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Organizational design for digital transformation: A systematic literature review

Tristan Thome [a], Marvin Hanisch [b,a,*], Jana Oehmichen [c], Pedro de Faria [a]

[a] University of Groningen, Nettelbosje 2, 9747 AE Groningen, the Netherlands
[b] University of St.Gallen, Dufourstrasse 50, 9000 St. Gallen, Switzerland
[c] University of Mainz, Jakob-Welder-Weg 9, 55128 Mainz, Germany

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ABSTRACT

Digital transformation has become a central topic in management research over the past decades. This systematic review of 109 studies from 2000 to 2025 clarifies the role of organizational design in digital transformation. Synthesizing insights from the literature, we identify eight organizational design dimensions and integrate them into a framework of three interdependent stages of digital transformation. The *Align* stage connects digital leadership, digital governance, and digital culture; the *Execute* stage mobilizes digital strategy, digital organization, as well as digital resources and capabilities; and the *Transform* stage establishes digital operating and business models. Our analysis further reveals a distinct tradeoff at each stage: balancing control and autonomy during alignment, stability and adaptability during execution, and optimization and reconfiguration during transformation. We build on these insights to develop a research agenda and derive implications for managerial practice.

1. Introduction

Digital transformation has become a defining organizational challenge because it alters how incumbent firms compete through digital technologies, new business models, and evolving ecosystems (Adner et al., 2019; Lin, 2025; Tan et al., 2020). Unlike digitalization, which improves existing processes through technologies such as algorithmic workflows or robotic process automation, digital transformation compels firms to reassess how they operate, organize, and compete (Cui et al., 2026; Hanelt et al., 2021; Vial, 2019). Accordingly, it entails "a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm" (Verhoef et al., 2021, p. 889). Such transformation requires corresponding changes in organizational design, defined as "the configuration of the formal organizational agreements, including the formal structures, processes, and systems that make up an organization" (Nadler & Tushman, 1997, p. 48). These design choices become vital because they enable firms to reorganize around digital value logics and establish the preconditions for digital transformation (Kindermann et al., 2021; Kretschmer & Khashabi, 2020; Lanzolla et al., 2020).

Despite the growing recognition that organizational design is central to digital transformation, existing research remains fragmented and often contradictory. The literature features a proliferation of descriptive studies but little integration regarding which design dimensions matter, how they interact, and under what conditions they succeed (Hanelt et al., 2021; Oberländer et al., 2021; Vial, 2019). In addition, empirical findings frequently diverge. For example, some scholars argue that centralized coordination and strong governance enhance alignment and resource prioritization necessary for digital transformation (Chanias et al., 2019; Westerman et al., 2019), while others find that decentralization and distributed autonomy foster agility and learning in dynamic environments (Furr & Shipilov, 2019; Meng et al., 2022). Likewise, some studies emphasize the importance of executive-led digital vision and strategic direction (Fitzgerald et al., 2013; Gilbert et al., 2012), whereas others stress entrepreneurial leadership, experimentation, and employee-driven adaptation (Frankenberger et al., 2019; Soluk & Kammerlander, 2021). Beyond these conflicting views, the literature often isolates individual design elements, employs inconsistent conceptualizations, and rarely theorizes the mechanisms and tradeoffs linking design choices to transformation outcomes. Consequently, the field lacks a coherent and integrated understanding of how organizational design choices enable or constrain digital transformation (Grimpe

* Corresponding author at: University of St.Gallen, Dufourstrasse 50, 9000 St. Gallen, Switzerland.
E-mail addresses: t.e.thome@rug.nl (T. Thome), m.hanisch@rug.nl (M. Hanisch), j.oehmichen@uni-mainz.de (J. Oehmichen), p.m.m.de.faria@rug.nl (P. de Faria).

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et al., 2023; Wielgos et al., 2021).

Motivated by the particular challenges incumbent firms face in adapting legacy structures, processes, and systems to digital technologies, we conduct a systematic literature review to illuminate how organizational design shapes digital transformation. Unlike digital-native firms that were built around digital architectures from inception, incumbents must rethink existing organizational arrangements while maintaining ongoing operations, making design tensions especially difficult. We therefore ask: *How can organizational design dimensions be configured to enable digital transformation, and what tensions characterize these configurations across different stages of transformation?* To address this question, we move beyond cataloguing isolated design features toward developing an integrative perspective on how organizational elements jointly shape transformation. Specifically, we aim to (1) identify a parsimonious set of organizational design dimensions relevant to digital transformation, (2) organize these dimensions into a dynamic framework that explains their relationships and interdependencies, and (3) uncover the design tradeoffs that organizations must navigate throughout digital transformation.

We review the digital transformation and organizational design literature following established guidelines for systematic review methodology. We focus on publications in journals included in the *Financial Times 50* and *AIS Basket of Eight* from 2000 to 2025. From an initial set of 531 articles, we retain 109 for in-dept analysis. Using inductive coding, we synthesize conceptual and empirical insights into a coherent typology of eight organizational design dimensions. These dimensions operate across three sequential stages of transformation: digital leadership, digital governance, and digital culture shape the *Align* stage; digital strategy, digital organization, and digital resources and capabilities drive the *Execute* stage; and digital operating model and digital business model characterize the *Transform* stage. The resulting framework conceptualizes digital transformation as a dynamic system of organizational design choices that requires firms to navigate distinct tensions at each stage: balancing control and autonomy during alignment, stability and adaptability during execution, and optimization and reconfiguration during transformation. This perspective extends traditional structural views of organizational design by highlighting how organizational elements are continuously reshaped as technologies, markets, and ecosystems evolve.

We contribute to organizational design and digital transformation research in four ways. First, we integrate isolated organizational design dimensions into a parsimonious typology that clarifies their relevance to digital transformation (Hanelt et al., 2021; Verhoef et al., 2021). Second, we show how these dimensions interact across stages of transformation, creating distinct tradeoffs that firms must navigate when redesigning their organizations. Third, we disentangle often-conflated constructs (e.g., digital organization, operating model, and business model) and provide a middle-range theoretical framework (Bourgeois, 1979) for understanding digital transformation as an ongoing balancing of competing organizational demands. Finally, we outline avenues for future research around the identified organizational design dimensions and derive managerial implications for designing organizational structures, processes, and systems that address the tradeoffs of digital transformation.

2. Theoretical foundations

Organizational design refers to the arrangement of formal and informal attributes of an organization: its structures, processes, systems, and the way work is disaggregated and re-aggregated across units and teams (Joseph & Sengul, 2025; Sengul, 2019). Through these arrangements, organizations divide, coordinate, and recombine tasks and integrate individual contributions into firm-level value creation. Digital transformation intensifies the importance of these design choices because it involves organization-wide changes in which digital technologies such as artificial intelligence, data analytics, IoT, and connectivity reshape processes, services, products, and ultimately business models to create new forms of value creation, delivery, and capture (Verhoef et al., 2021). For incumbents, digital transformation often means redesigning structures, capabilities, routines, and coordination mechanisms to align with new digital opportunities. An illustration is ING, which, facing mounting pressure from agile fintech competitors, redesigned its organization in 2015 into self-managed squads and tribes and paired this shift with a transformed digital delivery model, which enabled faster releases and improved customer outcomes (Jacobs et al., 2017).

Foundational work in organizational design explains how structures, processes, and systems enable coordination, control, and collective action. Early theorists emphasize hierarchy, specialization, and formal rules as mechanisms to manage interdependence among organizational units (Simon, 1947; Taylor, 1911; Weber, 1978). Later contingency theorists argue that organizational design must fit environmental complexity and technological uncertainty, showing that organic, decentralized structures support innovation in turbulent contexts, whereas mechanistic structures suit stable environments (Burns & Stalker, 1961; Lawrence & Lorsch, 1967). Digital transformation extends these foundational ideas because digital technologies reduce information and communication costs, expand the range of feasible organizing forms, and redistribute coordination across humans and algorithms (Kretschmer & Khashabi, 2020; Yoo et al., 2010). For example, firms that deploy data-rich services such as predictive maintenance often redesign workflows, decision rights, and integration mechanisms to address new cross-functional interdependencies (Hanelt et al., 2021; Verhoef et al., 2021). As a result, digital transformation reopens classic questions about differentiation, coordination, and organizational fit in settings where information flows instantly, tasks shift continuously, and organizational boundaries blur (Aversa et al., 2026; Lanzolla et al., 2020; Menz et al., 2021).

Configurational theories highlight that digital transformation outcomes emerge from combinations of interdependent design elements rather than from any single structural or technological choice. Research grounded in complexity theory shows that digital capabilities rarely operate in isolation because their effects depend on how they interact with organizational structures, routines, and complementary resources. For instance, Park and Mithas (2020) demonstrate that IT-enabled analytics capability is neither necessary nor sufficient for high performance but becomes impactful only when paired with specific clusters of organizational capabilities, producing equifinal configurations that achieve both financial and customer performance. Similar nonlinear patterns appear in research on ambidexterity. Park, Pavlou, and Saraf (2020) show that digitization contributes to ambidexterity only within certain combinations of intrafirm collaboration, centralization, and alliance structures, with small and large firms requiring different configurations to balance exploration and exploitation. At a more micro level, digital innovation depends on how actors collectively configure digital tools in practice. Verstegen, Houkes, and Reymen (2019) show that configuring digital technologies in use and continuously reflecting on their application allows teams to align individual tool practices with collective goals.

Complementary process-oriented lenses explain how organizational design evolves as firms navigate digital transformation. Microstructural perspectives show how digital technologies reshape the disaggregation and re-aggregation of work, redistributing tasks, decision rights, and monitoring routines between humans and algorithms (Kellogg et al., 2020). These changes interact with institutional pressures that influence how incumbents respond to technological discontinuities. For example, securities analysts tend to reward strategies reinforcing existing technologies over digital discontinuities, steering firms toward incremental rather than transformative adaptation (Benner, 2010). Cognitive and emotional processes further shape design evolution. Research on Nokia shows how fear-based attention structures and distorted communication across hierarchical levels created temporal

myopia, undermining long-term digital innovation investments (Vuori & Huy, 2016). Prior industry affiliation also biases firms toward familiar design logics even when digital architectures require fundamentally different approaches (Benner & Tripsas, 2012). Likewise, efficiency-oriented process management can bias organizations toward exploitation, crowding out the exploratory innovation central to digital transformation (Benner & Tushman, 2002). These perspectives show that digital transformation depends as much on institutional, cognitive, emotional, and path-dependent organizational dynamics as on technological change.

Table 1 provides a structured overview of the major theoretical streams that inform research on organizational design for digital transformation. It synthesizes foundational organizational design theories, configurational perspectives, and process-oriented approaches, and highlights their core assumptions, central mechanisms, and relevance for understanding how incumbents adapt structures, coordination mechanisms, and routines in response to digital transformation.

3. Methods

3.1. Article selection

To examine organizational design dimensions related to digital transformation, we conduct a systematic literature review following Tranfield et al.'s (2003) protocol-based approach for evidence-informed management research, as summarized in Fig. 1. This method emphasizes transparent search procedures, explicit inclusion criteria, systematic coding, and an auditable review process to ensure rigor and replicability (Paul et al., 2021; Snyder, 2019). We searched *Web of Science* and *Google Scholar* for articles published between January 2000 and December 2025, including advance online publications. We selected the start date following the collapse of the dot-com bubble and in line with recent reviews on digital transformation (e.g., Hanelt et al. 2021). Our primary focus is on the journals included in the *Financial Times Research Rank* (Ormans, 2016) and the *Senior Scholars' Basket of Eight* (AIS, 2011), as shown in Table A1 in the Online Appendix A.

To ensure comprehensive coverage, we also included influential contributions from leading outlets not in these lists, such as the *Journal of Business Research* and *Long Range Planning* (e.g., AlNuaimi et al., 2022; Singh et al., 2020; Verhoef et al., 2021; Warner & Wäger, 2019). We searched titles, abstracts, and keywords using the terms *"digital transformation"* and *"digitalization"* to capture the broad conceptual domain (Snyder, 2019). *Google Scholar* complements *Web of Science* through its broader full-text indexing and distinct relevance algorithm, helping identify interdisciplinary and recently available online publications that may not yet be fully indexed in the *Web of Science*.

After merging the results and removing duplicates, the initial search yielded 531 potentially relevant articles. We then conducted a screening process based on titles, abstracts, and full texts. We excluded 257 articles that addressed digital technologies primarily as tools for incremental efficiency gains or process automation without broader organizational transformation implications. Subsequently, we retained only articles that either explicitly treated digital transformation as business model innovation (cf., Verhoef et al. 2021) or implicitly examined organization-wide redesign linked to digital technologies. We further required articles to examine at least one core organizational design mechanism identified by Joseph and Sengul (2025): configuration (e.g., organizational structure), control (e.g., governance systems), channelization (e.g., leadership and direction setting), or coordination (e.g., routines and integrative processes). These criteria narrowed the sample down to 109 articles, which we reviewed in full. For an overview, Fig. 2 presents the annual distribution of published articles by discipline and illustrates the sharp increase in publication volume since 2019. For more details, Table A2 in the Online Appendix A contains all reviewed articles, including theoretical perspective, methods, empirical context, and key findings, to enhance transparency and reproducibility.

3.2. Analytical reliability and validation

To ensure rigor and intersubjective reliability, the first two authors independently analyzed the final sample using an inductive qualitative synthesis approach informed by Nag and Gioia (2012), Gioia et al. (2013), and the Grounded Theory Literature Review Method (Wolfswinkel et al., 2013). We extracted and coded statements related to organizational design and digital transformation through open, axial, and selective coding. Open coding identified recurring concepts, axial coding linked related concepts into categories, and selective coding integrated these categories into higher-order dimensions. Our objective was theoretical sufficiency, meaning that additional articles no longer materially altered the categories or relationships emerging from the synthesis.

Consistent with the principle of theoretical parsimony,[1] we retained categories that recurred across studies and captured distinct organizational mechanisms while aggregating conceptually overlapping constructs. For example, we consolidated agile routines, experimentation practices, and digital learning mechanisms into the *digital resources and capabilities* dimension, as the literature treated them as complementary rather than independent.

We employed several procedures to strengthen reliability and validity. First, we derived first-order concepts from representative quotes and maintained links between empirical evidence and theoretical interpretation. Second, we grouped these concepts into second-order themes and used established definitions from organizational design and digital transformation literatures. For example, quotes emphasizing new value propositions, digital ecosystems, and complementary business models were grouped under *digital value propositions* and linked to *digital business model* (e.g., Caputo et al., 2021; Wielgos et al., 2021). Finally, we cross-validated connections through an examination of how each dimension manifested across studies to ensure our framework captures nuances and overarching patterns.

Furthermore, the first two authors independently participated in category development and resolved disagreements through iterative comparison with underlying studies (Snyder, 2019). We revisited original articles to verify that emerging dimensions remained grounded and examined whether they appeared across theoretical perspectives, empirical settings, and methodological approaches. To strengthen robustness, we adopted a dialectical interrogation approach (Hoon & Baluch, 2020) to compare convergent and conflicting findings. This process surfaced reinforcing and competing mechanisms underlying organizational design choices during digital transformation. For example, studies emphasize centralized governance and formal coordination to align initiatives, while others highlight agile experimentation, decentralized decision-making, and flexible structures as critical for adaptation. Similarly, some studies find that digital technologies enable ambidexterity, while others show how legacy routines constrain exploration and innovation.

Table A3 in the Online Appendix A provides the complete coding structure linking representative quotations to first-order concepts, second-order themes, and aggregate dimensions. Our synthesis yielded eight organizational design dimensions central to digital transformation: digital leadership, digital governance, digital culture, digital strategy, digital organization, digital resources and capabilities, digital operating model, and digital business model.

[1] We use theoretical parsimony to refer to the principle of explaining a phenomenon with the simplest possible framework, avoiding unnecessary complexity while retaining explanatory power. In our process, this meant focusing on the most essential constructs and relationships to ensure clarity and robustness in our final conceptual model.

Table 1
Overview of Theoretical Foundations.

Theoretical Lens	Core Assumption	Key Organizational Design Focus	Relevance for Digital Transformation	Illustrative References
Classical Organizational Design Foundations	Organizations require structures and coordination mechanisms to manage interdependence and collective action	Hierarchy, specialization, formalization, coordination, differentiation, integration	Digital technologies alter coordination costs and expand feasible organizing forms, reopening classic design questions under conditions of high uncertainty and connectivity	Simon (1947); Taylor (1911); Weber (1978); Burns & Stalker (1961); Lawrence & Lorsch (1967); Kretschmer & Khashabi (2020)
Contingency Theory	Effective organizational designs fit environmental complexity and uncertainty	Organic vs. mechanistic structures; alignment between environment and design	Digital environments increase turbulence and technological uncertainty, favoring adaptive and decentralized structures	Burns & Stalker (1961); Lawrence & Lorsch (1967); Lanzolla et al. (2020)
Configurational Perspective	Transformation outcomes emerge from interdependent combinations of organizational elements	Complementarities among structures, capabilities, governance, and digital technologies	Digital technologies create value only when aligned with complementary organizational arrangements	Park & Mithas (2020); Park et al. (2020); Verstegen et al. (2019)
Complexity and Ambidexterity Perspectives	Organizations must balance exploration and exploitation under conditions of organized complexity	Structural ambidexterity, collaboration, centralization, alliance structures	Firms require distinct configurations to simultaneously support innovation and operational efficiency	Park et al. (2020); Smith & Lewis (2011)
Microstructural Perspective	Digital technologies reshape how work is decomposed, allocated, monitored, and recombined	Task allocation, decision rights, algorithmic coordination, monitoring systems	Digital technologies redistribute coordination between humans and algorithms and enable more granular organizational designs	Kellogg et al.(2020); Joseph & Sengul (2025)
Institutional and Cognitive Perspectives	Organizational responses to technological change are shaped by institutional pressures and managerial frames	Attention structures, cognitive framing, legitimacy, path dependence	Incumbents may favor incremental adaptation and struggle to recognize disruptive digital opportunities	Benner (2010); Benner & Tripsas (2012)
Emotion and Process Perspectives	Emotions and communication dynamics shape organizational adaptation processes	Shared emotions, communication flows, managerial attention	Fear, temporal myopia, and distorted communication can undermine digital innovation and long-term adaptation	Vuori & Huy (2016); Schneider & Sting (2020)
Organizational Learning and Exploitation-Exploration Perspective	Efficiency-oriented routines can constrain exploratory innovation	Process management, routines, learning mechanisms	Existing efficiency-focused systems may crowd out experimentation critical for digital transformation	Benner & Tushman (2002); Park et al. (2020)

4. Findings

Building on the systematic literature review, we distill key insights from the selected studies to uncover how organizational design shapes and is shaped by digital transformation. Rather than merely summarizing prior work, our synthesis seeks to integrate fragmented insights into a coherent middle-range theoretical framework that explains the relationships between organizational design and digital transformation processes and outcomes (Paul et al., 2021; Short, 2009). Fig. 3 presents our conceptual model, which illustrates how organizational design and digital transformation are geared to each other across the transformation process. The framework clarifies how organizational design dimensions interact across stages to enable or constrain transformation outcomes.

The core of the framework conceptualizes digital transformation as a dynamic system of interdependent organizational design choices that organizations continuously configure and reconfigure throughout the transformation process. The *Align*, *Execute*, and *Transform* stages represent three complementary design domains that organize the organizational challenges identified across the literature. They provide a heuristic process logic through which organizations establish direction, mobilize coordinated action, and institutionalize new sources of value creation while continuously adapting to emerging technological and environmental changes. Although the stages follow a broad temporal progression, organizations repeatedly cycle between them as new capabilities, competitive conditions, and regulatory requirements emerge. For example, platform-based firms or digitally mature organizations may redesign operating and business models simultaneously, whereas more rigid incumbents often require substantial alignment of leadership, governance, and culture before large-scale execution becomes feasible.

The *Align* stage draws on leadership and governance research (e.g., Banks et al. 2022; Hanisch et al. 2023), emphasizing the need to coordinate competing interests, articulate a shared digital ambition, and establish structures that support collaboration and experimentation to develop a digital culture. This perspective resonates with Joseph and Sengul's (2025) control and coordination approaches, where coherence of interests and capabilities supports effective execution. As we show, this stage requires organizations to balance the tension between control and autonomy. While governance mechanisms create strategic alignment and accountability, excessive control can suppress experimentation, whereas too much autonomy may fragment organizational efforts and dilute strategic direction.

The *Execute* stage operationalizes the transformation through digital organization and strategy (e.g., Adner et al. 2019; Colbert, Yee, and George 2016), focusing on reconfiguring roles, processes, and resources to implement digital practices efficiently. This stage reflects the dynamic capabilities literature (e.g., Witschel et al. 2019), where execution requires agile resource deployment and cross-functional capabilities integration. A central challenge highlighted in the literature is balancing stability and adaptability. Organizations require sufficiently stable structures, routines, and priorities to coordinate complex digital initiatives, but they must simultaneously remain flexible enough to continuously realign resources, teams, and processes as technologies and market conditions evolve.

Finally, the *Transform* stage institutionalizes change through digital business model and operating model (e.g., Caputo et al. 2021; Suleman et al. 2025), ensuring that new value propositions and revenue logics are embedded and evolve with technological and market shifts. This progression mirrors the iterative, non-linear nature of digital transformation highlighted in Hanelt et al.'s (2021) review, where transformation is an ongoing process. Here, organizations must navigate the tension between optimization and reconfiguration: exploiting

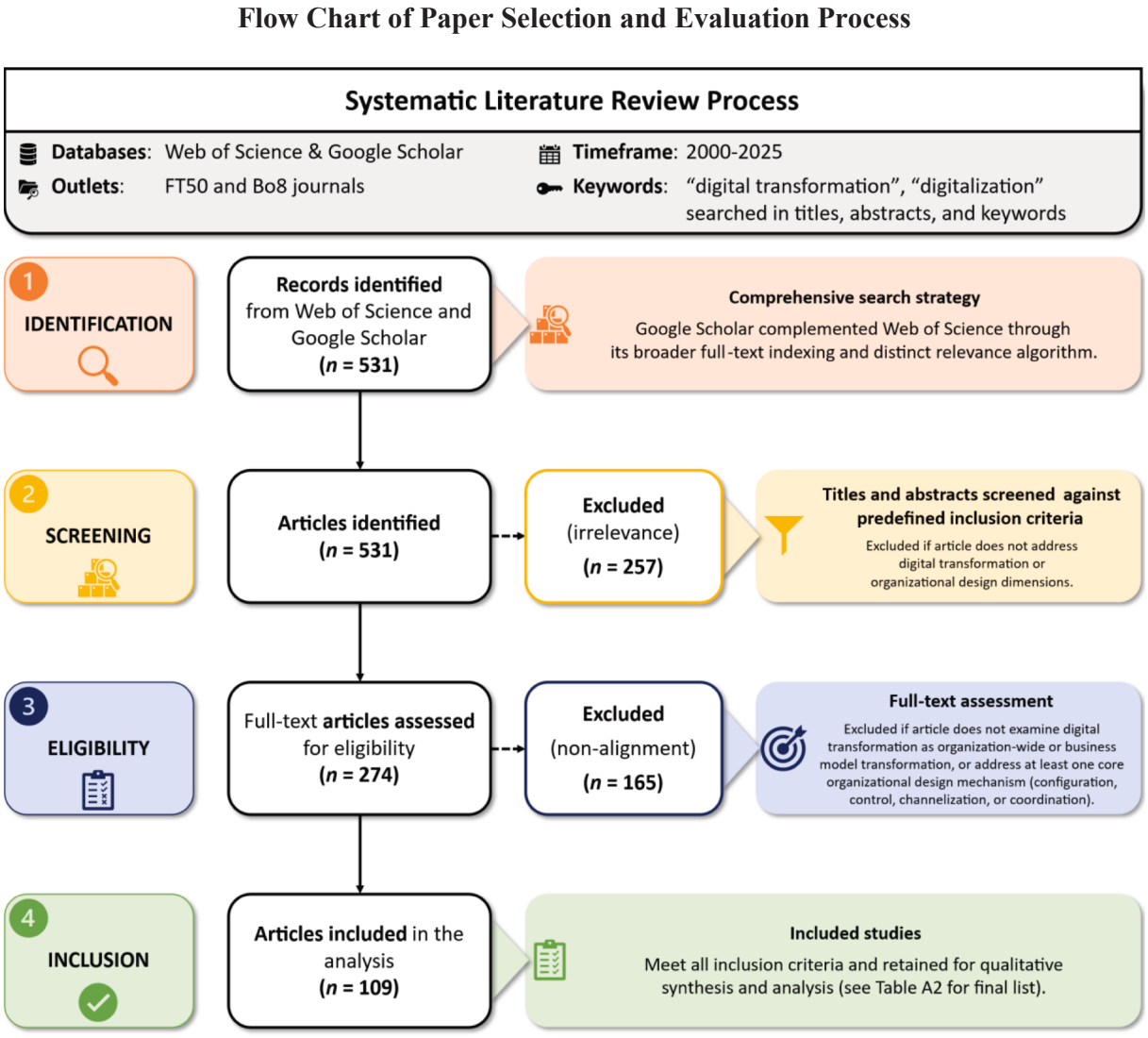


Fig. 1. Flow Chart of Paper Selection and Evaluation Process.

existing operating models to improve efficiency while simultaneously redesigning business models and organizational arrangements to pursue new sources of competitive advantage.

Surrounding these three stages, continuous feedback and adaptation connect the framework into an iterative learning cycle. Organizations evaluate outcomes, update assumptions, and reassess organizational design choices based on operational experience and environmental change, allowing learning in later stages to reshape earlier design decisions (van Giffen et al., 2025). The entire process is embedded within a broader regulatory and competitive environment that shapes both the opportunities for digital transformation and the organizational design choices available to firms.

In the following section, we focus on the underlying dimensions pertaining to each stage: digital leadership, digital governance, and digital culture (*Align*); digital strategy, digital organization, and digital resources and capabilities (*Execute*); and digital operating model and digital business model (*Transform*).

4.1. Organizational design dimensions of digital transformation

To unpack the organizational design dimensions relevant to digital transformation, we adopt a reverse-engineering approach that starts with the outcome. We thus begin with the *Transform* stage, where firms institutionalize new digital business models and operating models, and then trace backward to the organizational conditions that enable these outcomes. We next consider the *Execute* stage, where firms deploy digital strategies, resources, and organizational structures to implement transformation initiatives. We then examine the *Align* stage, where leadership, governance, and culture create the organizational foundations for coordinated action and strategic commitment. Our framework clarifies not only which organizational dimensions matter for digital transformation, but also how their interaction shapes the trajectory and sustainability of organizational change.

Digital business model. At the heart of digital transformation lies the digital business model, which defines how the firm creates, delivers, and captures value through configurations enabled by digital technologies (Kohtamäki et al., 2024). They differ from non-digital business models because digitalization reduces dependence on physical assets, enables continuous data-driven interactions, and supports new value mechanisms such as remote monitoring, autonomous functionality, and platform-based exchange (Caputo et al., 2021; Kohtamäki et al., 2019). A frequently cited example of transformation is Netflix's shift from mail-based DVD rental to online streaming, which displaced established competitors and demonstrated how digital delivery can redefine industry economics (Fabian et al., 2024; Giustiziero et al., 2023; Sting et al., 2024; Teece, 2010). Research shows that digital business model

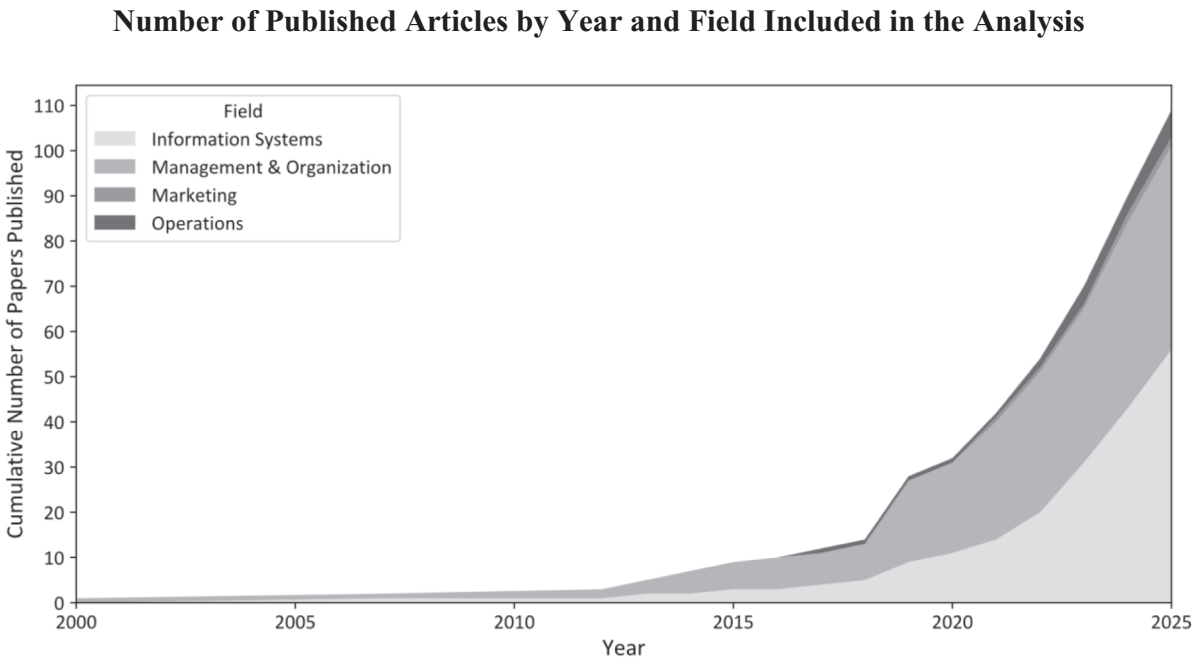


Fig. 2. Number of Published Articles by Year and Field Included in the Analysis Note: This figure illustrates the cumulative number of articles published across four fields—Information Systems, Management & Organization, Marketing, and Operations—from 2000 to 2025. The graph highlights a marked increase in research output beginning around 2015, with a peak in publications in recent years, reflecting growing academic interest in digital transformation and related topics. Our literature review includes 109 articles published up to and including 2025.

innovation often extends beyond firm boundaries through ecosystems and collaborative value creation (Bocken et al., 2025; Oberländer et al., 2025). At the same time, digital transformation can threaten incumbent value logics through commoditization, requiring firms to develop complementary business models and new sources of differentiation (Raffaelli & NOE, 2025). Digital technologies continually reshape how firms create, deliver, and capture value, compelling organizations to repeatedly adapt their business models in response to technological change, ecosystem dynamics, and competitive pressures (Böttcher et al., 2022; Lehmann et al., 2022; Teece, 2010; Teece & Linden, 2017; Witschel et al., 2019).

We recognize that digital business model innovation plays a dual role: it can serve as both a precursor to and a result of digital transformation. Our investigation primarily concentrates on its role as a precursor. While the literature broadly concurs that digital transformation pursues the development of a new digital business model (Angelopoulos et al., 2023; Hanelt et al., 2021; Plekhanov et al., 2023; Verhoef et al., 2021), definitions of what exactly constitutes a digital business model vary (Luz Martín-Peña et al., 2018). In contrast to business models in general, digital business models are characterized by "the accelerated pace of value creation and changes in resource management" (Plekhanov et al., 2023, p. 825) and have "either fully digital or combine physical and digital value propositions to customers in innovative ways" (Snihur & Markman, 2023, pp. 7–8). Jedynak et al. (2021) propose three main constituents: (1) the creation of digital opportunities to generate customer value and satisfy their expectations, (2) the creation of digital supply chains, and (3) the creation of digital marketplaces where goods and services are traded.

The literature shows that digital business models often generate new value propositions, ecosystem relationships, and complementary revenue logics. A significant body of research connects digital business models to customer-centric approaches, which use digital channels and analytics to customize products, services, and interactions (Arakji & Lang, 2007; Chanias et al., 2019; Furr & Shipilov, 2019; Gomber et al., 2018; Michelman, 2019; Westerman, 2022). Recent studies reinforce this trend, highlighting that customer-centricity and cross-functional collaboration are among the strategic capabilities most strongly linked to successful digital transformation (Weritz et al., 2025). Additionally, digital business models increasingly depend on ecosystem participation, where firms integrate internal and external digital resources through platform relationships, orchestration, and cooperation mechanisms (Oberländer et al., 2025; Tan et al., 2020; Teubner & Stockhinger, 2020). At the same time, incumbents must balance legacy and digital business models, often developing complementary models such as subscription services, servitization offerings, or platform extensions while safeguarding the economics of their existing business (Frankenberger et al., 2019; Govindarajan & Immelt, 2019; Plekhanov et al., 2023).

Adapting to customer-centric business models often involves the digital integration of business processes and value networks within and across organizational boundaries in digital ecosystems (Márton, 2022; Oberländer et al., 2025; Wielgos et al., 2021). Within these ecosystems, digital platforms facilitate the connection of customers, suppliers, and third parties, with customers themselves sometimes contributing to the value chain through activities like content creation (Teubner & Stockhinger, 2020). A notable example of this integration is the active involvement of customers in content creation, which not only enriches the value of the ecosystem, but also engenders deeper interweaving among producers, end-users, and platform providers (Tan et al., 2020). However, this shift towards a more interconnected model presents significant challenges for incumbents. These organizations must navigate the complexities of developing a digital business model alongside their existing one. This requires a strategy to create a new digital business model that complements their existing business model (Frankenberger et al., 2019) or the adaption of the existing business model through digital transformation (Govindarajan & Immelt, 2019).

Digital operating model. Digital operating models refer to the configuration of processes, structures, technologies, and routines through which a firm executes its digital strategy and delivers value in a data-intensive environment. They differ from traditional operating models because they rely on real-time data flows, integrated digital platforms, and automated workflows that create flexible, end-to-end systems rather than linear, functionally siloed processes (Angelopoulos

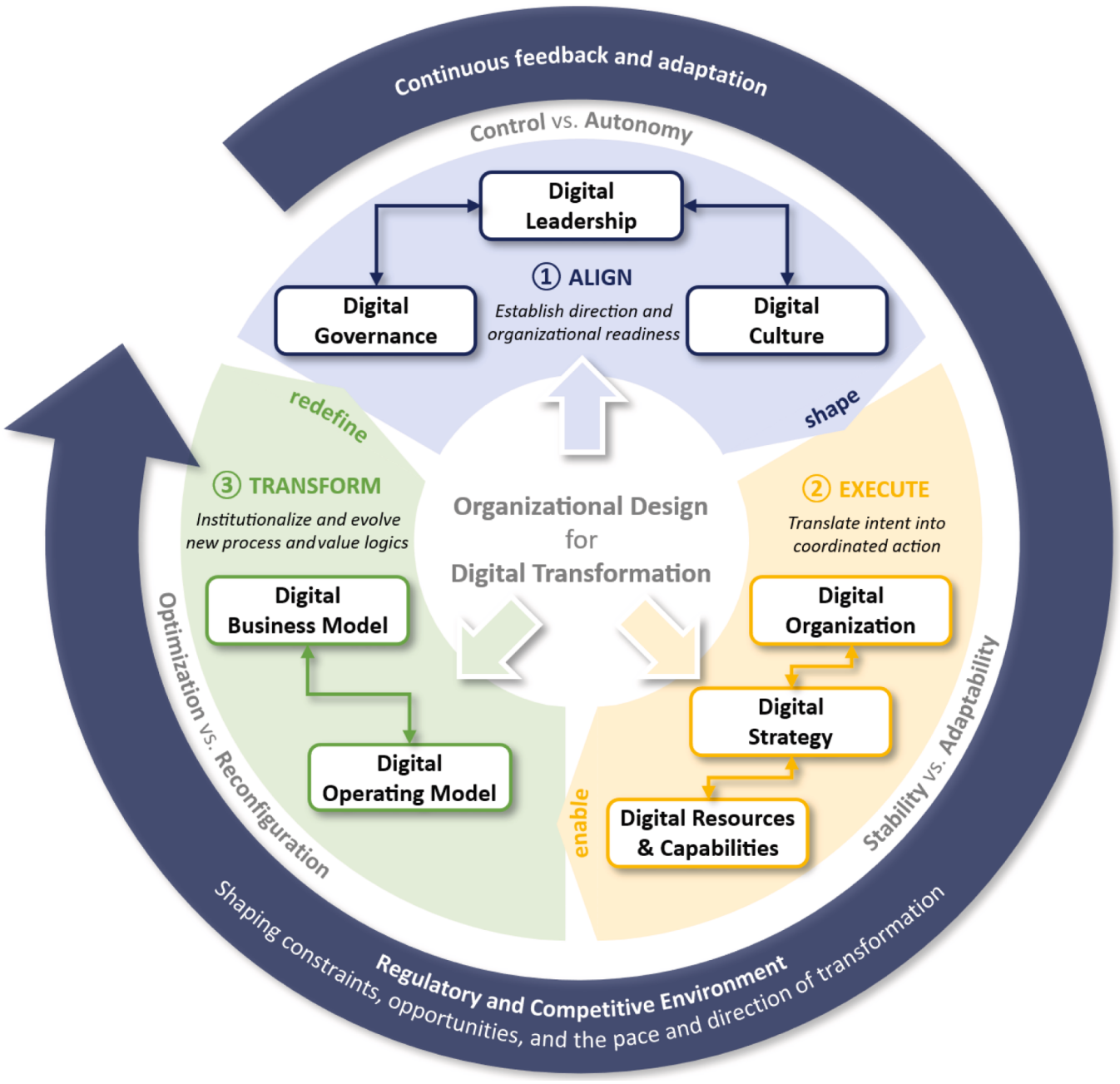


Fig. 3. Conceptual Framework: Organizational Design for Digital Transformation.

et al., 2023; Berman, 2012; Schiavone & Sprenger, 2017). An illustrative example is De Volksbank's redesign of its mortgage journeys, which integrated analytics and workflow automation to personalize customer interactions and improve process coordination (Adobe Inc., 2025). Such transformations reflect the core logic of digital operating models: combining digitalization, analytics, and intelligent process automation to enhance customer journeys and internal processes (Bollard et al., 2017). Recent evidence also shows that AI-based boundary resources can materially improve operating performance when firms possess the governance and technical capabilities to integrate them into core processes (Hanelt et al., 2025). Consequently, digital operating models form the execution backbone that allows firms to translate digital strategy into scalable and resilient operations (Sinha, 2022; Suleman et al., 2025).

The literature underscores that an adaptable IT infrastructure and digital workplace tools are core enablers of digital operating models, enhancing operational capabilities and fostering collaboration (Soluk & Kammerlander, 2021; Westerman et al., 2019). These operational capabilities permit IT flexibility, such as scalability, operational adjustments, and adaptable process modifications, which, in turn, enable organizations to transform (Steininger et al., 2022). This requires strategic collaboration between IT and other departments to ensure effective decision-making and organizational alignment, which facilitates companies' adaptation to changing business needs, the introduction of new products, and experimentation with customer solutions (Frankenberger et al., 2019; Tyagi, 2021). The availability of pertinent business data and collaboration tools are posited as necessary for decision-making and cross-functional work. Moreover, transparency between departments is

associated with increased productivity, employee engagement, and trust (Iansiti & Lakhani, 2014; Westerman et al., 2019). One area of focus is on the assets that exist within the organization, such as legacy hardware or industrial machines. The integration of legacy systems with contemporary technologies is considered crucial for having transparent business data available and being able to offer new products and services (Fitzgerald, 2013; Iansiti & Lakhani, 2014). One potential strategy involves the rapid development of front-end applications coupled with a gradual, modular replacement of legacy systems, which allows for the decommissioning of components of the legacy system over time, while maintaining continuous progress in fulfilling customer requirements (Furr & Shipilov, 2019).

Business processes within digital operating models, to be efficient and effective, require a certain maturity and standardization within an organization (Khuntia et al., 2017). In the context of digital transformation, organizations must be able to develop intelligent, connected, and customized products (Porter & Heppelmann, 2024). This requires standardized processes supported by technology and software, driven by automation, data, and virtualization (Meng et al., 2022). The interlinking of digital processes, therefore, emerges as a crucial design feature for digital transformation, enabling companies to serve customers more individually by integrating the market-based core business processes, e.g., supply chain management, customer relationship management, and product/service development management (Wielgos et al., 2021). As part of this shift, incumbents are required to design their organizations to accommodate the often-dissimilar activities of legacy product-based and digital platform-based business models (Van Dyck et al., 2024). In this context, dynamic capabilities can provide the organization with the ability to identify and react to opportunities by developing new processes, products, and services (Karimi & Walter, 2015). This includes the capacity to innovate and adjust services quickly, utilizing concurrent testing and reactive modification to rapidly respond to user feedback (Huang et al., 2017).

Relatedly, organizations gain from maintaining rapid release cycles to swiftly introduce new products that align with evolving customer needs, uphold safety standards, and reinforce their core value proposition (Fitzgerald, 2013). This requires the existence of digital core processes, the gathering of qualitative information about transactions within the process, and the ability to use this information to transform the process, such as in decision-making scenarios (Meng et al., 2022). Understanding consumer interactions with online products enables organizations to accelerate customization of their offerings, thereby aligning product development cycles with market demands (Michelman, 2019). It is often observed that transformation is more likely achieved through incremental steps aimed at enhancing the delivery of the core value proposition, rather than through significant overhauls of manufacturing processes, distribution channels, or business models (Furr & Shipilov, 2019; Joglekar et al., 2024).

Digital strategy. Digital strategy refers to how organizations create and sustain competitive advantages by leveraging digital technologies, data, and analytics to differentiate themselves in rapidly evolving markets. Unlike traditional strategy, which focuses on positioning, resource allocation, and scale within relatively stable industry boundaries, digital strategy operates in an environment that is qualitatively different because digital representations, connectivity, and data aggregation transform the nature of resources, competition, and organizational design (Adner et al., 2019). These dynamics make data and algorithms "scale-free resources," enable scope expansion across blurred industry boundaries, and support new digitally enabled coordination forms, requiring strategic choices grounded in agility, experimentation, and direction-setting (Ross et al., 2018). Effective digital strategy thus provides a coherent path for using digital technologies to build hard-to-replicate value, whether through superior customer engagement or information-rich solutions, rather than simply modernizing existing models. For instance, ABB developed a digital strategy to gain competitive advantage by embedding connectivity and analytics into industrial equipment, enabling predictive services that strengthened its market position (Correani et al., 2020). Achieving such advantage requires integrating digital capabilities, aligning organizational resources, and embedding a digital-first mindset across the firm (Gupta, 2018; Hughes et al., 2024; Proksch et al., 2024).

Despite the growing emphasis on digital transformation, many organizations struggle with the implementation of digital strategy (Correani et al., 2020). Navigating digital strategy has become a central strategic issue in boardrooms, requiring leaders to develop a digital mindset that is expressed in every facet of the organization, from governance and culture to capabilities and talent (Gupta, 2018). Compounding the challenge, a digital transformation strategy is a "moving target" that is continuously in the making, without a foreseeable end state (Chanias et al., 2019), and alignment around digital priorities is difficult because organizations cannot fully articulate their digital strategies ex ante in highly dynamic environments (Yeow et al., 2018). Firms therefore need complementary capabilities, structures, and change processes to enact such a digital strategy (Proksch et al., 2024). In this regard, effective communication of a digital strategy is emphasized, as it helps to overcome challenges arising from heterogeneous and often inconsistent perceptions of what digitalization means for the various stakeholders within an organization (Kowalski et al., 2025).

Digital organization. A digital organization is one in which core activities, decisions, and interactions are structured around data, software, and digitally mediated coordination rather than traditional hierarchical routines. Unlike conventional organizations that rely heavily on sequential workflows and bounded structures, digital organizations embed digital technologies into task design, monitoring, and collaboration, enabling real-time visibility and rapid recombination of work (Kretschmer & Khashabi, 2020). A central shift is the move from human-centric coordination toward what Schildt (2022) describes as digital omniscience and digital omnipotence, where firms seek to represent operations through continuous data flows and control processes with software-based automation (Glaser et al., 2024). Digital organizations also rely on actor-oriented architectures that enable self-organization through shared digital commons and protocols rather than top-down oversight (Snow et al., 2017). For example, Haier transformed from a hierarchical appliance manufacturer into an online-based conglomerate of autonomous micro-enterprises coordinated through its industrial IoT platform COSMOPlat (Frynas et al., 2018). Majchrzak et al. (2016) further show that digital organizations evolve through emergent, multilayered interactions rather than static structures, reflecting ongoing adjustments in response to technological and social dynamics.

The literature argues that organizational structures influence dynamic capabilities for digital transformation. This can include pivoting toward flexible and agile coordinated organizational structures that promote continuous improvement (Weritz et al., 2025; Wielgos et al., 2021). Flexible structures enable the integration of user feedback throughout the process (Fitzgerald, 2014), thereby ensuring product alignment with market demand (Furr & Shipilov 2019; Hanelt et al. 2021; Meng et al. 2022). Implementing agile team or network structures can facilitate adaptive environments (Chanias et al., 2019; Huang et al., 2017; Wielgos et al., 2021), utilizing a pool of shared and external resources (Oberländer et al., 2021). These structures, however, require significant top-down authority, usually from the CEO, and centralization at the highest level of the organizational hierarchy (Gilbert et al., 2012). Further, these structures require dedicated financial and human resources (Karimi & Walter 2015), as well as non-competing collaborations with third parties to jointly manage digital transformation through strategic cooperation (Khanagha et al., 2022; Oberländer et al., 2021).

Debate exists, however, regarding the optimal management of these resources, particularly in the context of organizational design. On the one hand, scholars point out the benefits of decentralized structures, which prioritize local autonomy and flexibility (Rosenbloom, 2000; Soluk & Kammerlander, 2021). Conversely, others argue for the establishment of a central unit dedicated to digital functions, essential for

driving transformative change (Govindarajan & Immelt, 2019; Holotiuk et al., 2024). Gilbert et al. (2012) noted that the highest-level leadership should lead capabilities exchange for effective coordination. Frankenberger et al (2019) introduce an additional nuance, suggesting that the appropriateness of a digital transformation structure is contingent upon the digital maturity of the organization, proposing that initially, a standalone business unit may be the most effective approach.

Digital resources and capabilities. Digital resources and capabilities refer to the digitally encoded assets (e.g., data, software, AI-tools) and the organizational capacities to sense, seize, and reconfigure value from them. Digital resources differ fundamentally from non-digital resources because they possess unique structural properties, modularity, encapsulated value, and programmatic interfaces, that allow them to be recombined, scaled, and deployed at near-zero marginal cost (Piccoli et al., 2022). These attributes make digital resources inherently more scalable and "scale free" relative to physical or human assets, enabling phenomena such as hyperspecialization and hyperscaling in digital firms (Amit & Han, 2017; Giustiziero et al., 2023). Digital capabilities, in turn, reflect the organizational ability to mobilize these resources, for example through digital sensing (using analytics to detect customer needs), digital seizing (crafting new digital offerings), and digital reconfiguring (modifying resource bases through digital tools) (Baiyere et al., 2025; Kowalski et al., 2025). Unlike traditional capabilities tethered to physical processes, digital capabilities rely on data-driven routines, technical infrastructure, and digitally skilled personnel. A salient example is Stripe, whose modular payment capability encapsulates complex organizational processes behind an API, letting thousands of firms integrate it into their digital strategies at massive scale (Jewell & Marden, 2018; Piccoli et al., 2022). This illustrates how digital resources and capabilities expand strategic options far beyond what non-digital assets permit.

Digital transformation goes hand in hand with workforce transformation (Poláková-Kersten et al., 2023), which requires special skills from individuals in the organization. At the employee level, proficiency in software development is particularly required to deliver digital products and services that differentiate an organization from its competitors (Iansiti & Lakhani, 2014; Karaevli et al., 2021). Karaevli et al. (2021) also emphasize the shift in focus from coordinating external labor to internally cultivating a skilled workforce that includes engineers, software developers, and data analysts. The literature also indicates the required capabilities of executives, such as analytical skills and digital competencies (Fitzgerald, 2014). Further, executives should strive to make digital transformation palpable to employees to mitigate potential resistance to change and ensure implementation (Soluk & Kammerlander, 2021). Wade and Obwegeser (2019) contend that the capabilities of senior management demand a balance between digital competence and internal credibility. For instance, the proficiencies of a Chief Digital Officer (Christofi, 2024; Firk et al., 2021) should be tailored to the ambiguity inherent in the role. They posit that roles with high ambiguity demand individuals who command high internal credibility to steer company transformation. Conversely, roles with lower ambiguity require a robust level of digital competence, honed towards specific domains such as marketing or technology.

Thus, recruiting, building, and retaining talent is crucial for the development of dynamic capabilities to confront digital transformation challenges (Frankenberger et al., 2019; Kiron & Spindel, 2019). Kane et al. (2019) recommend providing adequate training, moving employees within the organization, and cultivating an environment in which employees can contribute their knowledge. This approach, however, hinges on a precise understanding of the skill sets that need to be developed, otherwise, organizations will fail to develop needed capabilities (Karaevli et al. 2021; Peerally et al. 2022). Pedersen (2022) strengthens this argument, noting that re-skilling and organizational knowledge integration pose significant challenges in digital transformation. Hence, Westerman (2022) suggests greater management focus on leveraging employees' existing experiences and innovatively facilitating skill and career development. From an operational perspective, Govindarajan & Immelt (2019) suggest the creation of a dedicated HR function for talent management, alongside opportunities for enhancing their digital skills (Kane et al., 2016). Co-location is also emphasized as a strategy for facilitating mutual learning and support among talent (Govindarajan & Immelt, 2019; Iansiti & Lakhani, 2014).

Digital leadership. Digital leadership refers to the ability of leaders to guide organizations through digital transition and operate effectively in environments shaped by data, algorithms, and digitally mediated work practices (cf. Banks et al. 2022). Unlike traditional leadership, rooted in hierarchical authority, experiential judgment, and face-to-face influence, digital leadership blends technological fluency with strategic sensing, data-driven decision-making, and the capability to orchestrate human–machine collaboration (Hossain et al., 2025). Digital leaders cultivate digital mindsets, instill cultures of experimentation and learning, and align organizational structures and capabilities with digital strategy (Bevilacqua et al., 2025). They also differ from non-digital leaders by treating the organization as a network rather than a hierarchy and by leveraging AI and digital tools to extend analytical capacity and accelerate decision cycles. A salient example is the rise of the Chief Digital Officer: firms such as McDonald's, Nike, and Novartis appointed CDOs to centralize digital transformation leadership, coordinate fragmented digital initiatives, and advocate for new digital business models under conditions of disruption (Bendig et al., 2023; Firk et al., 2021; Lorenz & Buchwald, 2023). As the domain evolves from e-leadership toward a broader mindset, digital leadership increasingly represents an ethical, agile, and trust-based approach to navigating ongoing technological change (Tigre et al., 2023).

Leaders and their behavior take a central role in anchoring dynamic capabilities in the organization (Karimi & Walter, 2015), particularly when acting as environmental sensors and learners (Canhoto et al., 2021). The literature highlights the importance of a digital mindset and transformational leadership style in developing these capabilities (Canhoto et al., 2021; Frankenberger et al., 2019; Vial, 2019). A digital mindset entails organizational leaders promoting an environment that embraces digital technologies and the ability to adapt to disruptions associated with their use (Vial, 2019). Transformational leadership focuses on empowering employees to take ownership of their roles and adapt quickly to changing demands and technologies (Frankenberger et al., 2019). Thereby, leaders should be transparent about performance indicators and encourage failing fast and sharing the results of experiments (Westerman et al., 2019), and actively seek advice from both internal and external sources (Hock-Doepgen et al., 2025).

Finally, the integration of digital technologies into organizations necessitates that leaders develop a new set of competencies. Among these required competencies are utilization of data analytics, rapid experimentation, and the seamless integration of digital products and processes within existing organizational structure (Braojos et al., 2024; Malik et al., 2024; Westerman et al., 2019). Leaders who embrace algorithmic decision-making can coordinate activities effectively across various business sectors, from manufacturing to procurement (Soluk & Kammerlander, 2021). The ability to implement such algorithmic decision-making in firms is contingent on their aptitude to perform analytics on large-scale data (Newell & Marabelli, 2015; Vial, 2019). By developing these core leadership skills, organizations can build capabilities that enable data-driven decision-making, real-time process monitoring, and detailed customer journey analyses (Westerman et al., 2019), helping re-engineer processes and enhancing decision support and data analytics (Meng et al., 2022).

Digital governance. Digital governance refers to the digitally enabled mechanisms of control, coordination, incentives, and trust that guide how organizations, and increasingly ecosystems, allocate decision rights and regulate the behavior of agents executing tasks. Unlike traditional, analog governance based on hierarchy, contracts, and relational norms, digital governance relies on algorithmic protocols, programmable rules, and design features embedded directly into digital

infrastructures (Hanisch et al., 2023). These mechanisms scale governance beyond what human oversight can manage, making them essential in settings characterized by high "transactivity," where thousands or millions of actors interact simultaneously. Digital governance is also distinct from classic IT governance: rather than determining who decides about IT, it governs *through* digital technologies themselves, via access control, behavioral monitoring, cybernetic incentives, and automated coordination (S. Chen & King, 2022; Tiwana et al., 2013). A salient example is Uber: its algorithm assigns rides, evaluates performance through ratings, and enforces behavioral constraints, effectively exercising managerial authority without formal employment relationships (Kellogg et al., 2020; Möhlmann et al., 2021). Such digitally embedded governance mechanisms illustrate how algorithmic systems now perform coordination and control functions that analog mechanisms cannot replicate.

Effective governance structures are critical to enabling digital transformation by providing control mechanisms that support value creation and capture (Wiener et al. 2019). Internally, accountability and performance management are foundational, while externally, transparency and partnerships play pivotal roles in ensuring alignment and trust. Chanias et al. (2019) emphasize the importance of establishing a dedicated digital transformation unit, appointing a Head of Digital Transformation, and forming a cross-functional board to ensure clear ownership and coordination. Westerman et al. (2019) further advocate for creating guidelines that balance speed and autonomy with integrity, which nurtures an environment where experimentation is encouraged without excessive bureaucratic oversight. Performance management systems must align goals, adapt to change, and enhance decision-making while maintaining employee engagement. Frankenberger et al. (2019) suggest establishing separate KPIs for legacy and digital businesses, adjusting them based on developmental stages, with metrics such as patents, productivity impact, profitability, risk mitigation, and customer loyalty (Kohli & Melville, 2019). Research further shows that board-level attention and governance capability are critical because many boards struggle to interpret the strategic implications of digital investments and must develop mechanisms to frame them as enterprise risks and opportunities (Adelakun et al., 2025). Regular monitoring of outcomes, as seen in organizations such as Google and IBM, supports innovation, continuous customer feedback, and progress tracking (Kiron & Spindel, 2019; Westerman et al., 2019).

Incentives and transparency are equally essential in driving successful digital transformation. While financial and non-financial rewards help align employee efforts with organizational goals and mitigate resistance to change, most organizations struggle to align reward structures with transformation objectives (Fitzgerald et al., 2013; Schrage et al., 2019; Wade & Obwegeser, 2019). Transparency, both internally and externally, is crucial for managing risks and maintaining stakeholder trust. Clear communication of goals and results enables fact-based reconciliations during conflicts (Furr & Shipilov, 2019; Menz et al., 2021; Westerman et al., 2019). Additionally, partnerships and acquisitions serve as strategic levers for accessing new technologies, talent, and ideas, thereby facilitating meaningful transformation (Govindarajan & Immelt, 2019; Soluk & Kammerlander, 2021). These collaborations help organizations develop integrative capabilities to adapt to evolving environments, insource critical knowledge, and extend value chains (Prügl & Spitzley, 2021). Furthermore, partnerships enable the creation of digital business ecosystems, allowing firms to leverage complementary resources and capabilities (Hanelt et al., 2021; Reuter & Floyd, 2024).

Digital culture. Digital culture refers to the shared values, beliefs, and norms that guide how an organization adopts, integrates, and leverages digital technologies to create value and adapt to dynamic environments (Sanchís-Pedregosa et al., 2025). Unlike non-digital cultures, which emphasize stability, formal routines, and established hierarchies, digital cultures prioritize openness to change, data-driven decision-making, cross-functional collaboration, continuous learning, and a tolerance for experimentation and failure (Duerr et al., 2018; Leal-Rodríguez et al., 2023). This shift also reflects a deeper reconceptualization of culture itself: digital cultures combine collective meaning systems with flexible toolkits that employees use to navigate the emancipatory and controlling aspects of digital technologies (Grover et al., 2022). As part of DBS's digital transformation strategy, CEO Piyush Gupta encouraged a culture of experimentation and continuous learning across the workforce to build a "22,000-person start-up"(Meehan & Abraham, 2017). These practices contrast with traditional cultures built on formal control and risk avoidance. Digital culture also shapes how employees interpret digital transformation initiatives and respond to emerging forms of algorithmic control (Lanzolla et al., 2020), underscoring its central role in enabling organizations to operate effectively in increasingly digitalized environments.

Our analysis indicates several factors within organizational culture that contribute to the development of a new digital business model, including aspects like the workplace environment and a culture of continuous feedback. Broadly speaking, a digital culture is vital for the digital transformation process and can both facilitate or inhibit its course (Wielgos et al., 2021). This may necessitate a cultural shift characterized by risk-taking, experimentation, and agility-inspired practices (Canhoto et al., 2021; Chanias et al., 2019; Karimi & Walter, 2015; Shirish et al., 2023). Such a shift supports learning through incremental and iterative changes, empowering organizations to adapt to long-term strategies and dynamic environments (Braojos, Weritz, and Matute 2024; Vial 2019). In addition, the literature shows that the workplace environment has an influence on organizational culture. As digital transformation is a collaborative process it requires a jointly owned, team-focused, and collaborative environment, which stimulates creativity (Chanias et al., 2019; Reck & Fliaster, 2019). Continuous feedback allows individuals to manage expectations (Schrage et al., 2019) and encourages open communication and growth (Tyagi, 2021). It enables organizations to continually improve based on results, adopting a flexible and adaptable mindset while moving at a pace conducive to learning and scaling effectively (Schrage et al., 2019; Westerman, 2022).

Continuous feedback and adaptation. As technologies, markets, and user needs evolve, organizations are pushed to continuously evaluate outcomes, learn from experience, and adapt organizational design. Continuous feedback mechanisms enable firms to detect emerging misalignments between strategic intent and operational reality, identify implementation bottlenecks, and iteratively refine routines, governance, and resource allocation (van Giffen et al., 2025). Beyond monitoring performance, they institutionalize organizational learning by embedding regular reflection into everyday work, allowing organizations to update assumptions, revise priorities, and reconfigure capabilities as new information becomes available. This recursive process also strengthens dynamic capabilities by connecting sensing, seizing, and reconfiguring across all stages of transformation (Teece, 2010; Witschel et al., 2019). Rather than viewing digital transformation as a linear progression, the framework therefore emphasizes continuous feedback loops that connect the *Align*, *Execute*, and *Transform* stages, allowing organizations to revisit earlier design choices as circumstances change and new opportunities emerge.

Regulatory and competitive environment. The entire framework is embedded within a broader regulatory and competitive environment that shapes both organizational design and digital transformation. Regulatory requirements, industry standards, and public policy influence governance arrangements, data practices, and technology adoption, while competitive dynamics determine the pace, scope, and strategic direction of transformation. For example, the GDPR's enhanced consent requirements led firms to redesign how they solicit data permissions, reshaping consumer opt-in behavior and enabling more targeted, effective marketing once consent was granted (Godinho de Matos & Adjerid, 2022). Likewise, competitive pressures from digital-native firms or platform ecosystems often accelerate organizational

redesign, prompting incumbents to adopt more agile structures, ecosystem partnerships, and new business models. These external conditions act as boundary conditions that create constraints, opportunities, and incentives for how firms initiate and sustain digital transformation over time (Benner, 2010; Joseph & Sengul, 2025; Verhoef et al., 2021).

4.2. Relationships between organizational dimensions in digital transformation

The organizational design dimensions presented in Fig. 3 are interdependent, with feedback loops between stages reflecting the dynamic and non-linear reality of digital transformation. The arrows in Fig. 3 illustrate these interdependencies, highlighting how dimensions influence one another across the transformation journey. For example, digital strategy shapes the allocation of digital resources and capabilities, which in turn enable the realization of new digital business models. Similarly, digital governance structures influence digital leadership and digital organization, which collectively determine how effectively digital operating models can be implemented. These relationships underscore that digital transformation is not a linear process but an iterative cycle where progress in one dimension reinforces or reshapes others, creating a system of mutually reinforcing mechanisms. The following section explores these interdependencies in detail.

Digital strategy, digital resources and capabilities, and digital business model. Digital strategy specifies how a firm will compete in digitally enabled markets by mobilizing distinctive resources and capabilities. Research treats digital resources such as data, modular software, and APIs as foundational inputs that a digital strategy orchestrates to achieve competitive advantage (Bharadwaj et al., 2013; Piccoli et al., 2022). Dynamic capabilities explain the causal chain: sensing opportunities through data, seizing them with deployments of digital capabilities, and reconfiguring asset bundles to instantiate new business model logics (Adner et al., 2019; Witschel et al., 2019). Empirical work on incumbents shows that strategic choices about scope and value capture require matching operating and technical capabilities, because without appropriate digital options and platform capabilities a promising digital strategy cannot produce a viable digital business model (Kohtamäki et al., 2024; Sebastian et al., 2017). The proposed direction is therefore from strategy to resources and capabilities, and from resources and capabilities back to realized business model change through enactment and learning.

Digital strategy, digital organization, and the digital operating model. A firm's digital strategy drives structural and operating choices that compose the digital organization and the digital operating model. Strategy articulates required value propositions and competitive positioning, which in turn determine whether the firm must adopt an operational backbone for reliability or a digital services layer for rapid experimentation (Hess et al., 2016; Sebastian et al., 2017). The literature frames this as a fit and reconfiguration problem: strategy creates demands for new processes, governance, and IT architectures and the digital operating model supplies the runtime capabilities to execute those demands (Bollard et al., 2017; Suleman et al., 2025). Theoretical accounts draw on contingency and configuration perspectives to explain why particular strategy types map to distinct operating model configurations. Empirical studies find that mismatches produce implementation failure, which explains the recurrent observation that strong strategy without corresponding digital operating model redesign often fails to yield the intended transformation outcomes (Correani et al., 2020; Yeow et al., 2018).

Digital governance, digital resources and capabilities, and digital business model. Digital governance shapes how digital resources are allocated, accessed, and combined and therefore affects which digital business model choices are feasible. Platform and ecosystem literatures show that governance mechanisms determine incentives, access rules, and interface standards that shape complementor activity and value appropriation (L. Chen et al., 2022; Tiwana et al., 2013). Governance is enacted both through organizational arrangements and through embedded design features such as APIs, reputation systems, and algorithmic rules that encode access and usage policies (Hanisch et al., 2023; Piccoli et al., 2022). The mechanism runs from governance to resource flows to business model performance: governance configures the affordances of shared digital resources and thereby determines whether a platform can capture network externalities or whether servitization offerings can coordinate across firm boundaries (Kohtamäki et al., 2019; Uzunca et al., 2022). This explains why governance rigidity or poor architecture often undermines otherwise promising digital value propositions.

Digital leadership, digital governance, and digital organization. Digital governance and digital leadership co-produce organizational form and decision rights in digital transformations. Empirical work on CDOs and CIOs shows that leadership roles shape governance choices by defining priorities for centralization, resource allocation, and orchestration across units (Firk et al., 2021; Tumbas et al., 2020). When leaders institutionalize governance principles, organizational boundaries, responsibilities, and operating rhythms change, producing new hybrid forms such as bimodal IT or transfunctional digital units that bridge business and IT (Lorenz & Buchwald, 2023; Vaia et al., 2022). Thus, leadership influences governance selection and enactment, which in turn restructures the digital organization to support strategic objectives and control requirements.

Digital leadership, digital culture, and digital resources and capabilities. Digital leadership shapes digital strategy and serves as a primary driver of cultural change and capability development during digital transformation. Leaders set priorities, allocate resources and shape routines that enable the formation of a data-driven and experimentative culture (Bevilacqua et al., 2025; Singh et al., 2020). Theoretical accounts using dynamic managerial capabilities propose that leaders' sensing, seizing, and reconfiguring actions accelerate capability building by removing organizational barriers and mobilizing talent (Hossain et al., 2025; Kowalski et al., 2025). Empirical studies report that digital leaders who champion analytics, continuous learning, and cross-functional collaboration create environments where digital resources are absorbed into productive capabilities (Braojos et al., 2024; Malik et al., 2024). Evidence also shows that strategic capabilities such as cross-functional collaboration, absorptive capacity, organizational agility, and customer-centricity reinforce the translation of leadership intent into digital transformation success (Weritz et al., 2025). The pathway runs from leadership behaviors to cultural norms to enhanced capability deployment, so leadership is a necessary, though not sufficient, condition for converting digital resources into firm-level routines and performance gains.

Digital culture, digital organization, and the digital operating model. Digital culture conditions how organizational structures and operating models perform under transformation. A culture that values experimentation, knowledge sharing, and tolerance for failure lowers coordination costs associated with cross-functional and platform-based organizing and makes actor-oriented architectures more viable (Duerr et al., 2018; Snow et al., 2017). Conversely, cultures oriented toward rigid rules or narrowly defined goals impede adoption of flexible operating models and emergent organizational forms (Kane et al., 2016; Leal-Rodríguez et al., 2023). The mechanism is one of enabling social infrastructure: culture shapes attention, incentives, and legitimacy for new processes so that operating model changes such as customer journey centricity or intelligent process automation can be embedded and scaled. Thus, culture is an antecedent that influences how effectively new digital operating models are instantiated and sustained.

Digital resources and capabilities, digital organization, and digital business model. Digital resources and capabilities are the engine of digital business models because they create new strategic options and lower cost of experimentation. Resource-based and dynamic capabilities literatures show that modular digital assets and platform capabilities enable rapid recombination into alternative value propositions and

revenue logics (Giustiziero et al., 2023; Sambamurthy et al., 2003; Sambamurthy & Zmud, 1999). At the organizational level, the presence of such capabilities reshapes boundaries, specialization, and coordination practices, producing organizational forms suited to either hyperscaling or integrated service provision. Empirical case studies demonstrate that firms with strong digital sensing and reconfiguring capabilities are more likely to successfully introduce servitized or platform-based business models (Kohtamäki et al., 2019; Witschel et al., 2019).

Digital operating model, digital business model, and digital organization. The digital operating model is the implementation blueprint that operationalizes a firm's chosen digital business model and determines the organization's day-to-day capabilities. Digital operating model choices about processes, data pipelines, and automation influence the firm's ability to deliver value propositions reliably and at scale (Bollard et al. 2017; Broekhuizen et al. 2021). For example, the operational backbone supports efficiency-centered models while the digital services platform supports rapid innovation. Organizational design is the mediating layer that configures roles, decision rights, and performance metrics required to run the digital operating model. Theoretically, configuration and contingency perspectives explain why alignment across digital business models, digital operating models, and organizational design is necessary for value capture and for avoiding capability mismatches that erode strategic returns (Sebastian et al., 2017; Teece & Linden, 2017).

5. Discussion

Our systematic review synthesizes insights from 109 studies into an integrative framework that conceptualizes organizational design for digital transformation as an iterative system of eight interdependent design dimensions organized across three heuristic stages—*Align*, *Execute*, and *Transform*—and connected through continuous feedback and adaptation (Kretschmer & Khashabi, 2020; Warner & Wäger, 2019). During *Align*, digital leadership, digital governance, and digital culture establish strategic direction and organizational readiness by coordinating competing interests, mobilizing commitment, and encouraging experimentation and learning (AlNuaimi et al., 2022; Banks et al., 2022; Chanias et al., 2019; Hanisch et al., 2023; Westerman et al., 2019). This stage centers on balancing *control and autonomy*. During *Execute*, digital strategy, digital organization, and digital resources and capabilities translate strategic intent into coordinated action through the deployment of digital assets, organizational structures, and capabilities (Adner et al., 2019; Colbert et al., 2016; Piccoli et al., 2022; Witschel et al., 2019). Here, organizations must balance *stability and adaptability*. During *Transform*, digital operating model and digital business model institutionalize new ways of creating, delivering, and capturing value. This stage requires organizations to balance *optimization and reconfiguration*, while continuous feedback prompts them to revisit earlier design choices as technologies, competitive conditions, and regulatory environments evolve (Caputo et al., 2021; Foss & Saebi, 2017; Soluk & Kammerlander, 2021; Suleman et al., 2025; van Giffen et al., 2025; Wielgos et al., 2021).

5.1. Theoretical implications

Our paper bridges fragmented literatures on organizational design and digital transformation by synthesizing eight core dimensions into a cohesive framework. While scholars widely acknowledge organizational design as pivotal to digital transformation (Chanias et al., 2019; Hanelt et al., 2021), the literature suffers from conceptual ambiguity and isolated analyses of individual design elements. Many studies focus on singular dimensions, such as culture (Westerman et al., 2019), leadership (Frankenberger et al., 2019), or structure (Furr & Shipilov, 2019), without examining their interdependencies or mechanisms. Our review addresses this gap by integrating these dimensions into a typology that clarifies their roles and relationships. For instance, we demonstrate how digital governance mechanisms (e.g., performance metrics, transparency) interact with leadership styles (e.g., transformational vs. empowering) to shape strategic alignment (Hanisch et al., 2023; Schrage et al., 2019). This synthesis challenges the siloed approach prevalent in prior research and provides a foundation for theorizing organizational design as a dynamic system that evolves alongside digital initiatives.

Our study also advances organizational design scholarship by showing that digital transformation requires a perspective that has not yet been clearly conceptualized in either the organizational design or digital transformation literature. Organizational design scholars already emphasize that design is dynamic and requires continual adjustment in response to shifting contingencies (Joseph & Sengul, 2025). However, digital transformation introduces a qualitatively different form of dynamism because it affects multiple interdependent design dimensions at once, coupled with deep structural inertias, unfolds over extended time horizons, and reshapes the assumptions and routines that underpin organizational coordination and control (Hanelt et al., 2021; Kaganer et al., 2023; Vial, 2019). Although existing work highlights isolated elements such as agile structures (Carroll et al., 2023), data-driven routines (Balasubramanian et al., 2022), or new leadership roles (Banks et al., 2022), the field lacks a coherent account of how these elements combine to shape the transformation process. Our framework fills this gap by integrating design constructs that are typically examined separately and by identifying how digital purpose, governance, leadership, strategy, culture, capabilities, and structural renewal operate together across stages of transformation. This integrative perspective offers a clearer conceptual grounding for understanding how design choices shape transformation trajectories and provides a basis for theorizing the mechanisms through which design enables or hinders digital transformation.

A further contribution of our framework is that it disentangles dependent constructs that are often treated interchangeably in digital transformation research, particularly digital organization, digital business model, and digital operating model. Although prior work frequently collapses these concepts into a single notion of organizational change, our review shows that they represent distinct outcomes that emerge from different organizational design mechanisms. Digital business model concern how firms create, deliver, and capture value through data, connectivity, and service innovation (Foss & Saebi, 2017; Verhoef et al., 2021). Digital operating model focus on how work is executed through modular processes, cross-functional coordination, and the integration of digital tools across workflows (Canhoto et al., 2021; Wielgos et al., 2021). Digital organization refers to the structural and role-related adjustments that enable continuous adaptation, such as new boundary-spanning roles or flexible team configurations (Hanelt et al., 2021; Vial, 2019). Clarifying these distinctions helps prevent conceptual imprecision and reduces the risk of attributing transformation outcomes to the wrong mechanisms. It also opens promising research avenues on how organizations sequence these outcomes and how design tradeoffs across structures, processes, and value logics shape transformation trajectories.

Our framework advances current theorizing on digital transformation by moving beyond the fragmented treatment of individual organizational design dimensions and instead offering a holistic perspective on their interdependencies. Prior research has typically examined digital leadership, governance, strategy, capabilities, and culture in relative isolation, often emphasizing the role of a single lever such as digital strategy (Adner et al., 2019), digital culture (Duerr et al., 2018), or digital capabilities (Piccoli et al., 2022). Yet digital transformation is inherently systemic, requiring coordinated changes in how organizations align interests, execute routines, and adapt structures (Baskerville et al., 2020; Colbert et al., 2016). By integrating these dimensions into a coherent design architecture, our framework highlights how governance mechanisms shape strategic direction and leadership behaviors (Hanisch et al., 2023), how digital culture and operating

model mediate the conversion of digital resources into value (Ross et al., 2018), and how digital strategies and business model must co-evolve with organizational structures and capabilities. This systemic view clarifies that digital transformation succeeds not through isolated interventions, but through the alignment and mutual reinforcement of design elements. This insight extends existing theory and better reflects the socio-technical complexity of contemporary digital organizing (Orlikowski & Scott, 2008).

5.2. Future research agenda

A detailed overview of promising avenues for future research is presented in Table 2. Building on our integrative framework, we identify opportunities across three stages of digital transformation, *Align*, *Execute*, and *Transform*, that extend theoretical understanding of how organizational design shapes transformation outcomes.

Align. The *Align* stage invites deeper investigation into how organizations establish the cultural, strategic, and leadership foundations that prepare incumbents for digital transformation. Although research has begun to conceptualize digital culture, important questions remain about how data-driven norms, experimentation mindsets, and cross-functional collaboration practices emerge and diffuse across established structures (Canhoto et al., 2021; Sanchís-Pedregosa et al., 2025; Vial, 2019). Future work could examine how leaders articulate a coherent digital ambition and cultivate collective momentum, particularly in traditional firms where legacy identities and established routines may constrain sensemaking (AlNuaimi et al., 2022; Soluk & Kammerlander, 2021). Scholars may also explore how digital strategies evolve over time as organizations balance deliberate planning with experimentation and iterative learning (Hanelt et al., 2021; Vial, 2019). Building on research highlighting the role of executive framing and shared emotions in shaping responses to technological change (Benner, 2010; Benner & Tripsas, 2012; Vuori & Huy, 2016), future studies could investigate how strategic communications, narratives, and symbolic actions help align employees with shifting value-creation logics. Advancing this agenda will clarify how culture, leadership, and strategy interact to create early alignment and reduce friction before heavy execution activities begin.

Execute. The *Execute* stage requires research on how organizations operationalize transformation through governance mechanisms, structural redesign, and capability development. Digital governance remains under-theorized, especially regarding how firms implement algorithmic controls, accountability systems, and digital performance metrics that direct ongoing transformation (Kellogg et al., 2020; Möhlmann et al., 2021; Schweitzer & De Cremer, 2024). Scholars could analyze how governance choices interact with new organizational structures such as flexible teams, networked arrangements, and redesigned roles that support emergent digital practices (Colbert et al., 2016; Hanelt et al., 2021). The execution stage also presents opportunities to study how digital resources and capabilities, including modular data architectures, analytics capabilities, and automation, shape patterns of sensing, seizing, and reconfiguring during transformation (Piccoli et al., 2022; Yeow et al., 2018). Research integrating learning and paradox perspectives could reveal how firms manage tensions between standardization and experimentation when digital tools simultaneously enable efficiency and innovation (Garvin, 1993; Putra et al., 2024; Smith & Lewis, 2011). Such work would illuminate how governance, structure, and capabilities jointly convert strategic intent into sustained organizational change.

Transform. Transformation reflects the stage where design choices yield systemic change of structure, processes, and business model. Although digital transformation often entails structural changes in organizations, we lack integrative explanations of how structural flexibility, process modularity, and new value logics interact (Foss & Saebi, 2017; Zott et al., 2011). Applying sociotechnical and modular systems theories could explain how the digital operating model integrates human and technological subsystems for responsiveness (Baldwin & Clark, 2000; Sarker et al., 2019; Trist & Bamforth, 1951). Future research might also investigate how digital business model renewal unfolds as a dynamic capability rather than a discrete outcome (Teece, 2018). Using routine and information processing theories could reveal how organizations absorb feedback and update decision structures (Feldman & Pentland, 2003; Galbraith, 1974). Comparative and process studies could illuminate how firms institutionalize adaptive routines that link business model innovation to structural evolution, advancing understanding of transformation as an ongoing, recursive process rather than a one-off event.

Intersections among dimensions. Ample opportunities exist for studying how dimensions interact across stages. For example, the alignment of leadership and governance mechanisms may moderate the effectiveness of resource orchestration during execution (Chanias et al., 2019; Hanelt et al., 2021), with tradeoffs emerging between agility and rigidity (Li et al., 2023). Critical enablers such as performance management, flexible structures, and adaptable IT infrastructure are prone to influence the effectiveness of these interactions. Multi-level designs could trace feedback loops between vision articulation, strategic coordination, and operating routines, highlighting emergent path dependencies. Future work could use configurational or process-tracing methods to explore how different combinations of design dimensions produce equifinal transformation pathways (Misangyi et al., 2017). Studying these intersections would help scholars move beyond linear stage models toward a richer understanding of how interdependencies generate adaptive capacity.

Extending levels of analysis. While our review focused on the organizational level, significant opportunities lie in exploring digital transformation across individual and industry levels. At the micro level, scholars could examine how employees and teams interpret digital purpose and enact leadership cues through sensemaking and identity work (DeRue & Ashford, 2010; Weick, 1995). Understanding how individuals respond cognitively and emotionally to new technologies and hybrid work structures could reveal the human dynamics underpinning organizational design choices for digital transformation (Leavitt et al., 2025; Turel & Kalhan, 2023). At the macro level, research could explore how interfirm collaborations, ecosystems, and industry networks shape diffusion and imitation of organizational design practices (Adner, 2017; Lanzolla et al., 2020). Examining cross-level feedback between organizational and industry dynamics would illuminate how digital transformation creates both convergence in best practices and divergence in strategic distinctiveness. Such research would contribute to a multi-level theory of digital transformation as a co-evolutionary process embedded in broader institutional and competitive contexts.

Accounting for organizational contexts. Future research should prioritize examining the organizational contexts in which digital transformation unfolds and how these contexts shape design choices. While existing studies often treat digital transformation as a universal process, its success is likely contingent on specific organizational settings, such as family businesses, industry dynamics, or regional institutional environments (Suleman et al., 2025). For instance, family firms may face unique challenges in adopting agile structures due to entrenched governance traditions (Soluk & Kammerlander, 2021), while industries with high regulatory stringency, such as healthcare or finance, may require distinct leadership and governance configurations to balance innovation with compliance (Kane et al., 2016). Similarly, incumbents in traditional sectors may need to adjust their operating model differently than digital-native firms to overcome path dependencies (Warner & Wäger, 2019). Scholars are encouraged to explore how contextual factors such as ownership structure, industry competitiveness, and technological maturity influence the relationship between organizational design and transformation outcomes. Such inquiries would advance a more nuanced, contingency-based understanding of digital transformation, moving beyond one-size-fits-all prescriptions.

Understanding the downsides. Despite the emphasis on the benefits

Table 2
Research Agenda: Organizational Design for Digital Transformation.

Organizational Design Construct	Construct Dimensions	Exemplary Reference	Open Research Questions	Theoretical Lens(es)	Empirical Contexts and Research Design Opportunities
Digital Culture	• Encourages data-driven decision making, transparency, and continuous learning • Supports collaboration across functions, reducing friction in implementation • Reinforces norms that tolerate risk, experimentation, and rapid iteration	Sanchís-Pedregosa et al., 2025	1. How do cultural values of experimentation and openness enable or constrain iterative learning during transformation? 2. Why do cultural transformation efforts succeed in some business units but not others within the same firm? 3. How does alignment between national, industry, and organizational culture shape digital readiness?	Organizational culture theories, Psychological safety and learning theories, Multilevel culture frameworks, Social identity theory	**Context:** Agile teams within legacy firms experimenting with iterative innovation programs. **Design:** Multi-level quantitative studies combining surveys, behavioral data (e.g., retrospectives), and qualitative process data.
Digital Leadership	• Articulates a compelling digital ambition and mobilizes collective commitment • Encourages digital experimentation, learning, and cross-boundary collaboration • Builds transformation legitimacy by integrating human and technological perspectives	Banks et al., 2022	1. How do leadership behaviors such as vision communication and resource orchestration mobilize collective commitment to digital change? 2. Why does the sequencing of leadership priorities (symbolic vs. structural) affect transformation outcomes? 3. How do mid-level leaders interpret and translate top management's digital ambitions into operational routines?	Upper echelons, Strategic leadership theory, Complexity leadership theory, Role theory, Strategic alignment theory	**Context:** Agile transformation programs or M&A integrations where leadership must bridge legacy and digital units. **Design:** Multi-source surveys, social network analysis, and longitudinal interviews to capture evolving leadership behaviors.
Digital Governance	• Sets decision rights and rules that coordinate actors across units and digital ecosystems • Uses algorithmic and design-based mechanisms to manage complexity and reduce friction • Balances control and autonomy to ensure strategic coherence in distributed digital work	Hanisch et al., 2023	1. How do governance mechanisms balance control and flexibility across the stages of transformation? 2. Why do centralized roles (e.g., CDOs) facilitate alignment in some firms but constrain agility in others? 3. How do formal and informal governance structures co-evolve as digital initiatives mature?	Agency theory, Institutional logics, Transaction cost economics	**Context:** Inter-organizational digital consortia or multi-unit incumbents experimenting with data-sharing governance. **Design:** Cross-case comparison of governance architectures using process tracing and contract analysis.
Digital Organization	• Reconfigures structures, roles, and boundaries to support new virtual collaboration • Establishes flexible, team-based, and networked arrangements enabling adaptive responses • Adjusts routines, processes, and responsibilities to integrate emergent digital practices	Colbert et al., 2016	1. How do structural redesigns (e.g., agile teams, networked hierarchies) enable responsiveness and innovation? 2. Why do some organizations achieve structural ambidexterity in digital initiatives while others struggle to achieve it? 3. How do coordination mechanisms (cross-functional teams, digital platforms) affect decision speed and quality?	Organizational design theory, Structural ambidexterity, Contingency theory, Sociomateriality	**Context:** Multi-business incumbents reorganizing around agile hubs or digital venture units. **Design:** Comparative organizational ethnographies or longitudinal social network mapping of evolving coordination ties.
Digital Strategy	• Prioritizes where and how digital technologies create competitive advantage • Directs investments toward digital opportunities with highest strategic leverage • Guides choices about digital market scope, digital ecosystems, and innovation pathways	Adner et al., 2019	1. How do strategic renewal processes integrate digital technologies with legacy capabilities to sustain competitive advantage? 2. Why do some firms pursue ambidextrous strategies balancing exploration and exploitation more effectively than others? 3. How do digital strategies realign organizational boundaries and ecosystem positions?	Strategic renewal theory, Resource orchestration theory, Real options theory, Attention-based view of the firm	**Context:** Firms diversifying through digital joint ventures or platform participation. **Design:** Longitudinal analysis of strategic reorientation using patent, alliance, and investment data triangulated with executive interviews.
Digital Resources and Capabilities	• Provide scalable, modular, and reusable digital assets (data, APIs, algorithms) • Enable sensing, seizing, and reconfiguring actions through analytics and automation	Piccoli et al., 2022	1. How do data, analytics, and IT capabilities integrate with organizational routines to enhance adaptive learning? 2. Why do some incumbents convert digital resource investments into dynamic capabilities while others fail?	Dynamic capabilities, Resource-based view, Knowledge-based view	**Context:** Firms implementing enterprise analytics platforms or cloud migration projects. **Design:** Mixed-method field studies combining IT logs with interviews on capability building and coordination.

(*continued on next page*)

Table 2 (*continued*)

Organizational Design Construct	Construct Dimensions	Exemplary Reference	Open Research Questions	Theoretical Lens(es)	Empirical Contexts and Research Design Opportunities
	• Allow orchestrating and combining internal and external digital resources		3. How do organizations orchestrate critical resources such as cybersecurity frameworks, advanced data analytics capabilities, and legal compliance mechanisms (e.g., GDPR) to ensure resilience and adaptability across transformation stages?		
Digital Business Model	• Creates new value propositions through digital products, services, and ecosystems • Delivers value through digital channels, platforms, and customer interactions • Captures value through subscriptions, data monetization, and servitization	Caputo et al., 2021	1. How does internal organizational redesign support shifts from product- to platform- or service-oriented business models? 2. Why do some incumbents successfully capture value from digital offerings while others lose profitability? 3. How do internal and external governance mechanisms jointly shape business model innovation?	Business model innovation, Value appropriation theory, Transaction cost economics	**Context:** Incumbents forming digital service ventures or data-sharing alliances. **Design:** Comparative case or panel studies analyzing revenue models, IP arrangements, and alliance contracts.
Digital Operating Model	• Coordinates processes, roles, and workflows for fast, iterative execution • Integrates cross-functional digital teams with platform, data, and technology foundations • Converts digital resources into operationalized, repeatable value-creation routines	Suleman et al., 2025	1. How do process modularization and automation reshape interdepartmental coordination and decision-making speed? 2. Why does the integration of digital processes across legacy systems succeed in some firms but not others? 3. How do operating model redesigns enable the transition from project-based to continuous transformation?	Process theory, Sociotechnical systems, Organizational routine theory, Modular systems theory	**Context:** Shared-service centers, ERP or cloud platform migrations, or large-scale process digitization projects. **Design:** Longitudinal process analysis combining workflow data, digital trace data, and qualitative insights.
Continuous Feedback and Adaptation	• Monitors digital transformation outcomes and emerging environmental changes • Integrates digital learning across organizational levels to challenge existing assumptions • Reconfigures organizational design choices through iterative experimentation and adjustment	van Giffen et al., 2025	1. How do organizations learn when and which organizational design dimensions require reconfiguration during digital transformation? 2. Why do some firms continuously adapt their organizational design while others become locked into obsolete structures and routines? 3. How do feedback from customers, employees, digital technologies, and ecosystem partners jointly shape the ongoing evolution of organizational design?	Organizational learning theory; Dynamic capabilities; Organizational adaptation; Cybernetic control theory; Organizational routines	**Context:** Incumbents undertaking multi-year digital transformations characterized by repeated redesign of structures, governance, and business models. **Design:** Longitudinal process studies combining digital trace data, internal performance dashboards, archival documents, and repeated interviews to examine how feedback triggers organizational redesign over time.

of digital transformation, its downsides remain under-investigated, particularly in relation to organizational design. While digitalization enhances innovation and operational efficiency, it also introduces significant risks that challenge organizational resilience, including accelerated business model obsolescence, with failure rates of 66% to 84% in transformation initiatives (Correani et al., 2020). The rapid pace of technological change not only shortens the lifespan of digital investments (Trischler & Li-Ying, 2022) but also exacerbates market concentration risks, as incumbents leverage proprietary data to dominate industries (Kretschmer & Khashabi, 2020; Lanzolla et al., 2020). From an organizational design perspective, digital transformation amplifies cybersecurity vulnerabilities, as interconnected systems and algorithmic decision-making create new exposure points for malicious attacks (Hanisch et al., 2023; Teece & Linden, 2017). Additionally, the integration of digital tools—while intended to streamline operations—can inadvertently undermine employee autonomy and well-being through excessive surveillance and rigid algorithmic control (Cameron, 2024; Möhlmann et al., 2021). Future research should explore how organizational design choices, such as governance structures, resource allocation, and cultural frameworks, can mitigate these risks while preserving adaptability in digital transformation.

Reimagining organizational design for an AI-native future. Our framework is grounded in a period in which digital technologies primarily augmented human decision-making in established organizational forms (Raisch & Krakowski, 2021). The rise of agentic AI, systems capable of autonomously planning, executing, and coordinating tasks with limited human oversight, may fundamentally challenge this premise. Firms that delegate coordination and decision rights to AI agents may require different governance mechanisms, accountability structures, and leadership roles than those identified in our framework, potentially challenging its human-centric assumptions. Emerging discussions around "agentic firms" point to organizations with minimal hierarchy, algorithmic task allocation, and increasingly blurred boundaries between strategy and execution (Kellogg et al., 2020; Möhlmann et al., 2021), but these implications remain underdeveloped. Future research should examine how organizational design must evolve when AI agents perform core organizational functions and whether theories built around human cognition and social interaction remain adequate. More fundamentally, such work should ask whether digital transformation, as currently conceptualized, adequately anticipates organizations designed around autonomous, non-human agents from the outset.

5.3. Practical implications

Our framework provides practitioners with an actionable roadmap

for navigating digital transformation by linking organizational design dimensions to specific interventions at each stage of the journey. In the *Align* stage, leaders should focus on establishing a shared digital vision and creating governance structures that encourage collaboration and experimentation. This includes articulating a compelling digital ambition, as Amazon did with its "Day 1" mentality, and appointing a Head of Digital Transformation to ensure accountability and coordination (Frankenberger et al., 2019; Furr & Shipilov, 2019). Cultivating psychological safety and open communication encourages the necessary risk-taking and collective commitment (Schrage et al., 2019); Nokia's decline illustrates how fear can suppress critical feedback and contribute to strategic failure (Vuori & Huy, 2022). Developing flexible governance guidelines that balance autonomy with strategic coherence allows teams to experiment while staying aligned with broader organizational goals (Westerman et al., 2019). These steps create a strong foundation for transformation by ensuring stakeholders are aligned and prepared for the changes ahead.

During the *Execute* stage, organizations must operationalize their digital strategy by changing structures, processes, and resources. Investing in agile IT infrastructure supports rapid prototyping and iterative development (Frankenberger et al., 2019). Directing investments toward digital capabilities such as data analytics and AI creates competitive advantages, as seen with Netflix's data-driven decision-making (Koning et al., 2022; Vial, 2019). Establishing team-based, networked arrangements enables adaptive responses to emerging opportunities, as seen in Spotify's use of agile squads to accelerate innovation (Hess et al., 2016). Adjusting performance metrics to reflect the unique demands of digital initiatives ensures KPIs align with development stages, from ideation to commercialization (Frankenberger et al., 2019). Finally, in the *Transform* stage, the focus shifts to scaling successful digital practices and institutionalizing new ways of operating. This includes deploying digital assets to create new value propositions, embedding continuous feedback loops for real-time adjustments, and designing a flexible operating model that evolve with technological and market changes, as demonstrated by Adobe's transition to a cloud-based subscription service and Tesla's over-the-air service upgrades (Suleman et al., 2025; Westerman, 2022).

5.4. Limitations

Our study has limitations that open avenues for future research. First, our focus on incumbents in traditional industries (e.g., manufacturing, financial services) may limit the generalizability of our findings to platform-based or born-digital organizations, which often exhibit distinct design configurations (e.g., holacratic structures, radical decentralization). Second, our reliance on published literature may reflect the field's positivity bias toward successful digital transformations, as failed initiatives and the strategic risks and downsides of transformation are documented less frequently, with notable exceptions such as General Electric (e.g., Govindarajan & Immelt, 2019), Kodak (e.g., Lucas & Goh, 2009), and Nokia (Aspara et al., 2023; Vuori & Huy, 2016). Third, while we distinguish digital transformation from digitalization, terminological overlaps in the literature (Giustiziero et al., 2023; Verhoef et al., 2021) required interpretive judgments that may influence our synthesis. Finally, our framework's emphasis on organizational-level design dimensions leaves micro-level dynamics (e.g., individual resistance, team interactions) and macro-level trends (e.g., regulatory shifts) under-theorized. Future research could address these gaps through mixed-method designs that combine large-scale surveys with case studies, particularly in underrepresented contexts such as digital transformation in public-sector or nonprofit organizations.

6. Conclusion

This paper reconceptualizes digital transformation as a dynamic, systemic process where organizational design dimensions—leadership, governance, culture, strategy, structure, capabilities, operating model, and business model—must co-evolve and balance competing tensions (control vs. autonomy, stability vs. adaptability, optimization vs. reconfiguration) to drive sustained change. By synthesizing these dimensions into a staged framework, it advances both theory and practice by revealing how interdependencies, tradeoffs, and continuous feedback shape transformation outcomes, moving beyond isolated interventions to a holistic, actionable roadmap for redesigning organizations in the digital age.

CRediT authorship contribution statement

Tristan Thome: Writing – original draft, Visualization, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Marvin Hanisch:** Writing – original draft, Visualization, Formal analysis, Writing – review & editing, Supervision, Project administration, Conceptualization. **Jana Oehmichen:** Writing – review & editing, Supervision. **Pedro de Faria:** Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Journal Coverage, Article Overview, and Supporting Evidence

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Data availability

Data will be made available on request.

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Tristan Thome earned his PhD from the department of Innovation Management and Strategy at the University of Groningen. His research focuses on executive compensation design, organizational studies, and strategic change, with a particular interest in how firms organize digital transformation. In addition to his academic work, he manages strategic finance-related projects.

Marvin Hanisch is a Professor of Management at the University of St. Gallen and a part-time Associate Professor in the department of Innovation Management and Strategy at the University of Groningen. His research focuses on governance mechanisms in strategic alliances, open-source software communities, digital platforms, and blockchain networks. His work has been published in leading management journals such as the Journal of Management, the Journal of Management Studies, the Journal of Operations Management, Organization Science, and the Strategic Management Journal, as well as in practice-oriented journals such as the Harvard Business Review and the California Management Review. Marvin Hanisch is co-affiliated with the University of Passau and is a visiting lecturer at Maynooth University.

Jana Oehmichen is a Full Professor of Organization, Human Resources, and Management Studies at the University of Mainz. Her research is focused on international corporate governance, strategic sustainability and purpose, and digital strategy and leadership. Her work has been published in journals such as Strategic Management Journal, Journal of Management, Leadership Quarterly, Global Strategy Journal, Journal of Management Studies, Human Resource Management, and Journal of Business Ethics. She is currently an editor of Corporate Governance: An International Review and Schmalenbach Journal of Business Research and review board member of Leadership Quarterly, Management Review Quarterly, Journal of Business Research, Management International Review, and Journal of Management Studies. Furthermore, she is a board member of the International Corporate Governance Society.

Pedro de Faria is a Professor of Innovation Management and chair of the department of Innovation Management and Strategy of the University of Groningen (the Netherlands). Pedro's research focuses on understanding how firms define cooperation and knowledge protection strategies and on how human capital plays a role in internationalization strategies. His research has appeared in journals such as the Journal of Management, Journal of International Business Studies, and Research Policy. He is currently an Associate Editor of the journal Industry and Innovation.