of digital leadership, the theoretical underpinnings, competencies inherent to digital leadership capabilities, critical success factors, and the role of digital leadership within public sector organizations.

KEYWORDS

Digital leadership; digital transformation; digital leader; capabilities; competencies

Understanding digital leadership in an era of rapid transformation

Public sector is not exempt from the challenges posed by rapid digital transformation. In many ways, the challenges to the public sector may be even greater than those experienced in the private sector (Halsbenning et al., 2021; Lemke et al., 2021). Overall, the pace of technological change is accelerating relentlessly, pushing many organizations to implement technology-based solutions faster than at any other point in history (M. Tate et al., 2023). This impetus has driven organizations of all sizes and sectors to adopt technology-based solutions more swiftly than ever before. More than half of Fortune 500 companies went bankrupt, were acquired, ceased to exist, or dropped off the list largely due to digital disruption. Public organizations may undergo restructuring or reorganizations in response to government policy changes, shifts in leadership, or budgetary adjustments, and more recently public organization restructuring is increasingly more often prompted by digital transformation (Kusanke, Pilgenroeder, et al., 2023).

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Simply put, the ability to strategically use digital initiatives to achieve business goals is essential to an organization's survival, irrespective of the sector, public or private (Hofmann & Ogonek, 2018). In the public sector, this entails a commitment to enhancing service delivery, ensuring data security, and promoting transparency, all within the constraints of public accountability and often limited resources – this encompasses a broad spectrum of existing and innovative business models as well as critical upgrades in cloud infrastructure and security, has required profound organizational transformations (Karippur & Balaramachandran, 2022; R  th & Netzer, 2020).

Guiding these transformations, however, has emerged as a daunting task for public managers and executives confronted with an array of advice on how to lead or adapt in the digital landscape (Hunnius & Schuppan, 2013). Digital Leadership (DL) plays a crucial role in this transformation. Despite the importance of Digital Leadership, its scope and definition seem fluid, with its presence recorded as both a strategy and an outcome (Adie et al., 2022). Individuals, agencies, organizations and even nations/states have all been identified as digital leaders (Karippur & Balaramachandran, 2022). On the other hand, organizations across a range of industries have identified digital leadership *strategies* as key to their future success. Examples include Nordstrom, Tesla, Autodesk, Ikea, Lego, Burberry, Unilever, Hasbro, and Pfizer as well as central/federal and local government departments around the world such as the UK's Central Digital and Data Office's strategy to elevate at least 50 of the top 75 identified services by replacing legacy technology and automating the operational back end of services (Kusanke, Kendziorra, et al., 2023; B. Tate, 2023).

Digital leadership strategies often include focusing on sector-specific innovation, new business models, and developing new products and services (Lemke et al., 2021; Rossi et al., 2022). They are often characterized by having a fail-fast agile culture, centralizing operating models with a strong outcome-driven incentive system, and empowering team leads or change agents to champion digital projects and implement rapid product or system improvement – the digital transformation of the public sector poses a substantial leadership challenge (Kusanke, Kendziorra, et al., 2023), necessitating adept leaders who can navigate complex transformation processes (Schenk & Dolata, 2020). This has spurred a labor market demand for innovators capable of redefining traditional organizational structures and encouraging staff involvement in transformation initiatives while the scholarly dialogue on this transformation is still embryonic. Consequently, it's unsurprising that both practitioners and academics have begun to deconstruct the concept, examining how it diverges from other well-established leadership models and theories. This discourse underpins our objective to identify and validate leadership competencies relevant to building digital transformation capabilities across the public sector, thereby contributing to our understanding of the challenges inherent in public sector digital leadership.

In this article, we 'unpack' notions of digital leadership, with a particular focus on the public sector. By conducting a scoping review and thematic analysis, we examine digital leadership definitions, the foundations of digital leadership theory, digital leadership competencies and skills, critical success factors and outcomes for digital leadership. Based on this, we suggest a research agenda.

Unpacking digital leadership: literature search criteria and analytical method

Literature analysis methods tend to serve one of four objectives, as per Rowe (2014): they summarize previous studies, scrutinize past research's merits, elucidate results from prior research streams, or clarify divergent viewpoints from past studies. Our work fits into the first type, namely a scoping review. This review type aims to offer an overview of the range of research in a field, especially beneficial for domains such as digital leadership (Paré et al., 2016). Such analysis can be useful for a more systematic literature review in the future, illuminate gaps in the field, and unearth promising areas for future research (Paré et al., 2015).

Our decision to conduct a scoping review of digital leadership arose from the domain's recent emergence, with 'digital leadership' or 'digital leader' only newly appearing in the literature, especially in the Public Administration field. This scoping review allows us to grasp new aspects such as digital leadership definitions, the skills of digital leaders, and the theoretical grounding of digital leadership, and to suggest prospective research areas for digital leadership of interest to both future researchers and practitioners. We followed a method suggested by Paré et al. (2015), Anderson et al. (2008), and Archer et al. (2011) to conduct our scoping review. We aimed to comprehend the range of digital leadership research, providing insight into new concepts, challenges, and ideas. In this pursuit, we undertook a literature search, selected papers based on specific criteria, and performed a literature analysis using the thematic review method (Anderson et al., 2008; Paré et al., 2015).

Accomplishing a meaningful literature analysis involves creating new knowledge, not merely echoing what is already known (Dodgson, 2021, p. 27). We adopted the keywords search strategy (Estellés-Arolas & González-Ladrón De Guevara, 2012), targeting peer-reviewed digital leadership literature. We began our search using the ABI/INFORM Complete database and SCOPUS, with 'digital leadership' and 'digital leader' as our keywords, thereby excluding papers with a focus on related but distinct terms such as "e-leadership. We narrowed it down by applying additional criteria such as peer-reviewed journals from the last decade, English language, and the presence of our search terms in the title, abstract, or keywords (Nevo & Kotlarsky, 2020). We further extended our search for comprehensiveness, which included an examination of both scholarly and industry sources.

The analytical method we chose for our scoping review was thematic analysis (Paré et al., 2015), a technique for identifying, organizing, and offering insights into patterns or themes within a data set (Braun & Clarke, 2012). We found this method to be particularly suited for gaining insights based on conceptual findings from the literature, advancing our understanding of digital leadership (Dodgson, 2021). Implementing thematic analysis followed Braun and Clarke's (2012) suggested approach, with steps including data familiarization, initial code generation, theme searching, potential theme review, theme definition and naming.

Foundations of digital leadership theory

It seems logical that digital leadership should be considered within the wider context of leadership theories and practices. It is necessary to understand how digital leadership deviates from conventional leadership contexts. For instance, digital leadership might be more devolved and collaborative (Hearsum, 2015), or more driven by business and technology (Temelkova, 2018), than other leadership forms. The academic world depicts digital leadership within a wider leadership theoretical scaffold, as our exploration of the literature presents. Theories often associated with digital leadership encompass transformational, transactional, visionary, and charismatic leadership (Gençer & Samur, 2016) – these theories detail not only the leaders' traits and behaviors but also outline the results they are anticipated to produce (Braf & Melin, 2020).

Transformational leaders stand out with their ability to inspire, motivate, and drive employees toward fulfilling organizational goals and strategic visions (Mohiuddin, 2017; Wang & Huang, 2009; Wofford et al., 1998). This leadership style results in individual-level outcomes such as employee satisfaction, performance improvement, and positive change (Hargis et al., 2011). Transactional leaders, on the other hand, build relationships with their followers based on reciprocity, setting clear objectives and expectations often backed by incentives (Hargis et al., 2011; Wofford et al., 1998). These leaders are results-oriented and task-driven, focusing primarily on achieving short-term goals and meeting organizational objectives (McCleskey, 2014). Visionary leaders stir their followers to chase ambitious organizational goals. They foster a sense of commitment, trust, and motivation by communicating clear objectives and embodying the commitments they set forth (Taylor et al., 2014). Charismatic leaders, frequently seen as transformational, elevate self-esteem and collective efficacy, having similar impacts on their followers (Jackson & Parry, 2018).

Literature analysis suggests that digital leadership could comfortably align with these preexisting leadership theories. This implies that digital leadership isn't a novel concept in its entirety, at least for now, and current leadership understanding could prove advantageous. Therefore, at face value, digital leaders could be defined based on any of these theories or frameworks similar to these. Yet, a hesitance to pigeonhole digital leadership under a single theoretical lens is evident. For instance, it's argued that a digital leader could exhibit a blend of these leadership theories since they frequently juggle performance-driven results and relationship building – both essential for spearheading digital transformation or business innovation (Eberl & Drews, 2021).

The classical leadership theories have also made a significant contribution to understanding how leaders operate such as trait theories, which focus on the leader's characteristics, and behavioral theories, which look at how leaders act (Jackson & Parry, 2018). They also include contingency theories, which propose that the leadership style used depends on the situation and the people involved. In the digital age, these theories may still be relevant, but they need to be adapted (Adie et al., 2022). For instance, a digital leader may need to show more agility (a trait) and be more open to innovation (a behavior). They may also need to be more adaptive and flexible, given the rapid changes in the digital landscape (a contingency).

We argue that digital leadership has been built upon the strong foundation of existing leadership theories. Yet, it also expands the theoretical framework to consider the unique

demands and opportunities of the digital era with data-driven decision-making and agile methods. Hence, the field of digital leadership studies can be seen as a vital extension of leadership theories, providing new insights into how leadership is enacted in our increasingly digital environment. This presents an important area for future research as we study deeper into the uncharted territory of digital leadership theory.

In the context of digital leadership within the public sector, a critical examination of the prevailing concepts and beliefs that have historically informed the understanding of leadership is important (Braf & Melin, 2020). A number of leadership paradigms, despite being subject to scrutiny and challenge by contemporary research, persistently influence both thought and practice (Haslam et al., 2024). These enduring leadership paradigms continue to shape digital leadership practices and ideas, notwithstanding the dynamic changes in digital landscapes as well as the changing needs of the public sector (Lips, 2019). Such paradigms, often colloquially referred to as ‘zombie leadership,’ sustain their influence not necessarily on the grounds of empirical support but due to their appeal to leadership industry, including IT consultants, media, academia, and government agencies (Haslam et al., 2024). These entities propagate leadership concepts that flatter those in positions of power and also cater to the wider anxieties prevalent in an increasingly complex societal context. Among these persistent ideas is the notion that leadership is predominantly the purview of individuals in formal leadership roles, rather than recognizing it as a distributed process. Additionally, there exists a strong idea that leadership effectiveness is indicative of possessing certain intrinsic qualities, such as intelligence or charisma, often sidelining the significance of relational dynamics. This is accompanied by a belief in the existence of universal leadership behaviors such as being fair or initiating change, which tend to overlook the contextual nature of effective leadership. Furthermore, the conceptualization of leadership as an elite skill, exclusive to a select few, and the assumption of its universally positive impact may fail to account for the critical importance of fostering collaboration and empowering teams and individuals.

Digital leadership competencies and skillsets

There’s an ongoing debate among researchers about the necessary competencies and skills a digital leader should possess as the building blocks of organizational capabilities (E. L. Valentine, 2016). The literature broadly clusters these competency sets, and associated skill sets into four categories: leadership skills, digital skills, business skills, and general social/soft skills (Adie et al., 2022).

Starting with the leadership capability cluster, a digital leader should have foundational competencies to create a vision of a digital future for their organization and guide others to yield results from digital transformation in their organization. Competencies might span from transformational, transactional, and visionary experience, knowledge and skills to agile leadership and governance, adaptability, trust, or cultural inclusivity (Hearsum, 2015; L. W. W. Mihardjo & Rukmana, 2018; Mihardjo et al., 2019a). These are amongst the skills that make up the competencies that underpin leadership capabilities during digital or business transformation efforts.

The Digital skills cluster embodies technology- and data-focused competencies that embody the technical knowledge and experience that digital leaders should possess to demonstrate DL capability. Overall, a digital leader needs to be tech-savvy as well as

digital and data transformation capable. Some digital competencies, as inferred from various studies, require a technical skills specialization, and knowledge of emerging technologies. New roles have emerged such as chief digital officer, digital innovator, coordinator, or advocate (El Sawy et al., 2016; Haffke et al., 2016; Zeike et al., 2019). These clusters of digital competencies, when aligned with the organization's strategy, form the foundation of digital transformation capability, enabling leaders to focus and prioritize transformation or business innovation initiatives, and add measurable value (M. Tate et al., 2023; Timbrell & Valentine, 2023).

In addition to leadership and digital capabilities, digital leaders also need a solid range of business competencies. Business skill clusters might include digital business strategies, the creation of new digital business models, and the creation of associated data and Information and Technology (IT) strategies. The result of these capabilities is an increased capacity to create value for both stakeholders and customers (Brett, 2019; Oberer & Erkollar, 2018; Westerman et al., 2012) through prioritized outcomes and targeted investment. The associated business competencies and skill clusters enable digital leaders to focus on the broader business and operational effectiveness aspects underpinned by the data and analytics required to support and enable their organization's digital transformation efforts.

Furthermore, digital leaders also need to bring social or 'soft' capabilities to the table. These competencies and the associated skills clusters include cultural competency, relationship building, innovation, communication, creativity, and agile leadership and governance (Attar & Abdul-Kareem, 2020; Narbona, 2016; R  th & Netzer, 2020; Wasono & Furinto, 2018). These competencies, increasingly becoming critical, enable digital leaders to foster the relationships and collaboration required for managing digital transformation strategies and initiatives and to leverage the vast array of opportunities afforded by new and emerging technologies.

The literature suggests that effective digital leaders need a balanced mix of technology, business, and soft skills (Adie et al., 2022). This holistic approach may avoid over-emphasis on one skill set at the expense of others, such as core leadership competencies or business understanding. For digital leadership to be effective, all these capabilities need to coexist and function harmoniously.

Strategic outcomes of digital leadership

Critical success factors in digital leadership are context-specific, varying based on the nature, size and scope of organizational strategies, business plans, sector-specific needs and subjective perspectives on what constitutes success. Yet, according to the literature, many researchers suggest that a digital leader's main critical success factor lies in their capability to drive business transformation or create public value (see Table 1).

While leading digital transformational initiatives often tops the digital leader's priority list, such efforts alone do not constitute success unless they result in tangible business benefits or public value creation (Wasono & Furinto, 2018). As such, A consensus among researchers, therefore, posits that digital leaders are successful when they achieve meaningful and measurable business transformation or public value creation (Petry, 2018; Wasono & Furinto, 2018). This, in turn, means that a digital leader's proficiency in grasping core business objectives or policy goals and

Table 1. Public sector digital transformation capability, competencies, skills and knowledge.

Over-arching Capability	Competencies	Skills, Knowledge, and Ability
Digital Leadership to achieve Digital Transformation	Policy competencies	• Understanding and navigation of the complexities of governmental and bureaucratic structures (Getha-Taylor & Lee, 2008; Hu, 2018; Kusanke, Kendziorra, et al., 2023). • Managing political pressures, policy constraints, legal requirements, competing demands and public scrutiny (Distel et al., 2019; Khan & Khan, 2019). • Providing agile governance mechanisms to inform government scrutiny and minimize risk (Lappi & Aaltonen, 2017; E. L. Valentine, 2016)
	Social competencies	• Aptitude to communicate, network, and collaborate effectively in a digital landscape (Clarke, 2020; O'Leary et al., 2012; Tigre et al., 2023) • Capacity to integrate technology in the organization's social context (Lnenicka & Komarkova, 2019; Makasi et al., 2022)
	Technical competencies	• Command over relevant digital tools and technologies to bring about digital, information and technology transformation (Kusanke, Pilgenroeder, et al., 2023; Timbrell & Valentine, 2023) • Embracing technological advancements and ensuring data privacy, security, and regulatory compliance (Chansukree et al., 2022; Kuziemski & Misuraca, 2020; Shin, 2013)
	Organizational competencies	• Ability to organize and mobilize resources to achieve prioritized outcomes in a digital context (Kusanke, Kendziorra, et al., 2023) • Knowledge of organizational design, administrative processes, and workflows (Hunnius et al., 2015)
	Management competencies	• Ability to envision, lead, manage, and transform the organization in a digitally enabled public sector (Estevez & Janowski, 2013; Khan & Khan, 2019; Kusanke, Kendziorra, et al., 2023). • Ability to create public value and strategically achieve policy alignment (M. Tate et al., 2023; Twizeyimana & Andersson, 2019).

delivering technology changes that support these objectives becomes a crucial factor in their employment and performance assessment (Brett, 2019; Weiner et al., 2016), underpinned by the data and IT transformations that support and enable the desired digital transformation.

Digital leaders occupy various roles and positions within an organization. However, the literature indicates that digital leadership is not just a role or title but also a strategic outcome that permeates every level of leadership within an organization – from C-suite executives and board members down to front-line staff (E. L. Valentine, 2016; E. Valentine & Stewart, 2015). This paints digital leadership as a broader concept than traditional IT leadership, which primarily focuses on leading the IT department. However, the degree of support for digital transformation, business change, and public value creation may differ between roles based on the nature, size and scope of the required transformation and each public sector leader's competencies, responsibilities, and accountabilities. Therefore, comprehending the competencies, responsibilities, and accountabilities of digital leaders at both individual and organizational levels could contribute significantly to our understanding of digital leadership. Such knowledge presents an intriguing area for future research.

Public sector context of digital leadership

Concerning public sector administration, the interpretation of digital leadership and its associated competencies assumes a unique sector-specific perspective (Estevez & Janowski, 2013). This differentiation is particularly evident when reflecting on the role of unique sector capabilities or industry-specific organizational capability in the transformation of the public sector (Ogonek & Becker, 2018), a concept that denotes a sector's or an organization's ability to perform its functions efficiently by harnessing an amalgamation of unique, irreplicable resources, skills, and expertise in the sector/organization (Timbrell & Valentine, 2023). This unique sector capability or industry-specific capability, cultivated internally over time and spanning a broad spectrum from technical skills to cutting-edge technologies, contributes to the formation of a sector's or organization's distinctive identity. Regarding public sector identity, public sector organizations function within a multifaceted array of regulatory, legal, and public accountability considerations (Cho et al., 2023), contrary to their private sector counterparts. This intricate landscape inevitably should target, focus and mold the competencies and strategies necessitated for digital leaders in the public sector. One context unique to the public sector is the assumed requirement to translate over-arching government strategy and its action plan into aligned goals and measurable outcomes for each department. For example, New Zealand's Digital Government Strategy involves setting initiatives for enhancing rural connectivity, developing STEAM internships, establishing a Cyber Resilience Framework, launching a Digital Skills Body, a Data, Ethics, and AI Center, and a national health information platform, which is closely aligned with department-specific goals and outcomes.

While general core competencies, as posited by Prahalad and Hamel (1990), are derived from these organizational capabilities and serve as a key distinguishing success factor among competing entities, in public sector digital leadership, the interaction between these general core competencies and unique organizational capabilities are also essential considerations. These include data-driven decision-making, cybersecurity, innovation, and policy compliance. In terms of leadership competencies, public sector digital leaders need a grasp of not only transformational leadership, digital business, and general social/soft skills. Kusanke, Kendziorra, et al. (2023) add useful clarification, proposing digital leadership competencies specifically designed for application within the public sector. Distel et al. (2019) identified competencies as well as personality traits as two primary categories in their study on e-government competencies, further divided into 12 sub-categories showing specific skills – competencies cover professional abilities across eight areas including IS/IT skills and public policy planning while personality traits, inherent and not learned through education, were broken down into four sub-categories such as analytical skills and self-management.

As summarized in Table 1, these emerging competency descriptions provide an increasingly holistic view of the knowledge and skills required for effective leadership in the digital era within the public sector. For example, when we consider competencies for public sector digital leaders, what emerges is a capability to negotiate a delicate balance between embracing technological advancements and ensuring data privacy, security, and regulatory compliance required by the public sector context (Chansukree et al., 2022; Shin, 2013). The challenges of bridging the digital divide and ensuring

equitable access to public services also underscore the importance of inclusivity and accessibility as core elements of their digital competencies (Lnenicka & Komarkova, 2019). Similarly, the business competencies of public sector digital leaders differ from their private sector counterparts. While the basics of effective business operations including finance, people and culture, and IT remain similar, public sector leaders need to understand public administration processes, governmental compliance requirements, and the intricacies of policy implementation (Hu, 2018). Their mandate often includes delivering value to the public, enhancing citizen engagement, and promoting digital inclusion (Allen et al., 2020; Makasi et al., 2022). Furthermore, the ability to translate policy objectives into digital strategies and aligning technology initiatives with public value creation becomes essential (Makasi et al., 2021).

In terms of soft skills, public sector digital leaders need a heightened focus on communication, particularly in managing public expectations, communicating policy implications, and handling potential controversies or crises. Relationship building in the public sector is multi-dimensional, involving internal relationships within the bureaucracy, external relationships with other governmental agencies, relationships with elected officials, and the broader public (Gil-Garcia et al., 2016).

In the public sector, success factors are typically associated with public value creation, citizen satisfaction, service accessibility, and policy alignment (M. Tate et al., 2023; Twizeyimana & Andersson, 2019). As such, digital leaders in the public sector are often expected to drive digital transformation initiatives that enhance public service delivery, improve citizen engagement, and contribute to wider policy objectives. Thus, the strategic outcomes and job roles of digital leaders in public sector organizations extend beyond business leadership and involve a more complex, sector-wide, and public-oriented digital transformation mandate. By consistently nurturing and aligning these capabilities and contributing competencies, a public sector entity can significantly bolster its chances of digital leadership as both a strategy and a transformation outcome. This expanded purview, embedded within the broader policy and societal context, warrants further research and a distinct understanding of digital leadership in the public sector.

For future studies on public sector digital leadership

Scoping reviews often serve as a springboard to suggest future research areas. For example, Eberl and Drews (2021) suggest future research areas for digital leadership, including understanding digital leadership compared to other leadership styles, developing a digital leadership measurement system, and assessing digital leadership's impact on output variables such as organizational agility and customer experience. In this article, we propose further exploration by suggesting six key areas using Jackson and Parry's (2018) leadership study framework. Existing research mostly focuses on digital leaders from an individual level, centering on personal attributes. However, addressing under-researched areas of digital leadership could yield intriguing insights.

Examining digital leadership from a personal standpoint

This aspect is intertwined with leadership through position, focused on identifying who truly spearheads the digital transformation in an organization. This is often seen

in situations where the designated manager bears the responsibility and accountability for the digital transformation, rather than the secondary levels of leadership (Jackson & Parry, 2018). Leadership through a person also factors in the leader's attributes, which can be examined through theories such as transformational, transactional, visionary, ethical, or charismatic leadership. Exploring the followership of digital leaders presents an equally fascinating area of research. Given that any individual in the organization can be a digital leader, it would be intriguing to explore the level of followership digital leaders command based on their organizational position and the challenges they encounter. Some promising questions to investigate could include the leadership theories digital leaders fit into, the personal attributes of digital leaders, their competencies, their followers, and the role these followers play in contributing to digital leadership success.

Investigating digital leadership as a strategic position

The question of who holds the formal power to create leadership is central here. This strategic aspect concerns those who have been granted the authority to spearhead the digital and/or business transformation (Jackson & Parry, 2018). While the head of the IT unit usually takes on this role in traditional IT leadership, this isn't necessarily the case with the broader role of digital leadership. Digital leadership might involve people at all organizational levels, from the board of directors to middle and lower management. This could spark research questions about whether traditional IT leadership is adequate or if a broader, more inclusive role of digital leadership is needed for large-scale and fast-paced transformation (Westerman et al., 2012).

Exploring digital leadership as a process

For organizations eager to foster digital leaders, understanding 'how' digital leadership is developed becomes crucial. Looking at digital leadership as a process shifts the focus from mere responsibilities to what transpires between those engaged in leadership practice. Research questions worth investigating might include how to understand the digital leadership process in an organization, how digital leaders effectively communicate their roles, and how digital leaders create collective, shared, and inclusive leadership.

Studying digital leadership through performance

Digital leadership can be viewed as a strategic outcome with a focus on organizational performance. Research questions worth investigating could include how digital leaders contribute to organizational objectives, the importance of digital leadership for an organization, and the key performance indicators of digital leaders.

Assessing digital leadership through context

Digital leaders might be influenced by their operational context, place of origin, or sector differences. The leadership context might shape leaders' decision-making, their objectives, and their perspective on leadership practice. Contextual factors such as social justice, climate change, public values and economic inequality might also become part

of the outcomes or drivers of new key performance indicators that digital leaders may contribute toward (Jackson & Parry, 2018). Understanding the role of place and context in digital leadership is hugely important.

Evaluating digital leadership through purpose

The need for digital leadership is an interesting research area. This addresses the question ‘why are leaders created?’ and provides an answer that becomes essential as organizations seek to evaluate digital leadership performance. Some research questions worth investigating include how digital leaders become ethical leaders, how they create authentic and spiritual leadership, and what the outcome of digital leadership is.

In this article, our leadership discourse primarily revolves around the provision of Digital Government (DGov) strategies or digital transformation initiatives by central or national governments and the mechanisms within these strategies that facilitate alignment with the various aspects of government agencies. These aspects encompass their business plans, statements of intent, leader accountabilities, and the overarching goals and outcomes of the Digital Government strategy. It is essential to underline that the alignment of the Digital Government strategy with the various agency business plans and statements of intent forms an integral mechanism for achieving a holistic governmental outcome when understanding digital leadership. Such an alignment ensures the interoperability of the plans of the different agencies while harmonizing them with the primary goals of the Digital Government strategy, possibly facilitated by digital leaders or digital leadership. Consequently, it catalyses a uniform approach toward realizing the objectives of the Digital Government strategy, thereby promoting efficient governance.

Further, the role of government agency leaders, such as the Chief Executives and the C-suite, in driving this alignment cannot be understated. Their job role accountabilities must resonate with the aspirations of the Digital Government strategy. This synchrony guarantees that the leaders’ decisions and initiatives are in line with the Digital Government strategy, bolstering the chances of achieving a comprehensive governmental outcome in areas that offer the most measurable value. Moreover, the Digital Government strategies by central governments are often required to identify several key elements for implementation success and targeted support. These include the level of digital maturity within individual agencies, the strategy’s alignment with core capabilities, the configuration of information and technology architecture within and across agencies, as well as the identification of competencies and skills clusters across the sector.

Regarding digital maturity, the strategies must assess the readiness of individual government agencies to implement digital government initiatives. They should, therefore, determine the extent to which these agencies can utilize digital resources and processes in their operations. Moreover, the strategies should identify the match between their core capabilities and the information and technology architecture of the agencies. Such identification can help focus investment, improve governance, and foster effective collaboration among agencies.

In relation to competencies and skills clusters, the debate on what constitutes a digital leader’s necessary competencies and skills is ongoing among researchers. Drawing from E. L. Valentine’s (2016) assertion that skills are the building blocks of competencies, the literature largely clusters competencies and associated skill sets into four categories:

leadership skills, digital skills, business skills, and general social/soft skills. To be effective, a digital leader should exhibit a balance of these skills, thus necessitating a targeted approach to identifying developmental needs in senior leaders across agencies.

Concluding thoughts on digital leadership in the public sector

In a time marked by rapid technological advancement, the urgency for organizations, especially those governing the public sector, to deliver effective digital transformation programs cannot be overstated. Yet, the leadership and management of these initiatives can be intricate due to the myriad of often conflicting and competing demands. Consequently, an in-depth understanding of digital leadership becomes indispensable for both professionals and scholars. In this article, we've undertaken a review of recent research on digital leadership. Our thematic analysis has presented findings into concise domains, such as the meaning of digital leadership, its theoretical foundations, the inherent competencies, the crucial success factors, and the function of digital leadership within public sector organizations.

Understanding digital leadership equates to navigating an intricate maze, weaving together critical areas such as the procedures of digital leadership, the outcomes of this leadership style, and the distinct capabilities needed to lead in a digital environment. The foundational theories that inform digital leadership typically rely on established leadership models such as transformational, transactional, visionary, and charismatic leadership, yet these do not completely encapsulate digital leadership.

Our literature review has uncovered the key competencies and skills clusters of digital leaders, organized into leadership capabilities, digital skills, understanding of business, and 'soft' skills. Importantly, the performance of digital leaders generally depends on their capacity to drive business and organizational transformation, even when the initial goals might seem entirely digital only. This suggests that digital leaders must excel in value creation and realize business results that are beneficial for clients and stakeholders. These characteristics are common to both public and private sector organizations. Where one IT and things digital were the prevue of the IT department, it appears that building capability across all roles and all levels of the organization from the board to the front line, is an emerging emphasis.

There are distinctive implications for the public sector. In contrast to their private sector equivalents, public sector organizations are subject to an array of regulatory, legal, and public accountability constraints that significantly influence the strategies and competencies of their digital leaders. These leaders need the capability to handle political pressures, policy constraints, and public examination while also transforming their organizations to deliver outstanding digital services in secure and compliant ways. Their leadership competencies frequently include policy savvy, stakeholder management skills, and a commitment to public service ethos (Feeney & Rainey, 2009).

Given these findings, it is evident that digital leadership in the public sector demands a unique combination of competencies, skills, knowledge and experience, and public-service-focused strategies (Adie et al., 2022). As we suggest research agendas for digital leadership based on the conceptual model we have devised, we advocate for public sector organizations to place a high priority on developing these vital skills and capabilities in their leaders (Feeney & Rainey, 2009). We further call

on future research to probe deeper into how these competencies are defined, clarified and nurtured and their influence on the success of digital transformation in diverse public sector contexts.

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