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The Characteristics of Digital Transformation Leadership: Theorizing the Practitioner Voice

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The characteristics of digital transformation leadership: Theorizing the practitioner voice

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Abstract Digital Transformation (DT) is more than simply integrating a new digital technology into the organization. Despite a growing volume of research, however, there is little coverage of the characteristics of DT leadership. Using a grounded approach, where 16 practitioner voices are central to the theorizing output, we present 10 DT leadership characteristics. Each characteristic links what action a DT leader needs to take and how a DT leader enables that action. We also asked 30 DT leaders to evaluate the importance of each of the 10 DT leadership characteristics. Our approach strengthens the relevance for practitioners striving for the best possible DT initiative outcome. For example, prefacing each DT leadership characteristic with "Are we…?" Encourages DT leaders to guide conversations with organizational stakeholders by reflecting on the realities of their DT initiative and highlighting potential gaps in their organizational thinking.

1. Digital transformation leadership

Emerging scholarly attention positions *Digital Transformation* (DT) as a "leading technology-related phenomenon" (Wessel et al., 2021, p. 102). Despite the growing interest in DT, scholars and practitioners still "struggle to grasp what [DT]

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really is" (Wessel et al., 2021, p. 102), and several gaps still exist in our understanding of this complex and multidimensional process (see Carroll, 2020; Porfírio et al., 2021; Tabrizi et al., 2019; Vial, 2019). Tabrizi et al. (2019) found that "70% of all DT initiatives do not reach their goals" and of the $1.3 trillion spent on DT in 2018, estimates suggest that "$900 billion went to waste." Therefore, leading a successful DT initiative is a real modern concern for both business and IT practitioners alike. However—irrespective of who leads a DT initiative, as regards their role or title—it is more important to appreciate the DT leadership characteristics that are required to drive DT in organizations. McCarthy et al. (2021) suggest that, currently, there are minimal empirical research outputs focusing on DT leadership, based on their analysis of 87 empirical studies (from 93 top-ranked information management journals and eight major AIS conferences).

There is a broad consensus on the importance and influence of leadership in DT. Porfírio et al. (2021, p. 610) referred to the "crucial role of leadership," while Benwell (2020) contended that "leadership is the element without which the rest of your transformation efforts will be rendered meaningless." However, the role of the DT leader has "evolved a lot in recent years" (Georgiou, 2022), and expectations of what the DT leader needs to deliver have also changed radically (Shein, 2021). While changes need to happen across multiple organizational levels to obtain a successful DT outcome, one such change is adjusting leadership (Nadkarni & Prügl, 2021, p. 236).

In addition, DT is "fundamentally about relationships" and effective DT "requires strong leadership" (Shein, 2021), in which "a qualified and effective [leader] can fast-track business success" (Georgiou, 2022). Achieving DT success is linked to having certain digital-savvy leaders in place, and the emergence of the CDO represents the overarching need to appoint a specialist to head the digital transformation of the business (Haffke et al., 2016; Singh & Hess, 2017). However, it is still hard to find comprehensive coverage of the characteristics of DT leadership—even in the trade press—that are linked to what action a DT leader needs to take and how a DT leader enables that action. In recent times, there has been a growing volume of trade press articles that list digital leadership characteristics/traits (see Benwell, 2020; Benwell, 2020; Chhabra, 2022; Georgiou, 2022; Guggenberger & Simon, 2020; Shein, 2021; Ton, 2021). While these lists are strong signals of the present-day struggles of information systems (IS) practitioners in the DT trenches, further theorizing can help unpack the complexity of DT leadership.

Considering the current situation, the objective of this research is to explore the characteristics of DT leadership that impact the outcome of DT initiatives within a predigital organization. To fulfill this research objective, we follow a theory-building research strategy to develop an understanding of DT leadership characteristics from practitioners currently in the DT trenches (i.e., a data-to-theory approach). To do this, we embrace an approach aligned with *concept development* as opposed to *construct elaboration*, in which a concept captures "qualities that describe or explain a phenomenon of theoretical interest" (Gioia et al., 2012, p. 16). This approach allows us to capture the meaning from those practitioners living the experience (i.e., leading a DT initiative) and "theorize about that experience" (Gioia et al., 2012, p. 26). In Section 2, we present a detailed description of our research approach to building theory.

2. Unpacking the DT leaders' stories

It is reported that importance is the most critical dimension of relevance for IS practitioners. Similar to Rosemann and Vessey (2008, p. 3), we view *importance* as research that "meets the needs of practice by addressing a real-world problem in a timely manner, and in such a way that it can act as the starting point for providing an eventual solution." In this article, to balance rigor and relevance, we designed a two-stage research study. In Stage One, we generated 10 DT leadership characteristics through coding interviews that captured the unique DT leadership experiences of 16 DT leaders. In Stage Two, to further elevate the relevance of our work, we surveyed another 30 DT leaders to evaluate the importance of each of the 10 DT leadership characteristics using a high, medium, and low rating scale. Throughout our inductive approach, we maintained an analytical discipline to produce "credible interpretations of data" and conclusions that are both "plausible and defensible" (Gioia et al., 2012, p. 15). Our conceptual development and ability to make sense of the organizational world that practitioners live in helped us produce 10 DT leadership characteristics. It is also worth mentioning that the 46 DT leaders are/have been affiliated with organizations "born in the predigital age," and they are consciously balancing "tensions between the 'old' and the 'new'" when transforming (Oberländer et al., 2021, p. 1).

Therefore, being inspired by features of the Gioia Methodology, which is positioned as a "systematic inductive approach to concept development" and assumes that "the organizational world is socially constructed" (Gioia et al., 2012, p. 17),

we aim to conceptualize the practitioners' voice and not "substitute practitioners' understandings for theory" (Markus & Rowe, 2021, p. 273). As a result, in data collection, there is a need to "give extraordinary voice to informants, who are treated as knowledgeable agents," while in data analysis, there is a need to maintain "the integrity of 1st order (informant-centric) terms" during initial data coding, and further "organize 1st-order codes into 2nd-order (theory-centric) themes" (Gioia et al., 2012, p. 26).

In Stage One, we selected 16 key informants for interview based on their organizational perspective (e.g., business or IT) and role (e.g., strategic or operational). Interviews took place over 16 months (November 2018—February 2020) and ranged in duration from 35—75 minutes with an average interview duration of 60 minutes. These key informants are considered DT leaders within their respective organizations (e.g., CEO/CIO/CTO, business transformation director/manager, lead digital business analyst), and their voices reflect those of their industry peers. On average, these key informants have 15+ years of industry experience in the area of business/IT transformation within single and multiple DT initiatives in MNC/SME environments across a variety of sectors (e.g., technology [6], higher education [4], energy [2], agriculture [2], and healthcare [1]). This stratified selection of key informants allows us to "capture the consonance (or dissonance) between plans [strategic] and their implementation [operational]" (Day et al., 2009, p. 641) and appreciate the alignment between IT and business perspectives (see Bendig et al., 2022; Yeow et al., 2018) because the impact of DT on the business is technology-enabled (Porfírio et al., 2021). In using the metaphor of a tapestry and its weavers of the threads, Smith and Watson (2019, p. 98) explicitly referred to the *business thread* and the *IT thread* of DT (i.e., the *digital tapestry*). The literature also reminds us of the importance of a well-functioning and collaborative strategic partnership between IT and business leadership to adapt to change throughout the DT process (see Bharadwaj et al., 2013; Hess et al., 2016; Matt et al., 2015; Singh & Hess, 2017). Therefore, our approach to key informant selection allows four types (quadrants) of practitioner voices to be heard: (1) business strategic, (2) business operational, (3) IT strategic, and (4) IT operational, as we analyze the characteristics of DT leadership (see McCarthy et al., 2022).

After preparing each of the 16 key informant interview transcripts from the 16-month data-gathering period, we read each transcript sentence-by-sentence and followed an inductive open coding approach. According to Corbin and Strauss (1990), *coding* represents the operations by which data are broken down, conceptualized, and put back together in new ways. During our inductive *open coding*, we were initially looking for two sides of a key informant's DT leadership experience (i.e., the what and the how). In other words, we wanted to determine what action to take and how it should be carried out in their role as a DT leader. These actions relate to the key informant striving for the best possible outcome in a DT initiative. The output from our inductive open coding produced 10 categories that emerged from 558 key informant excerpts coded against 165 concepts. Table 1 shows a list of DT leadership characteristics, and Figure 1 shows a sample of our open coding.

In Stage Two, we evaluated each of the 10 DT leadership characteristics by engaging with 30 DT leaders across 10 different organizations using a short online survey. Online surveys are an effective way "to elicit feedback from a wide range of participants in a scalable way." However, it is important to ensure these surveys require "as little effort as possible to complete" (Lo et al., 2015, p. 416). To achieve this, we designed a short 10-question survey (one question per characteristic using an ordinal scale of high/medium/low) to gather practitioner perspectives on the ranked importance of each of the DT leadership characteristics. We viewed the short survey as a data-gathering instrument that would provide numerical descriptions of the importance of each DT leadership characteristic (based on experiences to date). In our survey, a respondent was required to answer all 10 questions to submit a valid survey response. The survey responses were gathered over an 11-month period (June 2022—April 2023).

As with the 16 key informants, the 30 DT leaders represent the four quadrants of practitioner voices: business strategic [10], business operational [8], IT strategic [9], and IT operational [3]. Furthermore, their years of experience are evenly distributed across three ranges (<5 years [9], 5—10 years [10], and >10 years [11]) in business/IT transformation across a variety of sectors, including financial services [12], technology [11], higher education [5], aviation [1], and brewing [1]. By leveraging the insights from the 30 DT leaders' responses, we established the mean score for each DT leadership characteristic and produced a ranked list of characteristics based on perceived importance (see Table 2). When we compared this ranked list of the 10 DT leadership characteristics (based on the evaluation of the 30 DT leaders) to the initial

Table 1. DT leadership characteristics by practitioner voice quadrant frequency

Number	Category		Excerpt	Concept		Practitioner voice quadrant			
	What	How				IT Strategic	IT Operational	Business Strategic	Business Operational
C1	Communicating and executing a digital strategy and vision	Leveraging executive management support	101	20		26	24	28	23
C2	Prioritizing the customer value proposition	Implementing an integrated digital platform	76	16		21	20	18	17
C3	Understanding the journey of organizational change	Embracing digital disruption	62	26		16	14	17	15
C4	Inspiring the organization to change	Adopting an open culture and digital mindset	60	18		16	10	18	16
C5	Underpinning the organizational change	Using appropriate digital capabilities	58	15		22	18	10	8
C6	Collaborating cross functionally	Adopting a disruptive approach to innovation	55	16		12	16	15	12
C7	Redefining the business model	Optimizing functionally aligned processes	48	17		14	12	12	10
C8	Unlocking the value of data-driven decisions	Capturing and analyzing high quality data	44	15		15	8	14	7
C9	Realizing value creation	Balancing cost reduction and revenue generation	29	10		13	8	5	3
C10	Empowering employee experience	Creating a dynamic digital workplace	25	12		5	3	6	11
		Total	558	165		160	133	143	122

Note: RAG color represents highest to lowest code frequency

prioritized list (based on our coding of the 16 key informants), we found several interesting observations that further advance the relevance of our work to practice. These observations are presented in Section 3 (see also Table 3).

3. 10 digital transformation (DT) leadership characteristics

In this section, we will present our findings. We start by presenting each of our 10 DT leadership characteristics (based on our Stage One theorizing). Naming the DT leadership characteristics is based on the lexicon of the 16 key informants involved in Stage One of this study, notwithstanding the fact that there is an evolution in the description used as part of the data-to-theory process. Then, we present a high-level overview based on some key patterns that emerged from our analysis (comparing Stage One and Stage Two) and compare our understanding of these patterns against the current literature.

3.1. DT leadership characteristics: The what and the how

In Section 3.1., we present the DT leadership characteristics in descending order based on total coded excerpts per category (see Table 1). The distribution of excerpts across the four practitioner voice quadrants is also highlighted. For example, the IT strategic practitioner voices are

dominant in shaping C9, the business operational practitioner voices are dominant in shaping C10, the IT strategic and operational practitioner voices are dominant in shaping C5, the IT and business strategic practitioner voices are dominant in shaping C8, and C1—C4 & C6—C7 are shaped by a balanced contribution across the four practitioner voices. Throughout Section 3.1.1., we present a brief digest of each of the DT leadership characteristics.

3.1.1. C1: Communicating and executing a digital strategy and vision by leveraging executive management support

Based on our analysis, we determined the importance of creating a digital strategy and vision that is transparent to all and communicated from the strategic level to the operational level. For example, a business operational key informant suggests that "those at the operational level need to understand how the strategy and vision transfer down to them and what is expected of them." For the digital strategy and vision to be effective and accepted, they must be inspiring, motivating, and aligned with the organization's business strategy. These practitioner voices (DT leaders) suggest that for a DT initiative to be a success, the digital strategy and vision must also have the required level of support throughout the organization. Leadership must ensure that the digital strategy and vision will be communicated and executed, and have the necessary digital and human resources to deliver value for all organizational

Figure 1. Sample open coding for the DT leadership characteristics C2, C8, and C10*
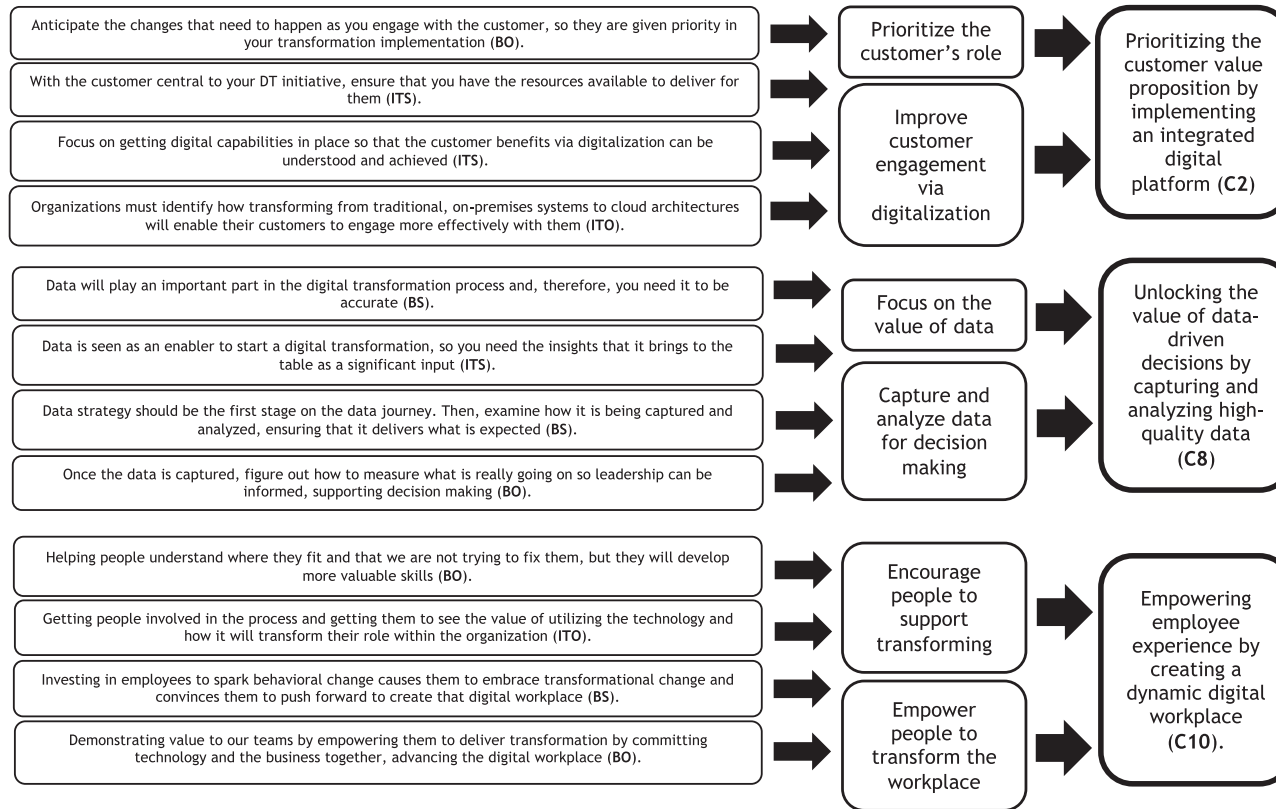***Across the four practitioner voice quadrants**

Table 2. Evaluation of DT leadership characteristics by 30 DT leaders

Number	Category		Rank	Overall mean score	Practitioner voice quadrant			
	What	How			IT Strategic	IT Operational	Business Strategic	Business Operational
C1	Communicating and executing a digital strategy and vision	Leveraging executive management support	1	2.93	3.00	3.00	2.90	2.88
C4	Inspiring the organization to change	Adopting an open culture and digital mindset	2	2.90	2.88	3.00	2.90	2.88
C2	Prioritizing the customer value proposition	Implementing an integrated digital platform	3	2.87	2.77	3.00	2.90	2.88
C8	Unlocking the value of data-driven decisions	Capturing and analyzing high quality data	4	2.83	2.77	3.00	2.90	2.75
C10	Empowering employee experience	Creating a dynamic digital workplace	5	2.67	2.66	3.00	2.40	2.88
C6	Collaborating cross functionally	Adopting a disruptive approach to innovation	6	2.57	2.77	2.33	2.60	2.38
C5	Underpinning the organizational change	Using appropriate digital capabilities	7	2.50	2.44	3.00	2.30	2.63
C3	Understanding the journey of organizational change	Embracing digital disruption	8	2.43	2.33	2.33	2.50	2.50
C7	Redefining the business model	Optimizing functionally aligned processes	9	2.37	2.22	2.33	2.70	2.13
C9	Realizing value creation	Balancing cost reduction and revenue generation	10	2.30	2.11	2.66	2.40	2.25

Note: RAG color represents highest to lowest mean score

stakeholders. This is captured by an IT strategic key informant, who advises being "transparent in how the strategy will be delivered by the underpinning of the digital capabilities available to the organization."

3.1.2. C2: Prioritizing the customer value proposition by implementing an integrated digital platform
In addition, leadership must make the customer value proposition a key objective of DT. In other words, leadership must prioritize putting the customer at the core of an organization's digital strategy to ensure greater value to the customer via the changes that are implemented. A business operational key informant suggests that DT leaders should "concentrate on finding customer data touchpoints in order to find out customer priorities, understanding and finding the best way to support them in achieving value is what the customer wants." They believe that leadership needs to focus on enhancing their customer segments using digitalization. These practitioner voices also emphasize that digital channels will improve customer engagement, thereby enhancing the customer experience.

Table 3. Comparing the importance of DT leadership characteristics across Stages 1 and 2

	DT leadership characteristic	Practitioner voice importance	
		Stage One: 16 DT leaders	Stage Two: 30 DT leaders
1	C1 (Communicating and executing a digital strategy and vision by leveraging executive management support)	HIGH ALL	HIGH ALL
	C2 (Prioritizing the customer value proposition by implementing an integrated digital platform)		
	C4 (Inspiring the organization to change by adopting an open culture and digital mindset)		
2	C3 (Understanding the journey of organizational change by embracing digital disruption)	HIGH ALL	LOW ALL
3	C5 (Underpinning the organizational change by using appropriate digital capabilities)	MEDIUM ITS/ITO	MEDIUM ITO
4	C6 (Collaborating cross functionally by adopting a disruptive approach to innovation)	MEDIUM BS/ITO	MEDIUM ITS
5	C7 (Redefining the business model by optimizing functionally aligned processes)	MEDIUM ITS	LOW BS
6	C8 (Unlocking the value of data-driven decisions by capturing and analyzing high-quality data)	LOW BO	HIGH BO
7	C9 (Realizing value creation by balancing cost reduction and revenue generation)	LOW ITS/ITO	LOW ITO
8	C10 (Empowering employee experience by creating a dynamic digital workplace)	LOW BO	MEDIUM BO/ITO

Note: RAG color represents high, medium, and low

3.1.3. C3: Understanding the journey of organizational change by embracing digital disruption

Based on our analysis, a broad consensus emerges that undergoing a digitally enabled organizational change involves having a clear understanding of the why, what, and how of DT. As highlighted by an IT strategic key informant, it is important to "identify what we are looking to achieve from transforming, how we go about that process and making those changes, and why it's important that we do so." Having a complete understanding of the reasons for DT, or the "why" of digitally transforming, is very important as it affords leadership the opportunity to assess the risks and rewards of such a disruptive paradigm shift. For those leading the organizational change, the what of DT is necessary, for example, having the emotional intelligence, sufficient appetite, and strategic partnerships; furthermore, focusing on building credibility by achieving short-term successes is also a key aspect of attaining a positive result from DT. Focusing on the how of DT means leadership having the competence and ability to assess risks and rewards from an external (industry-wide) as well as internal (organizational) perspective. It also requires leadership to evaluate digital technologies, investments, and innovations, and be focused on process improvement and change management. This is captured by one of the business operational key informants, who proposed "understanding that it's a transformational shift in technologies, supported by a workplace and workforce transformation, that brings about the organizational change."

3.1.4. C4: Inspiring the organization to change by adopting an open culture and digital mindset

Understanding the culture of an organization is crucial to a successful DT outcome. While embracing the cultural and behavioral changes that DT will bring, DT leaders highlight the need to promote the necessary cultural shift in the organization to make it culturally fit for DT. Therefore, culture and mindset are closely aligned to the digital strategy. As highlighted by a business strategic key informant: "If your culture is closed and your mindset follows, your digital transformation will not flourish, the key is to foster an openness in both." These practitioner voices see a digital mindset as embodying empathy, positivity, and inclusivity—which leadership needs to transfer from the strategic to the operational level. Another business strategic key informant recommends that "people must fit the culture of your organization and must be entertained and excited

by the change." For these key informants, getting buy-in from the organization requires leadership that brings something different (i.e., freshness, new ideas) and invigorates the entire organization.

3.1.5. C5: Underpinning the organizational change by using appropriate digital capabilities

Based on our analysis, it emerges that identifying and incorporating *appropriate digital capabilities* is viewed as a critical enabler of an organization's DT initiative. According to a business strategic key informant: "We are diverting our resource base much more into technology and automation, the idea of reaping what you sow." For these practitioner voices (DT leaders), leadership must acknowledge that creating a well-crafted digital platform will provide the foundation to deploy digital services across the organization. Such a digital platform will involve building a robust and resilient end-to-end digital backbone, which will support a well-designed and scalable digital architecture comprised of web-based applications and infrastructure-based services supported by emergent and emerging technologies. For example, as an IT strategic key information said: "We're building huge capability where we're transforming our operational backbone to make ourselves 'fit-for-purpose' in a digital sense." These practitioner voices believe that leadership must focus on aligning digital capabilities to the strategic business objectives (captured in the digital strategy).

3.1.6. C6: Collaborating cross-functionally by adopting a disruptive approach to innovation

Based on our analysis, it emerges that getting organizations to collaborate, both functionally and cross-functionally, will enable a more successful DT initiative. The key informants see that collaboration involves using collaborative technologies, human resources, and innovative methods in their approach to DT. As highlighted by a business strategic key informant: "Incorporating the right methodology, to find the best technology and applications required to bind those involved in transforming, to produce the desired outcome." Furthermore, they believe that an agile methodology should be fostered with regard to the program management structure used, which is inclusive, self-determining, and empowering for all participants in the DT initiative. These practitioners believe that leadership must foster collaboration and empowerment to get support and participation from those at all levels of the organization. As highlighted by an IT strategic key informant: "Having that openness and honesty and

making sure everyone has their say, being collaborative with those around you, to foster inclusivity and extract those good ideas from people that can be brought to the table." Finally, they see the importance of creating a DT roadmap so all involved can see the milestones that need to be achieved as part of the DT journey.

3.1.7. C7: Redefining the business model by optimizing functionally aligned processes

Based on our analysis, the enhancement and optimization of business processes are essential in redesigning an organization's business model. For example, a business operational key informant suggested that "understanding the process transformation is important and needs someone to lead this transformation, someone who is people-oriented, can put themselves in the shoes of everyone in the organization to convey the message to them." The practitioners view the changing operational model of the organization as a product of leadership advocating for the creation of an integrated digital platform that meets the needs of customers and employees. To deliver such change requires the appropriate expertise—internally and externally—to reconfigure how the digital business operates at all levels. An IT operational key informant further illustrated this, emphasizing the importance of "[convincing] people that it's ok to use automation and other tools to transform the business and that transformation of processes will not lead to employees losing their jobs."

3.1.8. C8: Unlocking the value of data-driven decisions by capturing and analyzing high-quality data

Our research found that a clear understanding of the importance of data, why it is an enabler of organizational change, and why it is critical for DT decision-making must exist. As highlighted by a business strategic key informant, "Data is going to play an important part in the digital transformation process and, therefore, you need it to be accurate because data is going to help drive your transformation." The key informants believe that leadership must be data-driven and have a data strategy in place (initially) before deciding on capturing and analyzing any data. Furthermore, the practitioners present the importance of data and its use as a pointer or compass, providing an indication of how the organization's DT initiative is performing (i.e., its direction). Another business strategic key informant revealed: "We need to start with the data strategy as the first stage on the data journey and then examine how it's being captured and analyzed, ensuring that it delivers what is expected from it."

3.1.9. C9: Realizing value creation by balancing cost reduction and revenue generation

Based on our analysis, creating value by balancing cost reduction and revenue generation is a priority for leadership. The key informants suggest that it is important for leadership to make the right investments in digital (technologies and resources), as it will enable value creation and provide a meaningful return on investment (ROI). This is highlighted by an IT operational key informant, stating that "seeing how to leverage technology to support value creation, whereby there will be a meaningful ROI that will come from using the technology." In fact, these practitioners believe that ascertaining where the cost reductions can be achieved—to offer a value proposition to all stakeholders, internal and external—is critical in gaining acceptance of the DT initiative. As an example, leadership might look to pinpoint where the value is via technology-enabled organizational change (e.g., migration of applications and services on-premise to the cloud). This reduces capital expenditure on technologies and infrastructure and increases customer and employee engagement. According to an IT strategic key informant, it is important that practitioners are "demonstrating what the result of transforming will mean to everyone and building the value of it through quick wins, while also showing them what other companies are doing."

3.1.10. C10: Empowering employee experience by creating a dynamic digital workplace

Finally, encouraging a value proposition for employees must be outlined as part of a DT initiative, which can come in various forms (e.g., monetary, improved working environment, or a greater say in how the organization operates). Creating that value proposition can be achieved via digitalization by introducing new technologies and tools that can assist employees in their everyday work tasks and allow them to upskill and develop new competencies. For example, a business operational key informant maintained the importance of "demonstrating the value to our teams by empowering them to deliver on the vision of transforming, by committing technology and the business together, bringing the digital workplace forward." These practitioner voices see positivity in empowering employees, giving them input into making the changes, and ensuring that they

understand why the organization is transforming and why they should support it. For these IS practitioners, getting buy-in from the organization requires that leadership bring something different that invigorates the entire organization.

3.2. DT leadership characteristics: Comparative patterns of interest

Via Table 3, we identify several patterns of interest that emerged from a comparison of Stage One (16 DT leaders) and Stage Two (30 DT leaders). Overall, the prioritized/ranked order of the DT leadership characteristics (across Stage One and Stage Two) is as follows: C1 and C6 are in the same position; C2 and C9 have a minor difference (somewhat less important in Stage Two); C4 has a difference (more important in Stage Two); C5 and C7 have a difference (less important in Stage Two); C3 has a major difference (significantly less important in Stage Two); and C8 and C10 have a major difference (significantly more important in Stage Two). Furthermore, looking more granularly at the comparative patterns between Stage One and Stage Two (as presented in Table 3), it emerges that:

- C1, C2, and C4 are the most important DT leadership characteristics across all four practitioner voice quadrants (in both Stage One and Stage Two).

- C3 is less important to the 30 DT leaders (Stage Two). C3 is also consistently viewed across all four practitioner voice quadrants. However, C3 is also of somewhat greater importance to business (strategic and operational) DT leaders (in both Stage One and Stage Two).

- C5 is consistently viewed across all four practitioner voice quadrants but is of greater importance to IT operational DT leaders (in both Stage One and Stage Two).

- C6 is consistently viewed across all four practitioner voice quadrants but is of greater importance to Strategic (business and IT) DT leaders (in both Stage One and Stage Two).

- C7 is consistently viewed across all four practitioner voice quadrants but is of greater importance to Strategic (Business and IT) DT leaders (in both Stage One and Stage Two).

- C8 has a greater importance to the 30 DT leaders (Stage Two). C8 is also of lesser importance to business operational DT leaders (in both Stage One and Stage Two).

- C9 is consistently viewed across all four practitioner voice quadrants but is of greater importance to IT (and particularly IT operational) DT leaders (in both Stage One and Stage Two).

- C10 has a greater importance to the 30 DT leaders (Stage Two). C10 is also consistently viewed across all four practitioner voice quadrants but is of greater importance to Operational (and particularly business operational) DT leaders (in both Stage One and Stage Two).

There is strong and balanced coverage across all practitioner voices for DT leadership characteristics C1, C2, and C4. This pattern would perhaps confirm researcher and practitioner expectations as to where a DT leader needs to focus attention (e.g., on digital strategy and vision, customer value propositions, and organizational change). In addition, there is strong and balanced coverage across all practitioner voices for DT leadership characteristics C5, C6, C7, and C9. However, while the DT leadership characteristic C3 (i.e., understanding the journey of organizational change by embracing digital disruption) is also consistently viewed across all four practitioner voice quadrants, it is less important to the 30 DT leaders (Stage Two) despite being the third most frequently coded characteristic in Stage One.

Furthermore, of particular interest in C7 (i.e., redefining the business model by optimizing functionally aligned processes), the volume of coded excerpts relative to those for C1 (i.e., communicating and executing a digital strategy and vision by leveraging executive management support) is <50% across the four practitioner voice quadrants (in Stage One). This pattern may not align with researcher and practitioner expectations as to where a strategic (business and IT) DT leader should focus attention, given the prominent coverage of business model redesign in the DT literature. For example, like all types of change programs, DT can be understood as altering the people, process, technology, and data components of an organization (Matt et al., 2015; Saarikko et al., 2020). The motivation for introducing a DT program can be multifaceted, but many DT programs are centered around changing the organization's structure and business model to serve existing customers more

efficiently and reach new customers more effectively (El Sawy et al., 2016; Haffke et al., 2017). Porfírio et al. (2021, p. 611) refer to DT as a disruptive movement "usually resulting in a transformation of the firm's business model."

A similar expected observation can be made in DT leadership characteristic C8 (i.e., unlocking the value of data-driven decisions by capturing and analyzing high-quality data), in which there is a strong focus within both the business and IT strategic practitioner voices (in both Stage One and Stage Two). However, it is worth noting that C8 has a greater importance to the 30 DT leaders (in Stage Two). Notwithstanding this strong strategic focus around C8, the business operational practitioner voices are less prominent (in both Stage One and Stage Two), which could present a challenge for DT leaders regarding how well strategic priorities (e.g., being more data-informed) will be operationalized in practice (Saarikko et al., 2020). This highlights the potential dissonance between the plans and their implementation (see Day et al., 2009). Shein (2021) reminds us that an effective DT leader "will motivate their executive team and their reports to really transform. They really need to have this motivation; this ability to translate vision into action."

DT leadership characteristics C9 and C10 represent the least frequently coded excerpts across the four practitioner voices (in Stage One). This focuses attention on two areas that potentially receive lesser focus from DT leaders than might be expected, and this pattern can present challenges to the outcome of a DT initiative. For example, C9 (i.e., realizing value creation by balancing cost reduction and revenue generation) shows a strong focus within both the IT strategic and operational practitioner voices, relative to the focus of both the business strategic and operational practitioner voices (in Stage One and Stage Two). This could present a challenge for a DT leader if the business narrative is not focusing enough on value (cost reduction and revenue generation) relative to the IT narrative. In addition, this imbalanced focus between the IT and business narrative also emerges as a pattern within C5 (i.e., underpinning the organizational change by using appropriate digital capabilities), in that it seems like the use of digital capabilities to underpin organizational change is not as frequent a focus for the business practitioner voices as it is for the IT practitioner voices ($<$50%). This has the potential to present a significant challenge to a DT leader regarding the outcome of a DT initiative. Shein (2021) found that effective DT leaders "know they can only gain board influence if they

can talk the language of the board." Therefore, IT leaders need to build more contextual awareness by "learning to meet business colleagues where they are and speak their language." Shein (2021) continues that "the quickest way to get the business to disconnect is to bring them to the table, and then you lose them if you're trying to get them to speak the language of IT." According to Overby (2021), the best DT leaders "avoid speaking in acronyms and never try to flout their tech lexicon." Instead, they "democratize tech understanding" and "keep it as simple as possible."

An interesting observation reveals itself when comparing the focus of practitioner voices between customer engagement and employee engagement. There is a very strong and balanced coverage across all practitioner voices (in Stage One and Stage Two) for C2 (i.e., prioritizing the customer value proposition by implementing an integrated digital platform). This pattern would perhaps align with researcher and practitioner expectations as to where a DT leader should focus attention (e.g., on the needs of the customer). However, there is very little support (in Stage One) across the practitioner voices for C10 (i.e., empowering employee experience by creating a dynamic digital workplace). However, it is worth noting that C10 has a greater importance to the 30 DT Leaders (in Stage Two). C10 is also of greater importance to business operational DT leaders—specifically in both Stage One and Stage Two—which is to be expected and aligns with researcher and practitioner expectations. However, where C10 receives so little focus from DT leaders (compared to expectations), this presents a significant challenge to the outcome of a DT initiative. For example, the current changes in the world of work (accelerated by the COVID-19 global pandemic) present the need for new ways of thinking and doing—especially against the backdrop of The Great Resignation. According to Huffington and Bates (2022): "Employees and customers alike are unplugging from companies who refuse to care about them." Therefore, it is important to foster the idea of employees working together, collaborating effectively, and using a cross-dimensional approach to DT (Holmström, 2022). It seems appropriate to conclude this section with a quote from one of the key informants in this study: "If the people aren't on board, it's not going to happen!"

4. Conclusions and implications

Like the work of Tekic and Koroteev (2019), we aim to close the gap—given the diversity of topics covered in DT literature—by providing this

comprehensive list of 10 DT leadership characteristics (that pattern the what and the how for a DT leader). We expect that these DT leadership characteristics will be of significant value to both academic and practice-based discourse, seeing that DT is "an issue that every company must deal with (or die!)" (Kaplan & Haenlein, 2019, p. 680). To the best of our knowledge, this list is the first of its kind that provides insights across four practitioner voice quadrants and "represents our effort to systematize and bring meaning into the booming field of digital transformation research and practice" (Tekic & Koroteev, 2019, p. 692). Our characteristics also broaden the definition of DT: the strategic enhancement of an organization to be customer-centric, culturally aware, and innovative by leveraging emergent and emerging technologies to improve processes, data, and people to disrupt business and operational models and deliver value propositions to all organizational stakeholders.

Reflecting on the role of our four practitioner voice quadrants, the business strategic DT leaders find it critical to inspire the organization by way of a top-down digital strategy and vision that is embraced by all the organization's employees. The business operational DT leaders see the importance of understanding the digital strategy and vision so that a value proposition is transparent for all stakeholders (including customers). Furthermore, the IT strategic DT leaders see bridging the communication gap between business and IT as vitally important in delivering the appropriate digital strategy and vision. Although the IT operational DT leaders see the importance of supporting the digital strategy and vision via a customer-experience-enhancing digital platform, future research can further evaluate this list of DT leadership characteristics (by practitioner voice quadrant) and examine the relationships between these characteristics, thereby advancing our understanding of DT and DT leadership.

To conclude, "without research outcomes relevant to practice, the very existence of a research discipline could be questioned because the discipline could well lack impact beyond its own (academic) community" (Rosemann & Vessey, 2008, p. 3). Per Rosemann and Vessey (2008, p. 3), *accessibility* is understood as "the research is understandable, readable, and focuses on results" and *applicability* is understood to be "whether it provides guidance and/or direction, and whether it provides concrete recommendations" that are easy to apply in practice. In addition, as argued by Holmström (2022, p. 335): "Organizations need

tools and frameworks to enable them to avoid reinventing the wheel and to steer digital transformation efforts in an appropriate direction." Therefore, to further increase the relevance of this work (around accessibility and applicability), we recommend prefacing each DT leadership characteristic with "Are we…?" to encourage DT leaders to guide conversations with organizational stakeholders by reflecting on the realities of their DT initiative(s). For example, posing the question "Are we empowering employee experience by creating a dynamic digital workplace?" will allow DT leaders to build a shared understanding amongst key organizational stakeholders around their DT initiative(s) by way of DT leadership characteristic(s) (e.g., C10).

Via engagement, conversations can, in a small way, build a greater awareness between organizational employees of the what and the how of DT leadership. Therefore, these conversations can also help address the DT leadership succession planning challenge (see Jackson & Dunn-Jensen, 2021). In effect, organizational employees will have a greater appreciation of each other's competencies and perspectives, as well as what it takes to lead a DT initiative). As suggested by Jackson and Dunn-Jensen (2021, p. 282): "It is also vital to consider where the capacity and potential of the employee are when developing leadership succession plans." In other words, "organizational members need to learn from one another" (Holmström, 2022, p. 335).

As a final takeaway, our work (across Stage One and Stage Two) suggests that unless you are listening to the business operational DT leader voices, you may not be in a good position to empower employees to create a dynamic digital workplace. Furthermore, IT operational DT leaders need to appreciate the importance of the dynamic digital workplace—especially from the business perspective. Finally, IT strategic DT leaders are key to value creation and need to engage with business operational DT leaders to ensure that there is a shared understanding and alignment between the plans and actions of business and IT. However, while technology-enabled change (central to DT) is the remit of IT strategic and operational DT leaders, for a successful DT outcome, business operational DT leaders need to be more proactively engaged in the ongoing DT conversation. Therefore, "to handle digital transformation effectively, employees must work together in a new way, breaking down silos and collaboratively addressing cross-dimensional issues" (Holmström, 2022, p. 335).

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