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Abstract

Organizations continue to invest heavily in digital technologies to transform, yet many struggle to scale and sustain impact beyond isolated initiatives. We argue that the challenge cannot be explained by technology adoption alone. Instead, digital transformation depends on how organizations configure and align the capabilities required to implement and embed digital initiatives. Building on a qualitative meta-synthesis of 102 case studies, the analysis identifies eight recurring organizational capabilities and shows that their configuration varies systematically across transformation contexts. In digital transformation, three capabilities are particularly central: adaptive learning, digital infrastructure and data integration, and organizational reconfiguration. Transformation unfolds through the interaction of these capabilities, enabling experimentation, supporting scaling, and anchoring change within organizational structures. For managers, the implications are clear: sustainable digital transformation requires building interconnected capability systems rather than focusing on individual initiatives. Organizations need to align experimentation with integration and ensure that digital efforts are structurally embedded to generate lasting impact.

Keywords: digital transformation, organizational capabilities,
organizational transformation, meta-analysis

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Why digital transformation still falls short

Organizations are investing heavily in digital technologies (Bharadwaj et al., 2013; Hanelt et al., 2021). From AI-enabled decision systems to integrated data platforms, digital transformation has become a strategic priority across industries. Yet, despite these investments, many transformation initiatives fail to deliver sustained impact. Projects stall after initial pilots, digital solutions remain isolated, and organizations struggle to embed new ways of working into their core operations.

The challenge is not a lack of technological solutions. Most organizations today have access to advanced digital tools and increasingly sophisticated data infrastructures. The real difficulty lies elsewhere: in translating these technologies into stable, organization-wide transformation. Digital initiatives often remain fragmented, disconnected from existing structures, or insufficiently anchored in everyday practices (Hanelt et al., 2021).

This creates a fundamental tension. On the one hand, organizations are expected to innovate rapidly, experiment with new technologies, and respond to evolving market conditions. On the other hand, they must ensure that these initiatives are implemented in a way that is consistent, reliable, and aligned with broader organizational objectives. When this balance is not achieved, transformation efforts risk producing inconsistencies in how digital initiatives are implemented and embedded across the organization.

Why, then, do so many digital transformation efforts fail to scale and sustain impact? The answer, we argue, lies not in the technologies themselves, but in how organizations build and combine the capabilities required to implement them.

Beyond technology adoption: the role of capability configurations

This paper builds on a qualitative meta-synthesis (Hoon, 2013) of 102 case studies examining organizational transformation across different contexts, including digital, sustainability, crisis, and institutional settings. The analysis identifies eight recurring organizational capabilities that enable transformation processes. However, the central insight is not the existence of these capabilities, but how they are configured and combined.

Transformation does not depend on isolated capabilities. Instead, it emerges from the interaction of multiple capabilities that reinforce each other (Teece, 2007; Teece et al., 1997; Winter, 2003; Zollo & Winter, 2002). Organizations rarely struggle with digital transformation because they lack a specific capability. Rather, challenges arise when capabilities are developed unevenly, insufficiently connected, or not embedded in organizational structures and processes.

In the context of digital transformation, three capabilities stand out:

First, **adaptive learning capability** enables organizations to experiment with new digital solutions, test alternative approaches, and iteratively adjust their practices based on feedback. Rather than following linear implementation paths, organizations rely on structured experimentation, pilot projects, and continuous refinement.

Second, **digital infrastructure and data integration capability** provides the foundation that allows these initiatives to extend beyond isolated applications. It supports the integration of systems, data, and processes across organizational units and enables broader coordination.

Third, **organizational reconfiguration capability** anchors transformation within the organization. It involves the deliberate redesign of structures, processes, and resource allocations to support new ways of operating and to embed digital initiatives in formal organizational arrangements.

The key point is that these capabilities do not operate independently. Digital transformation unfolds through their interaction, linking experimentation, integration, and structural embedding. This configurational view is what distinguishes our perspective from much of the existing work on digital transformation and dynamic capabilities. Prior models have done much to identify the capabilities that matter, from sensing and seizing opportunities to reconfiguring resources (Teece, 2007; Teece et al., 1997). Yet for managers, knowing which capabilities are relevant has rarely been the binding constraint. What our analysis adds is a shift in emphasis from possessing capabilities to orchestrating them: it specifies which capabilities must be coupled and shows that the decisive managerial task is to manage the relationships between them rather than to develop each in isolation. This reframes digital transformation as a problem of capability alignment rather than capability acquisition and gives leaders a concrete lens for diagnosing why well-resourced initiatives still fail to scale.

Digital transformation, therefore, cannot be explained by technology adoption alone. It depends on how organizations align and integrate these capabilities over time.

Where digital transformation becomes uneven: imbalances in capability development

If digital transformation depends on the interaction of adaptive learning, digital infrastructure and data integration, as well as organizational reconfiguration, the evidence suggests that organizations rarely develop these capabilities in a fully aligned way. Instead, the case studies indicate that transformation often unfolds through uneven capability development, where certain capabilities are more strongly emphasized than others.

Rather than lacking capabilities altogether, organizations tend to build them with different levels of intensity and at different points in time. This creates imbalances that shape how transformation progresses in practice. Thereby, three recurring tendencies can be observed:

1. Strong emphasis on adaptive learning

Across many digital transformation cases, adaptive learning plays a prominent role. Organizations engage in experimentation, pilot projects, and iterative refinement of digital solutions. These practices enable the exploration of new technologies and support continuous adjustment.

However, adaptive learning alone does not lead to organization-wide transformation. Without corresponding development of digital infrastructure and organizational reconfiguration, experimentation remains limited in scope and does not extend beyond local contexts.

This suggests that while adaptive learning is critical for initiating transformation, its impact depends on how effectively it is connected to mechanisms that support scaling and structural embedding.

2. Development of digital infrastructure

The case studies further highlight the importance of digital infrastructure and data integration as a central enabling capability. Organizations invest in integrating systems, standardizing data, and building digital architectures that support coordination across units.

These infrastructural elements create the conditions for scaling digital initiatives beyond isolated applications. But infrastructure alone does not transform organizational practices. Its impact depends on whether it is accompanied by changes in processes, structures, and resource allocation.

Digital infrastructure therefore functions as an enabling backbone but requires complementary capabilities to translate technical integration into organizational transformation.

3. Organizational reconfiguration as a structuring mechanism

Across all transformation contexts, organizational reconfiguration emerges as a consistently prominent capability. It involves the redesign of structures, processes, and resource configurations to support new ways of operating.

In digital transformation, this capability plays a key role in embedding digital initiatives within the organization. It ensures that new practices are not temporary but become part of formal structures and routines.

At the same time, reconfiguration does not operate in isolation. Its effectiveness depends on the insights generated through adaptive learning and the technical foundation provided by digital infrastructure.

The critical insight: transformation depends on capability alignment

Taken together, the findings indicate that digital transformation is shaped not by individual capabilities, but by their alignment.

Adaptive learning enables experimentation and variation. Digital infrastructure supports integration and scaling. Organizational reconfiguration anchors these changes within structures and processes. Transformation becomes sustainable when these capabilities are developed in combination and reinforce each other.

When capability development remains uneven, transformation tends to be partial. Some organizations excel in experimentation but struggle to scale. Others build strong infrastructures without fully embedding them in organizational practices. These variations reflect differences in capability emphasis rather than the absence of capabilities.

These configurations also have a temporal dimension. Across the cases, transformation typically begins with adaptive learning: experimentation and pilot projects are comparatively easy to initiate and produce early, visible momentum. Digital infrastructure and data integration tend to follow, as organizations attempt to connect and scale what they have learned. Organizational reconfiguration generally comes last and proves the most

difficult to achieve, because it touches established structures, responsibilities, and resource allocations rather than discrete projects. This ordering helps explain a common pattern: many organizations accumulate experiments and even build infrastructure, yet stall at the point where lasting change would require redesigning the organization itself.

Capability configurations in practice

These patterns are visible in the case evidence. A study of three grocery retailers transforming their omnichannel logistics illustrates both alignment and imbalance (Eriksson et al., 2022). The most advanced retailer developed all three capabilities together: it experimented with new fulfillment models and learned intensively from an automation partner (adaptive learning), invested in an automated omnichannel distribution center and integrated its IT systems across stores and online (digital infrastructure and data integration), and reorganized around a cross-functional omnichannel program that made logistics a strategic unit (organizational reconfiguration). Because the three advanced in parallel, experimentation could be scaled and structurally embedded rather than left isolated. A second retailer in the same study showed the opposite configuration. It experimented actively in its online channel and recognized that automation would be necessary, yet it lacked a shared omnichannel strategy and a clear structural role for logistics, and it had not committed to the supporting infrastructure investment. With learning in place but integration and reconfiguration underdeveloped, its transformation stalled at the pilot stage. The decisive difference was not whether the firms possessed capabilities, but whether they developed them in alignment.

Managerial decisions: what leaders must get right

If digital transformation depends on aligning adaptive learning, digital infrastructure, and organizational reconfiguration, the key challenge for leaders is not simply what to invest in, but how to prioritize and combine these elements. The following decisions are critical in determining whether transformation efforts scale and sustain impact – or remain fragmented.

Decision 1: invest in technology or in organizational capability?

A common starting point for digital transformation is investment in new technologies like platforms, data systems, or AI applications. While these investments are necessary, they are often insufficient on their own.

The trade-off lies between short-term technological deployment and long-term capability development. Focusing primarily on technology can create visible progress early on, but without parallel investments in learning processes and structural adaptation, these solutions remain underutilized.

The risk is a growing gap between technological potential and organizational reality. Systems are implemented but not effectively used or integrated into everyday operations.

Leaders should therefore treat technology investments as part of a broader capability-building effort. Digital tools only generate value when they are combined with mechanisms that enable experimentation, learning, and structural embedding.

Decision 2: scale quickly or learn first?

Organizations under pressure to deliver results often prioritize rapid scaling of digital solutions. Once a pilot shows promise, the instinct is to roll it out as quickly as possible across the organization.

However, scaling too early introduces a different risk: solutions may not yet be sufficiently understood, adapted, or tested across contexts. What works in one unit may fail in another due to differences in processes, data quality, or user practices.

The trade-off here is between speed of implementation and depth of learning. Overemphasizing speed can lead to premature scaling and costly rework. Overemphasizing learning, on the other hand, can slow down transformation and create a proliferation of isolated experiments.

Effective transformation requires a deliberate coupling of both. Organizations need structured experimentation phases, followed by scaling mechanisms that are supported by integrated data and systems. Learning and scaling must not be sequential, they must co-evolve.

Decision 3: add digital initiatives or redesign the organization?

Many firms approach digital transformation by adding new initiatives on top of existing structures like digital labs, innovation units, or pilot teams. While this can accelerate experimentation, it often leaves the core organization unchanged.

The trade-off is between preserving existing structures and undertaking deeper organizational reconfiguration. Maintaining the status quo reduces disruption in the short term but limits the long-term impact of digital initiatives. More substantial structural changes, by contrast, are complex and resource-intensive, but necessary for embedding transformation.

The risk of avoiding reconfiguration is that digital initiatives remain peripheral. They generate insights and prototypes but fail to reshape core processes and decision-making patterns.

Leaders should therefore view structural adjustment not as a secondary step, but as a central component of transformation. Digital initiatives must eventually be anchored in formal structures, processes, and resource allocations to achieve lasting impact.

Decision 4: optimize existing processes or enable continuous adaptation?

Digital technologies offer significant opportunities for process optimization through automation and data-driven decision-making. Many organizations focus on improving efficiency within existing workflows.

However, transformation often requires more than optimization. It requires the ability to continuously adapt processes as technologies, markets, and organizational priorities evolve.

The trade-off lies between stability and efficiency versus flexibility and adaptability. Over-optimizing existing processes can lock organizations into specific ways of operating, making future adjustments more difficult. Conversely, prioritizing adaptability may initially reduce efficiency but increases long-term responsiveness.

The risk is that organizations become highly efficient in outdated processes. Without adaptive learning mechanisms, they struggle to revise or replace these processes when conditions change.

Leaders should therefore ensure that process improvements are accompanied by mechanisms for continuous evaluation and adjustment. Transformation is not a one-time redesign, but an ongoing process of refinement.

Building transformation capabilities that last

Digital transformation will remain a central priority for organizations in the coming years. Yet the challenge will shift from adopting new technologies to sustaining transformation over time. The evidence of our meta-synthesis suggests that long-term success will not depend on isolated initiatives, but on how organizations build and align their transformation capabilities.

The following principles summarize what leaders should prioritize.

1. Build capability systems, not isolated initiatives

Transformation does not emerge from individual projects or standalone capabilities. It requires the deliberate alignment of adaptive learning, digital infrastructure, and organizational reconfiguration.

Organizations should move away from fragmented initiatives and focus on building interconnected capability systems. This means ensuring that experimentation, integration, and structural adjustment are developed in parallel and reinforce each other.

2. Anchor transformation in structures and processes

Digital transformation cannot remain at the level of pilots or innovation units. To generate lasting impact, it must be embedded in formal organizational structures, processes, and resource allocations.

This requires deliberate reconfiguration: redefining responsibilities, adjusting processes, and aligning resources with new priorities. Without this anchoring, transformation efforts risk remaining temporary and disconnected from core operations.

3. Combine experimentation with scalable integration

Experimentation is essential for exploring new digital opportunities. However, its value depends on whether successful initiatives can be scaled across the organization.

Leaders should ensure that experimentation is systematically linked to integration mechanisms. Digital infrastructure and data integration capabilities must be developed in a way that allows insights from pilots to be transferred, adapted, and implemented across units.

4. Treat data and infrastructure as organizational foundations

Digital infrastructure and data integration are not merely technical concerns. They form the backbone that enables coordination, transparency, and consistency across the organization.

Investments in data and systems should therefore be guided by their ability to support organization-wide processes and decision-making, rather than by local optimization or short-term use cases.

5. Institutionalize continuous adaptation

Transformation is not a one-time effort. It requires ongoing adjustment as technologies evolve and organizational conditions change.

Organizations should embed mechanisms for continuous evaluation, learning, and refinement into their routines. Adaptive learning must become a recurring organizational practice, not an occasional activity.

Conclusion

Digital transformation is often framed as a technological challenge. However, our findings suggest a different perspective. Transformation success depends on how organizations configure and align their capabilities over time.

Organizations that focus solely on adopting new technologies risk creating fragmented and short-lived change. In contrast, those that build integrated capability systems by combining learning, infrastructure, and structural reconfiguration, are better positioned to sustain transformation in complex and evolving environments.

This perspective is becoming more rather than less relevant. The current wave of artificial intelligence makes the point especially clear: organizations are again investing heavily in a powerful technology, and again the gap between technological potential and realized value is widening. Generative AI, data-driven decision-making, and digital business model innovation all depend less on access to the technology itself, which is increasingly commoditized, than on the organizational capabilities needed to embed it, namely the ability to experiment responsibly, to integrate data and systems across the enterprise, and to reconfigure structures and decision rights around new ways of working.

Ultimately, then, digital transformation is less a technological challenge than a challenge of organizational design. The next phase will not be defined by the technologies organizations adopt, but by how deliberately they design themselves around them, aligning learning, infrastructure, and structure into capability systems that turn technological potential into lasting change. The decisive question for leaders is therefore not what to adopt, but how to organize.

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