

## **Strategic Foresight and Digital Transformation: A Dual Approach to Innovation**

### **Prospective stratégique et transformation digitale : Une double approche de l'innovation**

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## ABSTRACT

This research aims to introduce a new concept of the relationship between digital transformation and strategic foresight by exploring how multidimensional digital transformation can improve companies' foresight performance, which in turn positively impacts innovation capabilities. In this context, this research seeks to understand how digitalization can impact the practice of strategic foresight and the role it plays in developing innovation capabilities by identifying the means that can be adopted to develop strategic thinking about the future and respond to strategic changes. Data were collected from 10 Tunisian holdings companies through semi-direct interactions, non-participatory observation, and internal company documents, enabling us to introduce a new concept: the close link between digital transformation and foresight practice, such as collective anticipation. This study is challenging because it demonstrates the extent to which foresight practices have evolved and the extent to which digital transformation can impact performance and practice in companies located in a developing country.

**Keywords:** Strategic foresight, digital transformation, innovation capabilities, collective anticipation.

## RÉSUMÉ

Cette recherche introduit une nouvelle perspective sur la relation entre la transformation digitale et la prospective stratégique. Elle explore la manière dont la transformation digitale, dans ses multiples dimensions, peut améliorer la performance de la prospective au sein des entreprises et, par conséquent, renforcer leurs capacités d'innovation. L'étude repose sur des données empiriques recueillies auprès de dix holdings tunisiennes via des entretiens semi-directifs, de l'observation non participante et l'analyse de documents internes. Elle met en évidence un lien étroite entre la transformation digitale et les pratiques de prospective, telles que l'anticipation collective, tout en illustrant les effets de cette interaction dans un contexte économique en développement.

**Mots-clés :** Prospective stratégique, transformation digitale, capacités d'innovation, anticipation collective

## **1. Introduction**

The general context in which companies operate is characterized by abundant and rapid technological development, which can lead to competition that is difficult for companies to manage. Therefore, they must develop digital policies and regulations to respond to challenges and develop a proactive vision of the business environment to analyze ongoing environmental changes and explore potential future conditions (Sarpong & Maclean, 2016). This is especially true given that the business world is facing numerous crises and is strongly affected by these developments (Emmanuel & Lazaros, 2023). Therefore, it is necessary to systematically prepare for change by proposing new and bold approaches to develop the ability to plan for the future (Alessandro & Mark, 2024). It is quite logical that ongoing developments complement various globally advanced information technologies. However, according to studies and systematic literature reviews in recent years, it has been defined as a process that contributes to enhancing organizations' flexibility and ability to adapt to market changes and plan for the future.

This study calls for exploring and clarifying the relationship between strategic foresight and digital transformation, and the extent to which they together influence improving innovation capabilities. This relationship has been overlooked and not addressed in any research to date, despite individual studies of each concept indicating that digital transformation can improve strategic foresight practices and innovation capabilities (Guangming et al., 2025; Syed Abidur et al., 2025). The convergence between these two concepts stems from the need to improve long-term planning, enable early warning, enhance innovation capabilities, and respond quickly to environmental changes (Syed Abidur et al., 2025), while integrating research and practice to understand how digital transformation factors affect the foresight process and, consequently, innovation capabilities. While the concepts of strategic foresight and digital transformation are not mentioned in the same academic article, each concept

individually indicates that they impact numerous organizational factors, such as improving innovation capabilities and skill development (Guangming et al., 2025; Syed Abidur et al., 2025; Peter et al., 2021; Sara & Murad, 2024; Qiong & Hairong, 2025) as they help employees focus on more valuable and important work, technological

leadership (Sergey et al., 2021; Sungyong, 2024; Roberto & Andrea, 2016); which is a critical factor in adopting a comprehensive vision and enhancing collective success, developing collective anticipation (Didier et al., 2021; Amanda & Raquel, 2025; Theodore & Katerina, 2020), rapid access to information, promoting a sustainable future through information and

inspiration and addressing complex environmental challenges. All of these are essential factors in finding innovative and proactive solutions that help us move forward safely in this uncertain world (Peter et al., 2021). Accordingly, the company must focus its efforts on developing strategic foresight practices to ensure a very clear vision of the future that is considered a true innovation strategy (Sarpong et al., 2019; Sarpong et al., 2016; Sarpong & al., 2014; Sarpong et al., 2018; Sarpong et al., 2016). In other words, companies must be more attentive than ever to their environment by obtaining future and unimaginable information so that they can benefit from it for as long as possible and face the complexity and uncertainty that surround them on all sides, which creates continuous crises (Iden et al., 2016).

This phenomenon is mainly due to the rapid development of innovations, in particular the demand for information that is becoming more important every day in the business world, hence the urgency of a digital transformation that has proven itself time and again capable of facing the challenges. Indeed, the digital system best supports strategic decisions by changing the design of work and reevaluating social relationships by sharing precise information provided by digitalization (Didier et al., 2021; Gregory, 2019; Guangming, 2025). Digital transformation can help employees to move away from the usual framework of dealing with accumulated files that must be dealt with every morning, which prevents them from developing and reduces opportunities to engage in relational actions that strengthen anticipation and creativity (Marylise, 2017; Theodore & Katerina, 2020).

From this perspective, the urgent need for this study is evident in order to explore the multiple dimensions of digital transformation to understand how these factors impact the practice of strategic foresight. As a result, the degree of success in practicing strategic foresight is closely linked to the evolution of interactions between the technologies and programs used and the individual's mental model, which must be well-oriented to achieve visions for the future. Therefore, the integration of the strategic path, the intellectual path, and the digital path is essential to promoting a sustainable future by finding innovative and proactive solutions (Apaka & Atay, 2014), and by building new knowledge and developing intellectual skills and capabilities, all of which enable companies to respond to challenges and changes that lead to a safe move forward (Sarpong & Maclean, 2016; Bootz, 2018).

In this context, we note that there are many articles devoted to each concept separately, while few have pointed out the importance of integrating the phenomena of digital transformation and strategic foresight to address the successive crises that swept the world in the last decade of the last century, which had serious repercussions at the economic, social, political, cultural,

and other levels (Albisart et al., 2017). Therefore, this research aims to focus on the impact of strategic foresight and digital transformation in addressing challenges. In this context, we seek to understand how digitalization can impact the practice of strategic foresight and the role it plays in addressing challenges by identifying the means that can be adopted to develop strategic thinking about the future and respond to strategic changes.

To achieve these goals and demystify strategic foresight and digital transformation, we conducted a comprehensive literature review, which was combined with an exploratory study. This study demonstrated that strategic foresight is a free-spirited state of mind that helps chart a clear strategic path toward the future and define the axes that must be achieved in the long term. This study also identified the means to develop collective anticipation and strategic thinking (Theodore & Katerina, 2020; Alvial-Palavicino, 2015). Regarding digital transformation, previous studies indicate that it is a key element in developing organizational culture (Guangming, 2025; Grover et al., 2022; Büschgens et al., 2013), which in turn influences the development of strategic futures thinking, enabling organizations to manage strategic change and address challenges by identifying knowledge gaps and improving future research techniques (Sarpong & Maclean, 2016; Iden et al., 2016).

Following this broad introduction, with reference to the literature, the relationship between digital transformation, strategic foresight, and innovation constitutes a crucial research axis. On this basis, we pose the research question: *How do strategic foresight and digital transformation complement one another to stimulate innovation?*

For the purpose answer these research questions, we will also be led to address other questions to define the research objectives, which are presented in the form of a primary objective and other specific objectives. The primary objective is based on the analysis of situations and facts to define strategic foresight and digital transformation, identify how it works, and gain a deep understanding of its effects on innovation capabilities, considering the main rules that organizations adopt to build a long-term strategic plan. The specific objectives consist of:

- Exploring the relationship between these three concepts and analyzing how companies can leverage digital transformation to promote innovation through strategic foresight approaches.
- Develop a comprehensive conceptual framework by condensing current knowledge from the literature on strategic foresight and digital transformation.

- Use qualitative approaches, including semi-structured interviews and in-depth document analysis, to elucidate the mechanisms by which digital transformation improves foresight.
- Highlight the factors that foster the development of the relationship between strategic foresight and innovation capabilities.

To achieve these objectives, this study seeks to contribute to the theoretical debate on strategic foresight and to the practical understanding of the importance of the relationship between digital transformation, strategic foresight, and innovation in today's rapidly evolving business landscape. The study draws on several recent studies to explore how these elements interact to shape business sustainability, competitive advantage, and technological progress.

To understand the impact of digitalization on the practice of strategic foresight and its role in developing innovation capabilities, a qualitative approach was adopted. Ten Tunisian companies were observed through semi-structured interviews, internal document analysis, and non-participant observation. This approach aims to combine insights from the literature with empirical observations in a specific economic context.

Accordingly, this article is structured as follows: first, we present a literature review on digital transformation and strategic foresight. Then, we outline the adopted methodology, followed by the presentation and analysis of fieldwork results. Finally, the discussion places these results in perspective with previous works and concludes with theoretical and managerial contributions.

## **2. Theoretical development**

In this section, we review the relevant literature on strategic foresight and provide a theoretical overview to show that its support by digital transformation enhances innovation.

### **2.1 Digital Transformation: Overview and challenges**

Considering rapid technological development, digital transformation represents the key to more flexible and effective strategic planning, allowing for an understanding of current economic, societal, and technological developments. It thus brings about systematic change within organizations through its impact on organizational culture and operational processes, which in turn impact relational procedures within the institutional system. This was emphasized by Westerman et al., (2014) in their article, when they considered digital transformation a technological tool for improving corporate performance and a huge opportunity for systematic preparation for change and making certain strategic decisions

(Alessandro & Mark, 2024). Digital transformation has developed a strategic process for companies or organizations that integrate new digital technologies to improve their performance, efficiency, and capacity to innovate (Guangming et al., 2025; Akhannich & Benamar, 2023 ; Grover et al., 2022; Büschgens et al., 2013). This process involves an in-depth exploration of business models, value chains, organizational structures, and corporate cultures. Digital transformation is a comprehensive process that affects all dimensions of the organization, as is the practice of strategic foresight, as both rely on technological, organizational, and human factors (Henriette et al., 2015). Not only does the adoption of emerging technologies such as AI, cloud computing, or connected objects require them, but they also require changes in mindsets and governance. Taking the example of Vial (2019) who proposed a conceptual framework to define digital transformation as a process mediated by digital technologies that aims to bring about profound changes in organizational structures, corporate culture, innovation capacities, generative economic models as well as new forms of intellectual practices and relational actions. Moreover, recent studies have highlighted the role of digital transformation on the resilience of organizations, particularly in the face of the health or economic crises that the world has recently faced (Mai et al., 2024). As demonstrated by Madjidi & Bayubasire-Ishingwa (2020), digital transformation also influences internal social dynamics, particularly through social dialogue, which supports our hypothesis of its deep cultural impact. This digital transformation also poses significant challenges, including effective human resource management in the digital age and improving organizational and employee resilience in the face of uncertainty and volatility. As such, it is part of an evolving dynamic, driven by technological innovations and constantly changing societal expectations.

## **2.2 Strategic foresight – philosophical foundations, conceptual developments and practical dimensions**

Strategic foresight is a proactive management approach that allows organizations and decision-makers to anticipate future opportunities and threats in order to better guide their current decisions. It is based on a long-term vision, informed by strategic thinking, philosophical sensitivity, and imagination (Bootz et al., 2018; Burta & Karath, 2020). Thus, it allows companies to identify major trends and potential disruptions, and to develop scenarios to guide strategic decisions in an uncertain and complex environment. In addition, Strategic foresight is a fundamental branch of business strategy that aims to anticipate the potential future



in order to prepare robust current decisions in the face of uncertainty (Godet, 2007). It combines proactive analysis (the study of trends, weak signals, and scenarios) with strategy (the selection of directions and actions) to guide organizations toward a more predictable and, therefore, controllable future (Martinet, 2010; Sarpong & Maclean, 2016; Sarpong et al., 2013; Sarpong & Maclean, 2014; Sarpong & Maclean, 2016).

Since the pioneering work of Gaston Berger (1955), foresight has emerged as a critical response to humankind's inability to understand the profound transformations it is undergoing. Berger emphasizes that individuals, faced with change, have often neglected their power to influence their own future. He emphasizes the importance of breaking away from purely technical thinking and calls for a rehabilitation of human thought, the primary source of reflection and action. For Berger, it is not enough to move quickly; it is essential to "do things differently," by developing prospective thinking anchored both in the past and turned toward the future (Berger, 1957).

In this light, Berger (1964) proposes a vision according to which present events are the product of past decisions, while future events will be the consequences of decisions taken today. The future cannot therefore be considered as a mechanical extension of the past, but rather as an active construction, based on a capacity to anticipate and act.

Thus, strategic foresight encourages exploration of the future not to escape the past, but to critically reinterpret it. It aims to substitute a logic of anticipation for that of repetition. Possible futures can then be modeled through scenarios, reflecting the systemic complexity of an uncertain world and paving the way for informed strategic action (Berger et al., 1966). Ingvar (1985) introduces here the notion of "memories of the future", highlighting the importance of anticipations in the mental structuring of present choices.

From this perspective, Mojica (2010) emphasizes that foresight allows us to "see far and wide", enriching decision-making through a better understanding of uncertainties. It is not limited to methodological tools, but represents above all a philosophy of action, a way of considering the world and its transformations (Berger et al., 1966; Bootz, 2010; Sarpong & Maclean, 2016; Bootz et al., 2019).

Strategic foresight thus becomes a cognitive and organizational device that mobilizes the imagination and collective intelligence. It allows us to build a mental model of the future, influencing anticipations and promoting adaptation to environmental changes (Bootz, 2010). More recently, various authors (Bootz, 2016; Sarpong & Mclean, 2016; Iden et al., 2016; Rohrbeck et al., 2013) have broadened this concept by integrating relational and



organizational dimensions. These studies show that strategic foresight is also a lever for collective mobilization that can reveal overlooked opportunities and structure innovation.

Rohrbeck et al. (2013) define strategic foresight as a set of actions, techniques and decision-making processes that promote the identification of weak signals and the formulation of innovation strategies. In this sense, Bootz (2016) describes it as an information tool, a catalyst for action and a mental model, influencing individual and collective anticipations.

Recent contributions highlight that this approach helps decision-makers better understand their strategic environment, detect emerging opportunities and position their organization in new competitive spaces (Sarpong & Maclean, 2016; Iden et al., 2016). The success of this orientation relies on the alignment between the techniques used and the mental representations of the actors.

Strategic foresight is a multidisciplinary approach that leverages both diverse perspectives and intuition to develop long-term action plans. It aims to guide strategic directions, reduce areas of uncertainty, and integrate complexity into decision-making processes, particularly in innovation dynamics (Bootz, 2019). Initiated by Gaston Berger, this approach is echoed in the work of Emery and Trist (1965), who highlight the challenges associated with the growing complexity of organizational environments. These environments are characterized in particular by increased interconnectedness and a systemic openness of the contemporary world (Heger & Rohrbeck, 2012; Rohrbeck & Schwarz, 2013).

Thus, in a world characterized by complexity, uncertainty, and interconnectedness, strategic foresight emerges as a discipline at the intersection of social sciences, management, and technology, helping to strengthen organizational resilience, strategic foresight, and the capacity for sustainable innovation.

### **2.3 Strategic Foresight and Digital Transformation: An Innovation Lever**

The rapid adaptation of organizational structures to environmental changes, particularly in an economic context characterized by uncertainty, complexity, and technological acceleration, is enhanced by digital transformation. Indeed, the emergence of advanced digital technologies (AI, big data, cloud computing, IoT, etc.) offers the opportunity to reorganize internal processes, improve decision-making, and increase strategic flexibility. This corresponds to Teece's (2007) definition of dynamic capabilities, which are an organization's ability to assimilate, improve, and restructure its internal and external competencies to adapt to a constantly changing environment (Guangming, 2025; Grover et al., 2022; Jie, 2025).

In this context, digital transformation is fundamental to activate and strengthen these dynamic capabilities (Cao, et al., 2015). By betting on emerging technologies, an organization can identify new perspectives, anticipate disruptions and actively reshape its business models by uncovering future research results. This requires a forward-looking strategic approach, capable of envisioning the potential future and preparing for it through technological advancements and organizational innovation (Li, 2020; Ravichandran, 2018).

The adoption of digital technologies is not limited to the incremental improvement of existing processes: it stimulates the emergence of new ideas, often in unexpected contexts or outside of traditional routines, such as by giving more time for collective anticipation and strategic conversations (Theodore et al., 2020). This dynamic is essential for successful future-shaping, as it encourages the creation of original solutions that adapt to emerging problems and improves anticipation and imagination of the future by developing communication between individuals inside and outside the organization. As Boland et al. (2007) point out, innovation often arises at the intersection between a detailed understanding of strategic needs and the creative exploration enabled by digital technologies. Therefore, the relationship between digital transformation and strategic foresight helps support innovation by overcoming organizational resistance and placing experimentation, learning, and speed of movement at the heart of foresight practices, as this relationship helps reduce the psychological and cultural barriers that slow down the adoption of change. Thus, collaborations between these two concepts are more involved in foresight practice and thus develop innovation capabilities, facilitating the transition to new digital operating modes and successful anticipation of the future.

### **2.3.1 Artificial Intelligence and Predictive Analytics in the Face of Uncertainty**

Strategic foresight is an anticipatory and creative approach that aims to construct plausible representations of the future in order to guide current decisions (Berger, 1964; Godet, 2007). It is based on three fundamental pillars: lucidity (analysis of the environment and weak signals), imagination (exploration of alternative futures) and will (strategic action). Applied to innovation, this posture not only makes it possible to detect emerging disruptions, but also to integrate them into proactive transformation logics (Bootz et al., 2019).

Digital transformation plays a central role in the contemporary evolution of strategic foresight, enriching organizations' anticipation, analysis, and decision-making capabilities in the face of an increasingly uncertain and complex environment. Technologies emerging from the fourth industrial revolution—such as artificial intelligence, big data, cloud computing, and

collaborative platforms—enable improved detection of weak signals, the modeling of complex scenarios, and enhanced organizational agility (Morrar et al., 2017; Mendonça et al., 2004). Several studies highlight that the integration of these digital tools promotes better coordination

between strategic vision and continuous innovation (Hoon & Jacobs, 2022; Rohrbeck et al., 2015), while strengthening companies' dynamic capabilities to adapt to future disruptions (Teece et al., 2016). Empirical work conducted in entrepreneurial or governmental contexts also shows that digitalized strategic foresight initiatives promote more informed and agile decision-making (Ghezzi et al., 2015; Calof et al., 2018). Thus, digital technology is not simply a support tool, but a fundamental lever for transforming the way organizations think, plan and build their strategic future.

### **2.3.2 Foresight as a catalyst for innovation in a digitalized world**

Digital transformation is a systemic phenomenon, affecting all of an organization's functions and businesses. It involves the networking of objects, the automation of tasks, massive data management, and the reconfiguration of human-machine interactions. These profound changes make strategic management more uncertain and accentuate the need to think beyond the immediate present (Brynjolfsson & McAfee, 2014; Westerman et al., 2011). In this context, strategic foresight provides a language, a framework, and a method for anticipating these changes.

When linked to digital transformation, foresight does more than just support innovation; it becomes its driving force. By leveraging methods such as dynamic scenarios, risk-opportunity matrices, or shared visions, companies can transform their digital transformation into a lever for radical innovation (Rohrbeck & Kum, 2018; Sarpong & Maclean, 2016). This alliance also helps increase the resilience of organizations by preparing them for future shifts, whether technological, social, or economic.

### **2.3.3 Towards prospective governance of digital transformation**

Innovation resulting from strategic foresight is based on collective, participatory, and reflective processes. It requires renewed governance, capable of integrating long timescales, multiple imaginaries, and continuous learning (Bootz, 2016; Iden et al., 2017). This implies a major cultural shift: moving from a logic of control to a logic of strategic learning, based on the co- construction of digital visions and the activation of weak signals as innovation resources.

Ultimately, the literature review reveals a strong convergence between digital transformation and strategic foresight. The integration of digital technologies (AI, Big Data, cloud computing, collaborative platforms) not only improves anticipation capacity, but also makes strategies more adaptive and robust in the face of uncertainty. Therefore, we propose the following propositions:

*P1: Digital transformation strengthens organizational responsiveness by optimizing decision-making and operational processes.*

*P2: Alignment between corporate culture and digital technologies determines the success of transformation processes and their impact on competitiveness.*

*P3: Companies that combine digital transformation and strategic foresight demonstrate greater resilience in the face of crises and economic uncertainties.*

*P4: Integrating strategic foresight into the company's digital management makes it possible to anticipate market disruptions and identify new levers for innovation.*

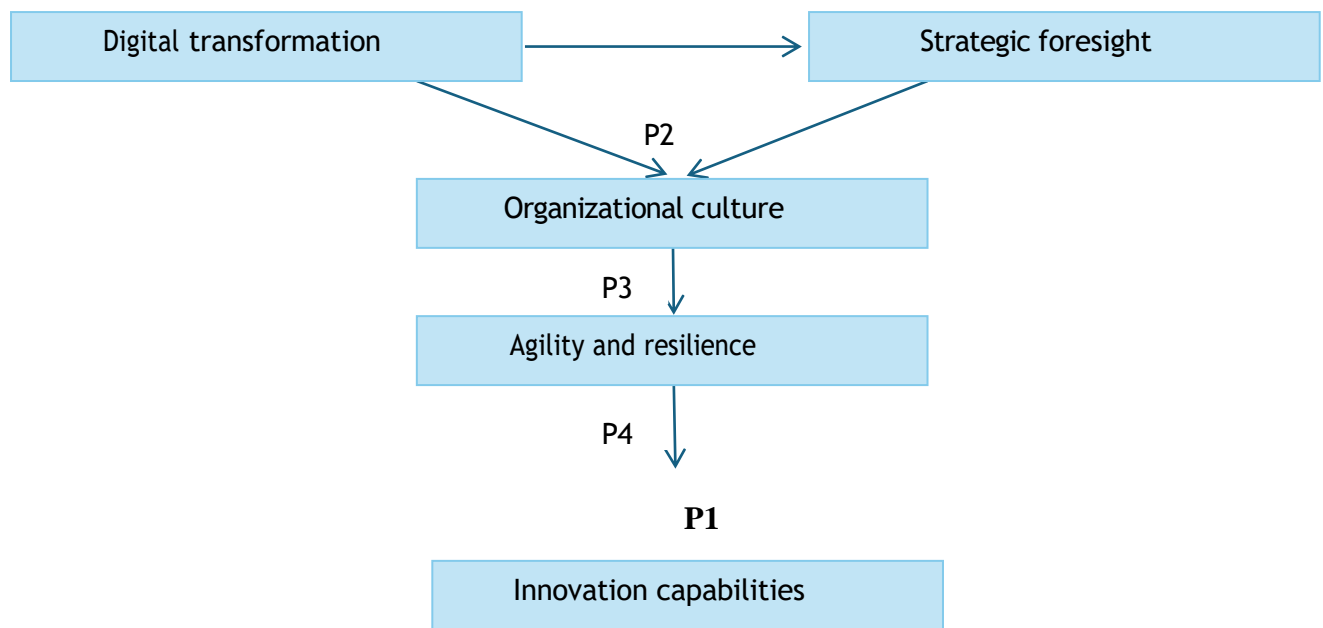
### **3. Research methodology**

#### **3.1. Research Philosophy and Approach**

Given the inherent complexity of the subject of this research—namely, the articulation between digital transformation and the practice of strategic foresight as levers of innovation—we opted for an interpretivist epistemological stance and an abductive approach. This theoretical positioning is part of our desire to understand a phenomenon that is still relatively unsettled in the academic literature, where strategic foresight remains a concept that is both multidimensional and difficult to operationalize, and where digital transformation still raises many questions regarding its implementation and actual impacts on organizations.

The choice of an abductive approach is justified by our desire to start from empirical observations and return to theoretical frameworks, in a logic of iteration and conceptual reconstruction. Indeed, as Yin (2003) & Thiétart (2015) emphasize, the study of complex and contextually rooted phenomena—such as the strategic use of digitalization in foresight approaches—requires immersion in the natural context of these dynamics. This interpretative framework allows us to understand how organizational actors give meaning to these practices and to uncover the logic underlying their strategic decisions.

Here, we propose a conceptual framework for our research on digital transformation and strategic foresight as a lever for organizational culture, as follows:



**Figure n°1. Digital transformation and strategic foresight as levers of innovation and resilience**

### 3.2. Sample and data collection

With this in mind, we adopted the multiple case study method to ensure greater analytical robustness and identify cross-disciplinary regularities across different organizational contexts. This methodological choice also aims to promote data triangulation, cross-referencing multiple sources of information (semi-structured interviews, internal documents, non-participant observation, etc.) to maximize the internal validity and credibility of the results. Finally, for the processing and analysis of the qualitative data from the interviews and documents collected, we decided to use the IRaMuTeQ software (R Interface for Multidimensional Analysis of Texts and Questionnaires). This tool, based on the R language, offers a wide range of textual analyses (top-down hierarchical classification, word clouds, lexical similarity, etc.) allowing us to identify trends, meaning structures and shared representations on key research themes. The use of this tool reinforces the scientific rigor of our analysis while ensuring a faithful restitution of the discourses collected on digital transformation and strategic foresight.

### 3.3. Research Timeline and Fieldwork

The research process was carried out using a progressive and structured approach in several phases. Initially, an in-depth literature review was conducted between January and February

2023 to better understand the key concepts of digital transformation and strategic foresight, and to enrich the theoretical basis of the work. This phase was followed, in March 2024, by the construction of the conceptual model through the identification of key variables and the formulation of research propositions. In April, the methodological tools were developed: design of the interview grid, drafting of the consent form and pilot testing of these instruments. The next phase, in May 2024, focused on field preparation with the selection of participating organizations, contacting respondents and planning interviews. Data collection took place between June and July 2024 through semi-structured interviews conducted in person or remotely. In August, an initial transcription and coding phase prepared the data for lexical analysis using IRaMuTeQ software. The actual analysis took place in December, combining thematic analysis and co-occurrence of terms to reveal regularities.

#### **4. Result**

This section presents the empirical results from the qualitative analysis of interviews conducted with organizational actors involved in digital transformation and strategic foresight processes. Data analysis, supported by IRaMuTeQ software, identified several recurring themes that confirm and qualify the proposals formulated upstream.

The analysis of semi-structured interviews conducted with organizational decision-makers revealed several significant findings on the relationship between digital transformation and the practice of strategic foresight. First, the data highlight that digitalization is not only a set of technological tools, but above all a vector of cultural and strategic change, which strengthens organizational anticipation capabilities (Westerman et al., 2011). Digital transformation promotes the rapid circulation of information, predictive data analysis, and cross-functional collaboration, all essential elements for the implementation of proactive and reactive foresight (Bharadwaj et al., 2013).

The results also suggest that digitalization improves the strategic visibility of organizations by allowing them to explore multiple future scenarios through advanced analysis technologies (big data, AI, collaborative platforms), which corroborates the findings of Heger & Rohrbeck (2012), according to which digital technologies strengthen dynamic anticipation capabilities. Many interviewees mentioned that digital transformation facilitates the early detection of weak signals and the identification of emerging trends, essential conditions for an efficient strategic foresight approach (Rohrbeck & Schwarz, 2013).

#### **4.1. Digital transformation as a lever for strategic anticipation**

The data reveals that digitalization significantly improves organizations' ability to anticipate technological disruptions and changes in their environment. Digital tools such as business intelligence platforms, big data analysis, and dynamic visualization solutions enable faster identification of weak signals. Respondents indicate that these devices facilitate a prospective reading of the present and strengthen the ability to project evolutionary scenarios. The data collected reveals a symbiotic relationship between digital transformation efforts and organizations' capacity for strategic anticipation. Digitalization is not limited to technological developments but also constitutes a lever for building shared future visions. Indeed, big data analysis tools, artificial intelligence, and predictive modeling strengthen decision-makers' ability to plan for the future (Voros, 2017; Miles, 2020).

This logic is reflected in the initiatives observed at Company X, where the integration of advanced AI systems via Borealis AI not only optimizes processes but also informs long-term strategic decisions.

Thus, digital transformation appears to be a catalyst for proactive anticipation, in line with *proposition P1*.

#### **4.2. Impact of digitalization on strategic foresight practices**

The results also indicate that digital transformation is profoundly changing strategic foresight practices within companies. Data accessibility, rapid information processing, and collaborative mechanisms encourage the involvement of multiple hierarchical levels in thinking about the future. The interviews reveal a dynamic of decentralization of foresight, made possible by digital tools that facilitate exchanges, simulations, and the co-construction of scenarios. This observation corroborates *proposition P2*.

#### **4.3. The mediating role of organizational culture**

The thematic analysis highlights a crucial point: the positive effects of digital transformation on foresight are only observable if an organizational culture conducive to innovation is present. In organizations where a culture of openness, experimentation, and collaboration prevails, digital tools effectively strengthen the foresight approach. However, in contexts marked by a strong hierarchy or risk aversion, digitalization remains superficial and without significant strategic impact. This observation validates the proposition of a mediating role of organizational culture.



Furthermore, empirical results confirm that this transformation can only bear fruit if it is accompanied by a change in managerial mentalities and practices. In this sense, digital transformation acts as a catalyst for the cultural evolution of organizations, by promoting participatory practices, agility, and openness to experimentation—all characteristics conducive to the implementation of a foresight culture (Levy, 2018). Managerial understanding of the strategic role of digitalization thus proves decisive in the success of a foresight process (Brynjolfsson & McAfee, 2014). This observation corroborates *proposition P3*.

#### **4.4. Better strategic agility through the combination of levers**

The combination of a digitalization strategy and a well-established foresight approach generates real strategic agility. Companies affected by this dual dynamic demonstrate a greater ability to adapt to crises, anticipate disruptions more quickly, and more accurately identify market opportunities. The integration of the two levers acts as a driver of proactive and sustained innovation, providing a concrete response to the complexity and volatility of the environment.

Finally, our results reveal that the articulation between digitalization and strategic foresight becomes a powerful lever to stimulate organizational innovation capacities. By mobilizing digital tools to anticipate future developments, companies can develop coherent and mobilizing strategic visions (Müller et al., 2018), promoting the emergence of innovative solutions adapted to the transformations of their environment. This observation corroborates *proposition P4*.

#### **4.5. Impact on innovation capacity**

The combined dynamics of digital transformation and strategic foresight strengthen innovation capacity, both in terms of idea generation and implementation. Participants emphasized the importance of this dual approach for developing a shared vision of the future, which fosters the emergence of disruptive innovations and rapid adaptation to changing contexts. This validates propositions P1, P2, and P3 formulated in our conceptual model.

#### **4.6. The Importance of Managerial and Cultural Alignment (Field appearance)**

The results show that the success of foresight approaches relies heavily on managers' understanding of and commitment to the challenges of digital transformation. When senior executives view technologies as strategic management tools (and not as ends), they are more inclined to use foresight to guide organizational change (Rohrbeck & Kum, 2018).

This aligns with the vision advocated by *Company Z*, which promotes a culture of innovation rooted in talent diversity and interdisciplinary collaboration to support major societal and digital transitions.

#### **4.7. The emergence of new organizational concepts**

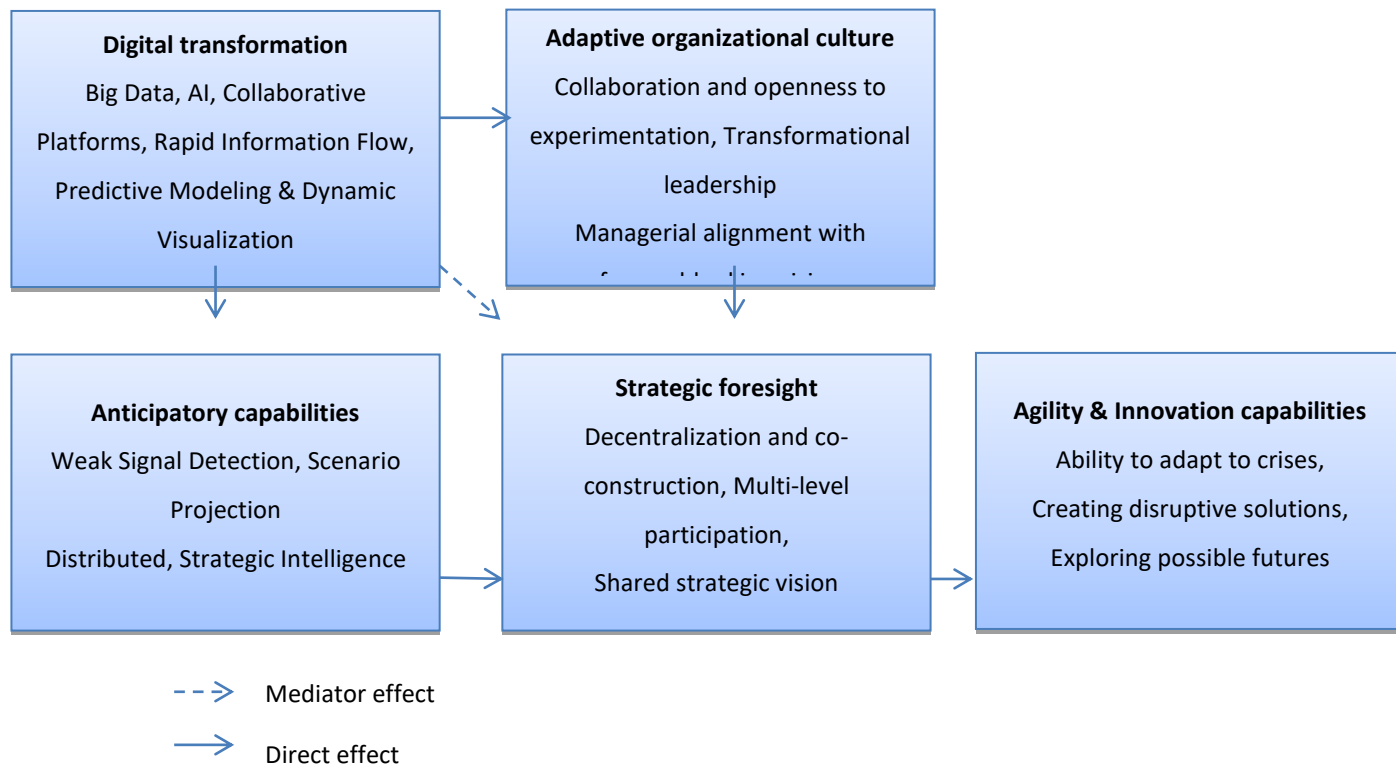
The analysis of the interviews revealed new or reinterpreted concepts that prove to be structuring in prospective transformation approaches: "organizational capacity for anticipation," "strategic agility," and "digital resilience." These concepts reflect the desire to anchor transformation in a proactive approach, focused on long-term value creation rather than reactive adaptation.

This conceptual emergence is consistent with the work of Dufva and Ahlqvist (2015), who emphasize that shared visions of the future can only emerge in an organizational environment where innovation and participation are encouraged.

Based on the IRaMuTeQ program, we have identified new major categories based on semantic analysis on digital transformation and strategic foresight.

This program highlights four major emerging themes:

- *Adaptive organizational culture*
- *Strategic vision and leadership*
- *Collaborative technologies*
- *Anticipatory capabilities*



**Figure n° 2. Adaptation of the conceptual framework to empirical reality**

Here is the conceptual framework adapted to the empirical reality:

- Digital transformation is positioned as a primary anchor, directly influencing organizational culture, leadership, and collaborative technologies.
- Strategic foresight plays a pivotal role, linking leadership, culture, and anticipatory capabilities.
- Anticipatory capabilities are downstream, influenced by culture and technologies, while also being a direct lever for innovation capacity, positioned as the outcome of the process.
- Each link reflects the empirical results drawn from the inductive analysis and the initial model.

The conceptual framework, adapted to empirical observations, reveals a dynamic interdependence between several key organizational levers. Digital transformation acts as an initial catalyst by providing technological tools (e.g., big data, AI, collaborative platforms) that significantly improve organizational anticipation capacity (Westerman et al., 2011; Rohrbeck & Schwarz, 2013). This capacity, in turn, informs and strengthens strategic

foresight practices, enabling earlier detection of weak signals and more relevant scenario planning (Heger & Rohrbeck, 2012; Müller et al., 2018). These foresight practices foster greater strategic agility and stimulate continuous innovation (Levy, 2018; Brynjolfsson & McAfee, 2014). However, the effectiveness of this dynamic depends heavily on the presence of an adaptive organizational culture, which plays a key mediating role. Without a culture rooted in collaboration, experimentation, and openness to change, the potential of digital transformation in terms of foresight and innovation remains limited. It is therefore in the coherent articulation between technology, anticipation, culture, and strategy that organizations find their ability to manage uncertainty and create long-term value.

In conclusion, we will review the proposals after the final modifications we made during the empirical research.

*P1: Digital transformation influences the emergence or strengthening of an adaptive organizational culture within companies.*

*P2: The tools and technologies resulting from digital transformation contribute to improving organizations' capacity for strategic foresight.*

*P3: An adaptive organizational culture facilitates the transition from digital transformation to concrete strategic foresight practices.*

*P4: The capacity for anticipation plays an important role in activating and strengthening strategic foresight approaches.*

*P5: Strategic foresight leads to increased strategic agility and continuous innovation.*

*P6: The role of digital transformation on innovation is mediated by organizational culture and strategic foresight.*

## 5. Discussion

The results of this study show that digital transformation, far from being simply a technological lever, acts as a strategic catalyst when aligned with an organizational culture open to innovation and anticipation. This conclusion is consistent with the work of Westerman et al. (2011), who assert that digitalization transforms organizations' mental models, making them more proactive and agile.

First, the analyses confirm that digital transformation stimulates the emergence of an adaptive organizational culture, characterized by collaboration, agility, tolerance for uncertainty, and a strong emphasis on continuous learning. This culture becomes fertile ground for the integration of forward-looking practices, thus aligning with Sardar's (2010) perspective on the importance of creating an "organizational futurism" rooted in the present.

Second, digitalization has fostered the emergence of more visionary leadership, aware of the importance of anticipating technological disruptions and societal changes. This managerial stance aligns with the literature on transformational leadership (Bass, 1990) in that it inspires a proactive orientation toward the future.

Third, the study highlighted the role of collaborative technologies (digital platforms, collective intelligence, co-creation tools) as facilitators of shared prospective intelligence. The data collected suggest that these tools make it possible to map weak signals, foster collaborative scenarios, and mobilize collective creativity—thus extending the work of Rohrbeck & Kum (2018) on foresight as a driver of systemic innovation.

Fourth, the combined effect of digital transformation, adaptive culture, and visionary leadership is manifested by a significant increase in the anticipatory capabilities of the organizations studied. They became better able to detect disruptions, formulate shared visions of the future, and design innovative responses—a process that Godet (2001) refers to as a form of “distributed strategic intelligence.”

Finally, all of these levers converge toward the development of sustainable strategic innovation, based both on a forward-looking exploration of possible futures and the mobilization of digital and human resources. This model supports the thesis of mutual enrichment between strategic foresight and digital transformation, each reinforcing the other in a spirit of dynamic adaptation to the environment.

Despite these positive results, several obstacles were identified: resistance to cultural change, the lack of strategic digital skills among some managers, and the absence of clear governance of the transformation. These challenges corroborate the difficulties highlighted by Thietart (2015) in managing strategic projects in an uncertain environment.

## 6. Conclusion

In an era of systemic uncertainty, marked by rapid technological change, geopolitical and economic crises, and an increasingly complex organizational environment, the ability to anticipate is becoming a major strategic challenge. This research has demonstrated that digital transformation, far from being a simple technological lever, constitutes a fundamental catalyst in the evolution of strategic foresight practices. It not only strengthens organizational responsiveness but also creates the necessary conditions for a shared vision and more agile anticipation of the future.

Our results highlight that the success of a strategic foresight approach depends heavily on organizational culture, the ability to encourage innovation, leverage collective intelligence,

and leverage digital tools within a coherent strategic framework. From this perspective, the role of leaders is crucial: they must be drivers of meaning, promote collaboration, and embody a forward-looking vision.

The study also highlights a transformation in the relationship with strategic time. Once linear and relatively predictable, this relationship has now become dynamic, multidimensional, and uncertain. Lessons from the past are no longer enough to illuminate the future; it is now necessary to mobilize strategic imagination, cross-disciplinary knowledge, and a proactive stance in the face of change.

Ultimately, digital transformation and strategic foresight should not be considered two independent approaches, but rather as complementary dynamics that, when integrated within a supportive organizational culture, can significantly strengthen organizations' capacity for innovation, adaptation, and resilience.

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