

Digital transformation: strategy comes first to lay the groundwork

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Digitalization is currently one of the most fundamental strategic challenges for both private and public organizations. Emerging technologies such as artificial intelligence (AI), machine learning, blockchain, smart technologies in materials and manufacturing, the Internet-of-Things (IoT) and cloud computing are changing the way value is created and captured, how to organize and structure internally in organizations, as well as the interaction with external stakeholders. As a result, business leaders are facing a dual challenge of digitalization, which includes both internal and external factors. Leadership in the digital era necessitates a continuous focus on the strategic direction of the organization, the environment in which the strategy is unfolding and the process of formulating, implementing and executing decisions.

Managing digitalization requires new competencies within both strategic and technology management, thereby presenting new challenges for leadership. Beyond the requirement for new skills, we argue that the pursuit of digitalization also impacts activities and actions undertaken in strategic work. To explore this further, we conducted a survey of strategy work in 1,164 Danish organizations, spanning both the public and private sectors. Based on the findings from the survey, we propose a model of strategic leadership actions that can be used to support organizations that are undergoing change as a result of digital transformation.

The model comprises five leadership actions that illustrate what leaders should consider when incorporating digital development into their strategic work. By studying the prerequisites for leading digital transformation, we show how the process of digitalization can be handled as a part of strategy work. Furthermore, we show the leadership challenges that may emerge during the process.

In the following section, we discuss the potentials and challenges of considering digitalization as a focal and inherent part of strategic change and the effects of strategy work. Afterwards, we elaborate on the survey findings, which serve as the foundation on which we present a model of leadership actions that can inspire and offer guidance to organizations engaged in digital transformation initiatives. In closing, we elaborate on the managerial implications and ways forward.

Digitalization as strategic change

Advancements in digital technologies are changing the rules for strategy work in several respects. Digital business strategy encompasses the changes companies undertake to create new or reconfigure existing value propositions and thereby gain a competitive advantage. This reflects that digital transformation concerns strategy rather than just

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technology, for which reason leaders must manage the interlink between technological change and the development of new business models as a central part of their strategy work (Warner and Wäger, 2019). Consequently, advancements in digital technologies bring out new challenges for strategy work, which compels organizations to compete in new ways using e.g. ecosystem-based business models and increased co-creation with both collaborators and competitors.

The need for changes often has such pervasive and all-encompassing effects that the traditional approaches are no longer adequate. Therefore, it is necessary to address the context of new change initiatives. All of these challenges must be part of the organization's strategy work to effectively manage both internal and external transformations. So, conversely, strategic skills are essential when leading digital transformation.

In the following, we identify the constitutive elements of a successful digital transformation by exploring what characterizes the strategy work of companies that take digitalization into account. In doing so, we identify how digital transformation instigates and requires changes in strategy work throughout an organization.

By studying the new prerequisites for leading digital transformation, we exemplify how a digitalization process can be handled as a part of strategy work and how it creates different strategic challenges for leadership.

Methodology

Between January 2021 and February 2022, we conducted a survey of strategy work in Danish organizations. The questionnaire was distributed to all registered organizations, including private, public and third sector, across Denmark.

To encompass all categories of internal actors who can be part of or influence the strategy work of organizations, our respondents include top managers, middle managers and employees. The following Table 1 shows the distribution of respondents across these organizational levels.

The respondents were presented with 47 statements and asked to indicate the extent to which they agreed or disagreed with each statement, using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The 47 statements encompassed a wide range of aspects pertaining to strategy work, spanning nine themes: execution, management and leadership, organizational culture, process, market, innovation, business models, digitalization and sustainability. As all respondents answered based on their own personal experiences, the data reflect the individual perceptions of each respondent.

The findings presented in this paper are based on an outcome variable question, in which respondents indicated whether their "organization strategy takes digital development into account." To identify the relevant factors affecting the outcome variable, a Cronbach's alpha test was conducted. Additionally, a chi-square test was completed to identify a correlation. Given the nature of the data, we cannot identify direct causation. However, we did identify a positive correlation between the outcome variable and the five factors outlined below. Consequently, our findings are limited to the relationship between these factors and

Table 1 Distribution of respondents

<i>Respondents</i>	<i>Top management</i>	<i>Middle management</i>	<i>Employees</i>	<i>All</i>
Distribution	44.5% (n: 1,002)	26.7% (n: 601)	28.8% (n: 648)	100% (n: 2,251)

Source: Authors own creation

the outcome variable, digitalization. In the following, we elaborate on the five factors, each of which has a positive and significant correlation with the digitalization outcome variable.

The exploration of the quantitative survey data is inspired by the study conducted by [Bharadwaj et al. \(2013\)](#). This study argues that implementing a digital business strategy is inherently a leadership process that requires fundamental changes across four themes: the scope, the scale, the speed of digital business strategy and the sources of business value creation captured in the digital business strategy. Adding to these four themes, we present a leadership model that shows the managerial prerequisites for leading digital transformation through strategy work.

Results

The findings show that organizations which are successful in incorporating digitalization into their strategic development, in general, prioritize five actions, as illustrated in [Figure 1](#): discuss and communicate the vision and strategy; align resources and activities; ensure a continuous focus on operational improvements and efficiency; create an orientation toward customer or user needs and expectations; and develop the competencies of top managers, middle managers and employees.

In the following section, the five strategic actions will be elaborated, with a special emphasis on the practical implications for leadership.

Discuss and communicate the vision and strategy

Lack of effective communication is one of the biggest barriers to implementation and is, therefore, also one of the key success factors in implementing a digital strategy.

To ensure that everyone in the organization is familiar with the vision and strategy, a communication plan must be developed that aligns the overarching ambitions of the organization with digitalization efforts and the projects outlined as a part of the digital strategy. Such efforts contribute to a better understanding through increased employee

Figure 1 Five strategic actions for digital transformation



motivation, clear actions and the creation of consensus (Rapert *et al.*, 2002). Narratives and intentional use of discourse can support the communication of the vision. These can be used as effective tools to create an understanding of the competitive advantage brought about by digitalization in the context of the strategy, create a compelling narrative and promote greater participation and engagement with the strategy.

Our findings show that organizations actively integrating digitalization into their strategy work tend to engage more extensively in communication. This engagement is evident when organizations involve employees in strategy development and are able to transform it into action plans at all levels of the organization. Furthermore, the findings show that organizations where employees at all levels know the strategy are more inclined to have digitalization as a part of their work.

In addition, inter-managerial communication plays a central role in strategy work, particularly in navigating ambiguous dimensions that are not clearly defined. Such ambiguities can emerge when a strategy does not comprehensively cover the transition from a development to an implementation phase or when it cascades from top-level executives to lower-level managers. Addressing these ambiguities involves in-depth discussions and evaluations to minimize uncertainties among the managers. When inviting all members of the organization to be a part of the strategy work, discussions can lead to conflict. However, such potential conflicts should be viewed as stepping stones toward a better understanding of the situation. Constructive discussions can elucidate differing perceptions and perspectives among managers and employees and provide a platform for critically assessing information. This, in turn, can support the alignment of future decisions. Fostering discussions on how digital transformation is a part of strategy work can lead to consensus and promote further commitment among managers.

Align resources and activities with the strategy

Digital transformation often requires a substantial allocation of resources. Ensuring the allocation of sufficient resources requires leadership attention as a central part of strategic decision-making.

Digital transformation often directly affects the strategic content of the organization, as it may change the value proposition or value creation process. As a consequence, managers must place their focus on aligning the internal context by leveraging existing resources and developing new resource configurations, as well as new processes. These changes are essential to align the internal context with the strategic content. It is a leadership task to identify the new requirements of the strategy so the right organizational capabilities can be developed and fitted to these new requirements (Correani *et al.*, 2020).

Our findings indicate that organizations that incorporate digital transformation into their strategy work are aligning both their resources and activities. The resources that require alignment encompass not only financial resources but also time and competencies. The critical resources for digital transformation include IT resources, such as IT infrastructure and personnel, as they constitute an integrated part of the digital transformation (Cha *et al.*, 2015). However, while IT resources are undeniably vital, managers should not overlook the alignment of complementary resources, such as organizational structure, culture and suitable work policies. These elements are prerequisites for ensuring the necessary support for IT resources. Managers must undertake the dual task of aligning the directly applicable resources, such as IT systems and personnel, while concurrently ensuring that the more secondary organizational capabilities align with the trajectory of digital transformation. In this process, time and timing are of the essence, as prompt reallocation of resources can play a central role in sustaining a company's competitive position (Warner and Wäger, 2019). Consequently, strategy work for digital transformation necessitates agility rather than prolonged periods of forecasting

and assessment. The ability to process and make rapid decisions presupposes the alignment of resources and activities with the overarching strategy.

While some companies may not encounter difficulties in the process of allocating the necessary resources to support digital transformation, others, particularly small and medium-sized companies, may confront resource constraints that pose severe challenges. In such instances, the importance of managerial capabilities to support the work is even greater, as elaborated in the following.

Develop employee, middle and top manager competencies

Digital transformation is a complex, multifaceted process that requires the leadership and management of resources and networks extending beyond the traditional role of middle managers. As companies must be aligned with customer expectations and the digital ecosystem in which they are involved, the role of the middle manager must be redefined. This is central, as all members of the organization are integral participants in the digital transformation process, whether in a cognitive or material capacity (Volberda *et al.*, 2021). Digital transformation often presupposes a thorough revision of an organization's operations and business models. This invariably brings forth new professional roles and new digital transformation challenges that demand resolution. Employees may need specific skills and capabilities to fully seize the digital opportunities.

However, the requirements for competencies when leading digital transformation extends beyond the need for new digital competencies alone. Our findings show that digital transformation presupposes that organizational actors have the requisite competencies to navigate strategic change. This imperative applies to all levels of the organization, encompassing top managers, middle managers and employees. First, looking at the top managers, it is widely acknowledged that top management commitment is a key driver of success in organizational transformation. The top management must create focus in the vision and strategy through digital leadership and ensure commitment to digital transformation while ensuring continuous development of managerial competences, especially for middle managers.

The employees in an organization must have the digital skills to align with the organizational objectives outlined in the strategy if they want to succeed with the digital transformation. This places demands on the digital literacy of the employees. The concept of digital literacy covers the skills, knowledge and abilities used by a person or social group while interacting with digital technologies (Kozanoglu and Abedin, 2021). Digital literacy reflects the readiness of the employees for engaging in digital transformation and is, therefore, a critical dynamic capability of the organization during the transformation process. It is important to continuously maintain and upgrade the digital literacy of employees, both on the individual and organizational levels. The latter evolves and is shaped through interactions among employees within the organization. Consequently, leaders face the challenge of adapting the organizational culture, mindset and competencies to the new digital way of working, as opposed to merely adjusting to technological trends or new customer behavior.

Ensure operational improvements and efficiency

The strategic transformation which takes place when implementing digitalization can be pursued along either an offensive or defensive path. The choice between these approaches depends on several factors, including organizational barriers and inertia in the organization, causal ambiguity and the availability of financial resources for the transformation (Margiono, 2020). Defining the scale of change and the alignment with the current state of the organization is a leadership task which requires profound insight and understanding of the ongoing activities of the company and its future initiatives.

Our study shows that companies integrating digitalization into their strategic development effectively leverage their organizational resources. They adopt new technologies and approaches and consistently implement operational improvements into their everyday business operations. In all, this reflects their prioritization of operational improvement and efficiency across the entire organization.

The development, implementation and execution of digital transformation is a fine balancing act of managing both strategic transformation and daily operations. As argued by [Andriole and Barsky \(2022\)](#), obtaining this equilibrium can potentially lead to conflicts in organizational focus. An excessive focus on operational effectiveness may hinder the ability of the digital strategy to drive innovative development and create the necessary competitive edge or advantage. Nevertheless, it is apparent that the ability to prioritize operational improvements and efficiency provides a foundation for successfully integrating digitalization into strategy work. The organizational and processual maturity that often characterizes organizations that have established operational improvement and efficiency forms an optimal breeding ground for digital transformation.

Aspiring to strike a balance between efficiency in existing activities and operations and pursuing digital transformation necessitates a degree of control over the transformation processes, encompassing aspects such as information management, resource allocation, a continuous evolution of organizational structures and potential adjustment of strategic objectives to attain structural, contextual and leadership-based ambidexterity ([Wang et al., 2023](#)).

Create an orientation toward customer/user needs and expectations

Companies that take digitalization into account in their strategy prioritize a consistent focus on customer or user needs and expectations. The digital revolution has served as a catalyst for the digitalization of market analysis, customer engagement and user involvement across numerous industries. This transformation has led to the creation of products and services designed to facilitate easier access, customization and interaction between organizations and customers in a more efficient and consistent way ([Correani et al., 2020](#)). In digital transformation, rethinking the business model is essential for a company's value proposition, market segments and value chain.

Digitalization has changed companies' strategies and approaches to the market and customers in four areas: promoting products and services, conducting business activities, facilitating communication and information exchange and managing resources ([Cham et al., 2022](#)). Technology has also reshaped consumer consumption patterns, especially by integrating them into the procurement process.

Our findings show that companies where digitalization is a part of the strategy work consistently engage in market analysis to identify future customer/user needs and expectations. Moreover, these analyses are actively used in the development of products, services and organizational processes to enhance customer or stakeholder value. Consequently, several organizations in the study emphasize that they have undergone significant transformations in how they generate customer/user value over the past two years.

The digitalized interaction with customers and partners has not only impacted marketing and sales but has also given rise to new competitive dimensions and customer expectations, including a greater focus on service and customization ([Martín-Peña et al., 2018](#)). As AI continues to reshape these possibilities, the ability to align strategy work with a rapidly changing environment is increasingly important. Achieving this alignment necessitates advancements in technology, employee capabilities and leadership ability, as it entails a transition from data to information and the initiation of new strategic initiatives.

Managerial implications for digital transformation

As illustrated in Figure 1, digital transformation has strategic implications which must be considered in both daily operations and development activities. Based on the findings from strategy work in more than 1,100 Danish organizations, we have highlighted five strategic actions that leaders should consider when embarking on digital transformation to succeed with the strategic change. Strategic leaders must:

- Discuss and communicate the vision and strategy.
- Align resources and activities with the strategy.
- Develop employee, middle and top manager competencies.
- Ensure operational improvements and efficiency.
- Create an orientation toward customer/user needs and expectations.

It is not possible to assign greater importance to one action over another within the context of digital transformation, as each action plays a significant role in facilitating the process. As demonstrated, all these actions form an integral part of the strategy work undertaken by strategic leaders, with each contributing significantly to the overall effectiveness of the digital transformation journey.

Nonetheless, this gives rise to several considerations for organizations engaged in the management of digital transformation and its interplay with broader strategy work. The considerations encompass both the temporal aspects of strategy work and the structural leadership roles in digital transformation.

The temporal aspect of strategy work and digital transformations depends on the context in which the company is competing. In digitally intensive markets, ensuring orientation toward customer needs and expectations is essential for maintaining competitive positioning, which might initially supersede activities for operational improvements and efficiency. The ambidexterity of the strategic actions can challenge alignment and must always be considered.

Furthermore, the strategic awareness of the organization and its managerial adaptability affect change processes. For comprehensive digital transformation, it may be necessary to induct leadership legitimacy through organizational restructuring or by introducing roles such as that of a chief digital officer to facilitate the change process (Margiono, 2020).

The dimensions of scope, scale, speed and the sources of business value creation embedded within the digital business strategy are, as Bharadwaj *et al.* (2013) pointed out, inherently a leadership process. As argued by Gilli *et al.* (2023), digitalization is setting a new pace for organizational change while also posing new requirements for leadership skills. Change management skills are needed to shape change processes in organizations. In light of these insights, the five strategic actions elaborated above offer valuable guidance to organizations seeking to navigate the complex terrain of digital transformation as a part of their strategy work.

Keywords:
Transformation,
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Strategic actions,
Strategy work

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