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Using dynamic capabilities to cope with digital transformation and boost innovation in traditional banks

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Abstract Financial institutions operate in a competitive, complex, and uncertain environment. A series of changes—many accelerated by the COVID-19 pandemic—demand innovative movements from the organizations that operate in the sector. The emergence of new business models (e.g., fintecs) requires a realignment of the capabilities of traditional organizations, such as banks. Indeed, internal adaptations and the formulation of market strategies focused on a digital user are part of the current narrative. But how can it be executed? This article explores the relationship between dynamic capabilities and digital transformation. In summary, we present insights about how dynamic capabilities can drive innovation in traditional financial institutions based on the challenges brought by digital transformation. Starting from a Brazilian case study, we identified that external and internal contextual factors—especially the political-legal environment and cultural and governance issues—are necessary for stimulating the dynamic capabilities that should be addressed for digital transformation. Finally, we propose a framework that summarizes how dynamic capabilities enable the guidance of traditional banks amid challenges caused by digital transformation.

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1. From bonanza to a new storm

Since the Subprime Crisis, the financial market has stimulated the process of strengthening traditional institutions by concentrating resources, incorporations, mergers, and acquisitions (Mishkin, 2011). This positioning temporarily established a conservative posture to avoid possible economic distress and hindered competition and the entry of potential new players. It also allowed financial institutions a certain strategic accommodation (Thakor, 2020). However, the bonanza did not last long. Today, the ability to adapt to disruptive digital environments and external forces via digital transformation is an important and challenging point for most organizations in the sector, especially banks.

New business models—many of them resulting from new technologies (Berman, 2012; Gomber et al., 2018)—have emerged in recent years, threatening the maintenance of the hegemonic role of traditional banks in the concentration of assets and loans. For example, *fintechs*[1], which focus on technological innovation, process realignment, and service transformation, deliver solutions that have never been seen or implemented in the financial market (Gomber et al., 2018). Perceived as facilitators of financial technology, fintechs have developed a pattern that breaks the traditional value chain (Acar & Çitak, 2019; Lee & Shin, 2018).

Numerically, there are now around 5.62 billion fintech users globally, with the digital payments segment accounting for the largest share of users (4.4 billion; Statista, 2023). A global phenomenon in Latin America, this sector grew by 112% between 2018 and 2021 (Inter-American Development Bank, 2022). There are around 2,500 fintechs in the region that offer digital services and products to the population (i.e., more than 20% of all fintechs in the world). Brazil has the largest number of companies, projects, and startups that fall into the segment, hosting 31% of the total existing fintechs, followed by Mexico and Colombia, which have 21% and 11%, respectively. In 2022, fintechs raised about 40% of all venture capital contributions accounted for in Brazil (hundreds of millions of dollars; Distrito, 2023).

In this scenario, and to maintain their financial power and reliable customer base, banks urgently need to realign their competitive reaction capabilities (Reunamäki & Fey, 2022). Technological advancement has changed the way financial services are designed, created, and consumed (Bhatt et al., 2022), and fintechs are quicker at following digital transformation (Suryono et al., 2020). As such, in a volatile, complex, and uncertain environment (Gomber et al., 2018; Warner & Wäger, 2019), dynamic capabilities can enable the necessary digital transformation processes that banking institutions need to experience (Marx et al., 2021).

We understand that analyzing dynamic capabilities for digital transformation is an alternative to the continuity of the banking business (Acar & Çitak, 2019). As banks struggle to expand their focus on artificial intelligence (AI), 5G technology, blockchain, big data, and the Internet of Things (IoT), such actions are not proving to be enough. The transformation of traditional organizations needs to go beyond technologies and product innovation to process innovation (Gomber et al., 2018). For digital transformation to occur effectively, changes from the inside out are necessary (Teichert, 2019). In other words, knowledge, values, culture, and the way of operating and serving need to be revisited (Vial, 2019). In addition, teams need to acquire the capabilities, skills, and attitudes necessary to analyze, plan, implement, and control actions related to digital transformation (Hensellek, 2022; Tekic & Koroteev, 2019).

Although the banking sector has incentives for expansion and development promoted by class entities and governments (Acar & Çitak, 2019), the high competition in the market requires agility, customer focus, and regulatory ease (Thakor, 2020). Traditional institutions in the sector began to face the primary challenge of responding to threats that arise from the rapid expansion of novel competitors (Marx et al., 2021). Today, we find exclusive fintechs for legal entities, and small- and medium-sized companies specializing in condominiums, among other niches. Our current reality presents numerous solutions and customization services, leaving users well-equipped with options. In addition to personal or business credit, investments, payments, insurance, financial management, exchange, accounting, antifraud systems, and crypt currencies, fintechs are now specializing in users.

Besides the competition issue, environmental aspects such as the COVID-19 pandemic have accelerated the need for a digital restructuring process in the banking sector (Zuo et al., 2021). The pandemic has triggered a sudden increase in the use of digital financial services (Bhatt et al., 2022). Due to the restrictive measures adopted globally in the period, the use of digital channels

[1] Companies that introduce innovation to the financial market by using technology intensively capable of generating novel business models. Operating mainly through online platforms, these companies offer innovative digital services that are related to the sector (BCB, 2022).

(e.g., mobile and internet banking) became essential for consumers of different generations and levels of technological familiarity (Naeem & Ozuem, 2021). Based on research carried out by the World Bank (2019), 45 million Brazilians were not yet included in the banking system in 2019. One year later—already in a pandemic scenario—the number of people who did not have a bank account had dropped by 73% (Americas Market Intelligence, 2020).

Faced with the various challenges and transformations that take place in the financial sector—especially for banks—this article analyzes a case study to offer insights into digital transformation in traditional businesses. First, we describe dynamic capabilities and their relationship to digital transformation. Then, we outline a Brazilian case study and relay how our findings can be transferred to other banks. Finally, we list opportunities for future advances in the subject.

2. Dynamic capabilities as a means for resilience amid digital transformation

Seen as a phenomenon, digital transformation is an integral part of the ongoing change in contemporary society, innovating via digital technologies (Guinan et al., 2019; Tekic & Koroteev, 2019). However, technology is just one factor in this change (Verhoef et al., 2021). Strategies, changes in structure, processes, and culture also support value creation from the digital transformation perspective (Vial, 2019). In this scenario, the theory of dynamic capabilities (Teece et al., 1997) can help traditional banks build resilience in the face of digital transformation.

Although 80% of companies turn to digital solutions to face current business challenges, only 30% achieve a true digital transformation, according to a recent study conducted by the Boston Consulting Group (2022). Changes around technological innovations need time to happen, especially in their structural aspect. Therefore, in the same way that dynamic capabilities have allowed traditional companies in the fashion sector to restructure chains aimed at sustainable transformation (Todeschini et al., 2017), they can also qualify and guide traditional banks to effectively transform, far beyond a simple adaptation.

Dynamic capabilities are usually described as a path to organizational success. By enabling an agile and effective response to technological and market changes, *dynamic capabilities* refer to the ability to create, extend, and innovate organizational resources (Marx et al., 2021). Dynamic capabilities are closely related to innovation in the organizational business model, representing the integration, construction, and reconfiguration of an organization's inherent competencies (Teece, 2018).

The framework that supports dynamic capabilities guides the identification of the skills needed to integrate, build, and reconfigure the internal and external organizational resources required for change, especially regarding digital transformation (Marx et al., 2021). Providing support for business continuity in contexts of turbulence and competition, dynamic capabilities are effective for understanding how companies reach digital maturity as they design and maintain adaptable mechanisms that can navigate successive waves of digital innovation (Vial, 2019).

Digital transformation management necessarily involves the development of dynamic capabilities aimed at this objective (Ellström et al., 2022). Considering the context characterized by digital technologies, disruptive competition, and unpredictable consumer behavior, Figure 1 summarizes nine microfundamentals of dynamic capabilities intended for digital transformation—especially considering the scope of new technologies (Warner & Wäger, 2019).

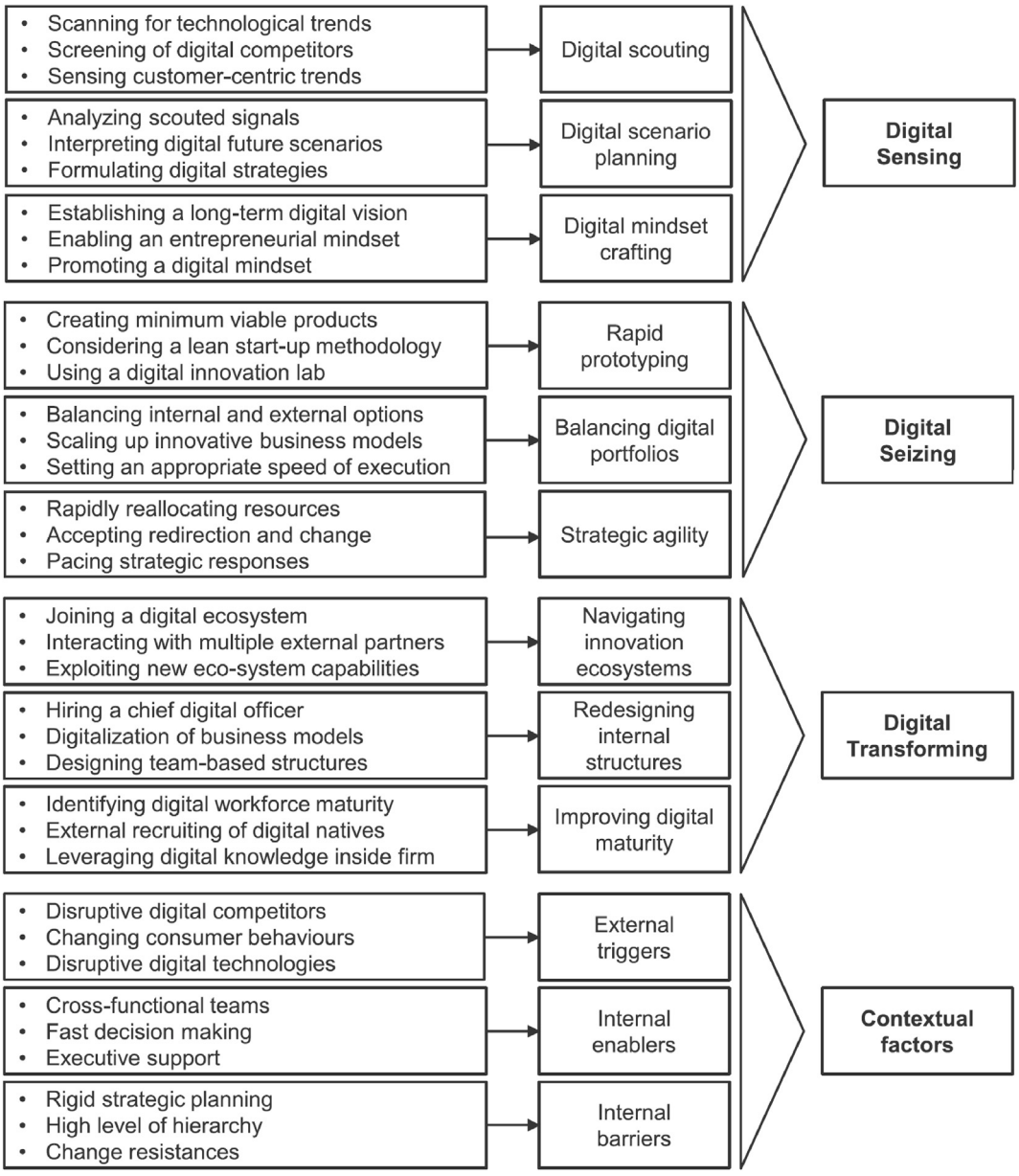
Dynamic capabilities in a digital transformation environment segment the process into three levels: (1) digital sensing, (2) digital seizing, and (3) digital transforming. This is a relevant complement to the original model aimed precisely at guiding organizations to innovate their business models to meet the needs associated with a digital transformation environment.

2.1. Digital sensing

Digital sensing embodies the creation of demand for transposing the traditional approach to the digital one in strategy formation. It helps to develop digital scenario planning and, through digital scouting, identify new digital trends among customers and suppliers. At this level, the advent of formal and informal networks and technologies (e.g., big data, analytics, and AI) are used. The central idea involves anticipating new approaches that are difficult to predict. However, to generate digital scenario planning and digital scouting, it is necessary to adopt a digital mindset, structuring the organization toward a digitally-oriented culture combined with a long-term vision.

To work on the digital mindset, technology CEOs (Meisler, 2023; Saraiva, 2023a) indicate that, in addition to the ability to use new digital tools, it is necessary to establish a method of predicting

Figure 1. Dynamic capabilities for digital transformation



Source: Warner and Wäger (2019).

possibilities. In other words, mindset is directly related to the goal of being more open to digital transformation than new technologies. A study conducted by the Boston Consulting Group (2022) found that nearly 70% of all digital transformation efforts fall short of their primary goals. Several leading global companies mentioned this failure and justified it by the absence of a digital mindset. There is an urgency to promote cultural evolution to help people within the organization take advantage of new thinking processes. Communication, creativity, and experimentation are fundamental for solving user challenges, not just following what a new digital platform lists as a competence.

2.2. Digital seizing

At level (ii) digital seizing, business model innovation is essential to digital transformation. It is necessary to incorporate strategic agility to quickly identify the market's technological opportunities. Adopting an agile, flexible, and dynamic position for the continuous redirection of the organization is crucial. Therefore, we suggest rapid prototyping to strengthen strategic agility. *Prototyping* simulates

examples of strategic decisions via digital innovation laboratories and experiments with viable products. In addition, it enables the collection of real-time customer feedback.

There are different initiatives to evaluate and accelerate digitization projects. In Brazil, the LIFT Lab (i.e., a laboratory for developing prototypes of innovative products by society itself with support from the Central Bank) serves as a basis for testing new ideas (BCB, 2022). A member of Lift Lab—the Brazilian Federation of Banks (Febraban, 2022)—created a project for the immediate and automated settlement of transfers, along with making payments in a single environment and focusing on institutional investors 24 hours a day. Debentures were used for the tests, but the service may include other financial assets. At the same time, the LIFT Challenge—held by Fenasbac in partnership with the Central Bank of Brazil—brings together market participants interested in developing a minimally viable product (MVP) that meets the focus of the call. In 2023, the edition evaluated usage of the digital currency issued by the Banco Central (the "Real Digital") as well as its technological viability.

2.3. Digital transforming

Finally, digital transforming regards organizational culture, organizational redesign, and management of innovation ecosystems, highlighting the need to improve digital maturity for digital transformation to begin. Such improvement comes from the integration of digital natives in the training of organizations, and there must be a balance between the workforce recruited in the market with the degree of promotions within the institution. The redesign of internal structures is only possible through transformational leadership and decentralization.

Digital transforming is directly associated with digital maturity. According to a study carried out by Deloitte (2022), digital transformation considers business models, connectivity, processes (i.e., focusing on customer experience, automation, and agility), and analytics as valuable assets. However, to absorb the value created by such assets, better management practices are necessary. The digital transformation will start with the integration of technology in all business areas—not just in one sector, as seen in many organizations. As such, digital maturity measures the ability of an organization to create value with technology. For this, certain fundamentals are required: flexible and secure infrastructure, data domain, open and digitally perceptive talent networks, ecosystem engagement, and unified customer experience.

3. A case study in a traditional public bank

Due to the importance of the organizational context within which a digital transformation initiative is pursued, we conducted a case study involving a public bank in Brazil. In our study, we conducted interviews with 359 managers (see interview script in the Appendix). According to Teece (2018) and Nadkarni and Prügl (2021), the adherence of managerial organizational levels to the company's strategies is a determining factor for the formation of the business model, which allows, through this public, the identification of deficiencies and strategic success in the challenges faced. It is worth noting that managers have a crucial role in an organization's ability to realign its structure and culture. Regarding the choice of organization, public banks play a critical role in the economy of countries, as they serve as economic policy instruments and promote economic and social development (Bruck, 1998).

In terms of the respondents' profiles, the average duration of their employment in the company was 18 years. Regarding the positions held by the respondents, the study had the highest participation percentage from managers in the "Information Technology and Innovation Board" and the "Products, Segments, and Digital Channels Board." In terms of age groups, most of the respondents were between 35 and 45 years old.

Regarding dynamic capabilities, based on the interviews conducted, we found that the organization under focus could conduct (i) digital sensing. We also found that *digital scouting* is currently the main subcapability of the organization to react to the advance of new competitors and qualify for an offer via the need for digitalization. Managers believe that the bank actively searches for and explores new technologies and markets and values innovations that come from outside the company. In addition, they mentioned that the organization monitors and comprehends the current and future demands of the market, suppliers, and competitors and that the organization is customer-centric. However, some interviewees mentioned the need for further studies to map out the journey of different user niches.

Digital scenario planning is a subcapability highlighted by the interviewees. According to our findings, the organization possesses tools to identify and segment its target market, as well as prioritize the most appropriate technologies and ways to obtain

them. It also uses information about new technologies and markets for decision-making. However, the interviewees noted that not all potential future scenarios are always considered before making decisions. Managers justified this by citing the complexity that characterizes contemporary organizational environments.

Concerning *digital mindset crafting*, the bank regularly invests in research and development activities to continuously identify new technologies and market opportunities. However, managers claim the following weaknesses: creativity for innovation, the monitoring and development of new technologies internally, and investments and proactive efforts to ensure that there is dialogue and exchange of information in the organization.

Investigating dynamic capabilities, the interviews showed that the capacity for *(ii) digital seizing* is fragile. Specifically, the *digital prototyping subcapability* is underdeveloped in the organization. Although new products, services, and processes are being developed to take advantage of new technological and market opportunities, they are usually reactive. Managers agreed that there is a lack of agility in applying the analyzed information and making decisions. We also found difficulty in open innovation practices, as many interviewees reported that the bank rarely developed products (i.e., platforms) or services with third parties.

In addition, when *balancing digital portfolios*, managers found that the bank rarely sought to learn by exchanging information with other organizations. Although the company incorporates new technologies and production processes, the configuration and reconfiguration of resources and the organizational structure do not always happen assertively and at the necessary speed. Therefore, the subcapability is more often addressed reactively rather than proactively.

We also noticed that the subcapability of strategic agility is an obstacle to digital transformation in the case study. The organization does not have a specific reward and compensation system that encourages innovation and creativity. Managers reported that the remuneration practice had followed the same composition structure for decades. The bank also did not tend to respond quickly to changes in the market. In addition, managers agreed that the brand does not show a great ability to deal with market changes and uncertainty—probably due to it being a public institution.

Finally, regarding *(iii) digital transformation*, we found that internal barriers hinder the development of appropriately associated subcapabilities. Our study revealed that the organization faced challenges in *navigating innovation ecosystems*. Specifically, managers reported that the bank lacked councils or forums that would enable effective integration with other actors. They also recognized that the organization was unable to identify external (i.e., other companies' or organizations') complementary assets. The bank also faced obstacles in identifying partnership opportunities with external organizations and integrating knowledge with these partners.

On a more positive note, there is the subcapability *redesign of internal structures*, meaning the bank currently has specialized assets in its organizational structure for improving digital maturity. Managers found that the bank reconfigured its assets to develop new business models using digital growth strategies. There are also team-based structures that integrate and share internal information between managers and employees.

Regarding the subcapability *improvement of digital maturity*, the interviewees highlighted that the organization has adapted to new technologies, processes, strategies, culture, and structure to meet digital expectations. The organization can also manage, integrate, and develop digital knowledge internally. However, implementing and managing partnerships with external organizations and integrating the benefits obtained into its business are crucial obstacles to overcome.

Via our case study, highlighted in Section 3, we can infer that dynamic capabilities can guide innovation in a traditional financial institution based on the challenges provided by digital transformation. The dynamic capabilities support both product innovation and business process innovation (OECD/Eurostat, 2018). However, there are internal contextual issues that facilitate and others that hinder the process. In the case under analysis, the bureaucracy in the organizational culture delays the process of (ii) digital seizing and hinders the development of subcapabilities in (iii) digital transformation, particularly navigation in innovation ecosystems.

In addition to the external contextual issues listed by Warner and Wäger (2019), we recognize that the political-legal environment plays a crucial role in enabling a public bank to appropriate dynamic capabilities that drive digital transformation. Overall, the political-legal environment should facilitate digital transformation in organizations via government support, laws, and legislation. As such, the internal inhibitors identified in the case study (e.g., slowness and reluctance to interorganizational collaboration) need to be revisited.

4. Insights for digital transformation in traditional banks

Traditional organizations often face obstacles amid the digital transformation process, as they must reassess their business models in the face of the opportunities and threats of the digital context (Marx et al., 2021). Digital transformation needs to be integrated into the company's strategy and other activities (e.g., new product development, operations, finance, and marketing; Guinan et al., 2019). Based on our findings, the framework presented in Figure 2 summarizes how dynamic capabilities guide traditional banks to overcome challenges provided by digital transformation.

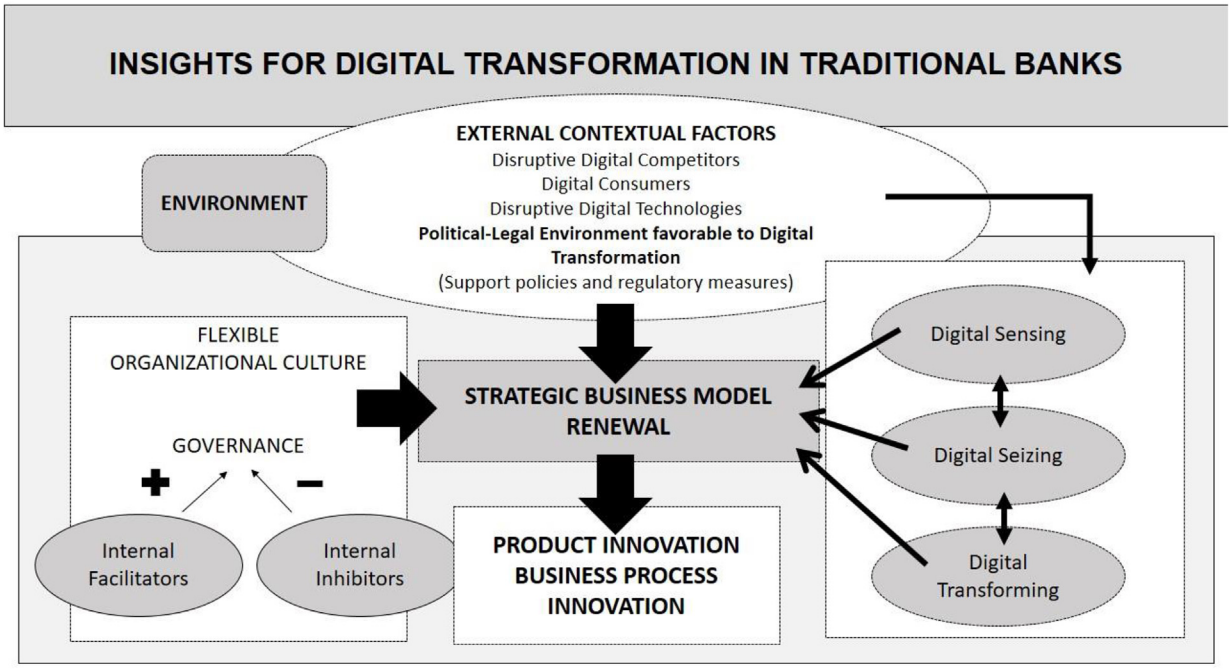
We justify our generalizations for the banking sector given that the financial services sector in Brazil has the greatest digital maturity, being the second best positioned in the world (McKinsey & Company, 2020). Leaders who work in the Brazilian financial sector stand out against other leaders in terms of capabilities, organization, and culture. Currently, initiatives such as Open Finance and Open Insurance further enhance the sector's digital maturity. Digital transformation and digital maturity in Brazil have gained new vitality in recent years regarding the urgency and application of new technologies. Digital strategies are mapped, budgets are directed toward this purpose, and staff is trained (BIP Financial Services, 2023).

Contextual factors are the starting point in the digital transformation process, and analyzing these factors is crucial for the organization's success in the market. In addition to the study carried out by Warner and Wäger (2019)—which lists disruptive digital competitors, digital consumers, and disruptive digital technologies as external triggers—we infer that a political-legal environment favorable to digital transformation in organizations is also fundamental for all financial institutions, public or private.

This involves supportive policies and regulatory measures. Financial and credit subsidies, as well as incentives for innovation ecosystems, are examples of support that can enhance the proactivity for digital transformation in the sector. For example, programs that accelerate patents for digital product innovation can also stimulate digital prototyping subcapability. Rules and codes of conduct, certifications, and punishments for abusive conduct—especially regarding the privacy of bank users—tend to increase consumer confidence and minimize abusive competitive practices.

Likewise, the legal and policy environment should encourage the availability and accessibility of technologies in the market. Given that public policies stimulate not only financial institutions but also other environments (e.g., technology), it is essential to have a legal and institutional basis

Figure 2. Framework for digital transformation in traditional banks



Source: Authors' elaboration (2023)

that supports projects capable of generating innovative solutions—especially those of a technological nature. This requires the creation of public policies that encourage and support this process, with a particular focus on researchers, universities, and research institutions.

Strengthening these actors helps companies develop external collaboration practices that are essential for the success of digital transformation via research activities with third parties, partnerships, and university programs. In Brazil, the LIFT ecosystem—driven by the country's central bank, Banco Central do Brasil (BCB)—promotes practices that lead to such strengthening. More specifically, LIFT Learning, coordinated by the BCB, brings academia and the market closer together to research useful solutions for the national financial system. LIFT Talks promotes a series of lives for the presentation and discussion of topics related to the BCB's innovation initiatives. LIFT Papers is a specialist magazine that publishes results from LIFT projects and specialist articles on innovation. Finally, LIFT Challenges promotes specific annual calls that focus on solutions to a current problem in the sector (BCB, 2022).

Another important aspect for dynamic capabilities to be mobilized to facilitate digital transformation is antecedent strategic issues, such as culture and governance. Flexible organizational culture is a fundamental factor for companies to be able to learn and develop the capabilities necessary for digital transformation. Digital transformation requires a shift in organizational attitudes, as well as adaptations to current political regulations standards (Teichert, 2019). At the same time, an open, collaborative, and sharing culture is key for change (Gupta, 2018). Organizational culture—considered the main obstacle to digital transformation—must be prioritized for proper adaptation to avoid potential bottlenecks in the process.

CEOs of a major Brazilian private bank stated during AWS re: Invent (Ventura, 2022) that the most complicated step is not the implementation of the technology itself but rather changing the organization's culture. In 2020, the bank where the executives worked committed to creating an operation that would work primarily in the cloud and migrate services to the cloud environment after signing a 10-year contract with Amazon Web Services. Today, the Brazilian bank has 45% of its data in the public cloud of the provider, which is an arm of Amazon. However, the executives highlighted that the most complex part was convincing the board that this was a good strategy. To align the organizational culture with the digital transformation strategy, managers found it necessary to actively support leaders at different levels along the journey (i.e., going beyond the C-Level or Founders and reaching managers).

Furthermore, managers must learn to live without isolated units and work in multifunctional, autonomous teams to obtain the best results. Squads—the model adopted by about 70% of the companies that claimed to have already started digital transformation initiatives (MIT Technology Review, 2021)—have been working in the models of Netflix, Spotify, and other large companies that started as startups and can be easily replicated in traditional banks. Finally, one last point that CEOs brought up centers on processes. There are new tools, new processes, and different ways of working in the current context. Motivating the team and making sure that they live the transformation every day is essential, and this can be done via short, daily meetings to share sectorized initiatives.

Governance is a skill that facilitates the integration, elaboration, and reconfiguration of resources among an organization and its stakeholders. Governance enables the system to reorganize itself to develop digital sensing, digital seizing, and digital transforming capabilities. Likewise, it allows the production of objective recommendations to correct inhibiting factors and stimulate facilitating factors. Therefore, the governance ability associated with digital transformation must aim for flexibility, reduction of hierarchies, and anticipation of scenarios. It must also allow for the coordination and promotion of the commitment of cross-functional teams, quick decision-making, and leadership support.

Good governance practices for digital transformation initially demand that CEOs understand the logic behind technology concepts and the impact of their applications on processes, people, products, and customers. Executives need to experience behavioral change. If before it was up to them to give answers to teams and customers, they now must ask questions (Saraiva, 2023b). You do not have to become a tech expert, but you do need to understand the main influences that emerging technologies can bring to the business and how the organization can adjust to the necessary deliveries.

To achieve strategic renewal of the business model, traditional banks should reduce existing bureaucratic dysfunctions that hinder innovation activities and the appropriation of new ideas. Traditional banks should also reorganize their systems to enable business processes and product innovation centered on digital transformation.

According to Gupta (2018), companies must be fast and adopt agile methodologies, new operational processes, new ways of working, and new organizational structures to support their digital vision. They must also prepare employees for the changes. This is because all levels of the organization are affected by digital transformation, which requires commitments to self-learning and organizational training (Neumeyer & Liu, 2021).

Different agile project management methods can be incorporated by banks to reduce bureaucracy. Scrum (Sutherland & Schwaber, 2013), Kanban (Stellman & Greene, 2014), and Design Sprint (Knapp et al., 2016) are possibilities. All the methodologies enable constant delivery of results throughout the project instead of all at once at the end. Organized into short development cycles, they address many business issues—especially unexpected ones. Unlike traditional management practices, agile management allows teams to advance in a general direction, build something up, and reassess the situation, which saves time, frustration, and money.

Finally, considering the complexity of the digital transformation phenomenon (Tekic & Koroteev, 2019), we understand that there are relationships and interrelationships between the subcapabilities of digital sensing, digital seizing, and digital transforming. In this sense, the process involving the dynamic capacities for digital transformation comprises an interrelated whole, and the advancement in one subcapability can help achieve another. Companies must constantly reorganize themselves to learn and reconfigure their capabilities as demands from the competitive and external environments emerge. Mechanisms for scrutinizing and anticipating change, as well as leaders with skills and abilities that lead organizations to digital transformation, are crucial.

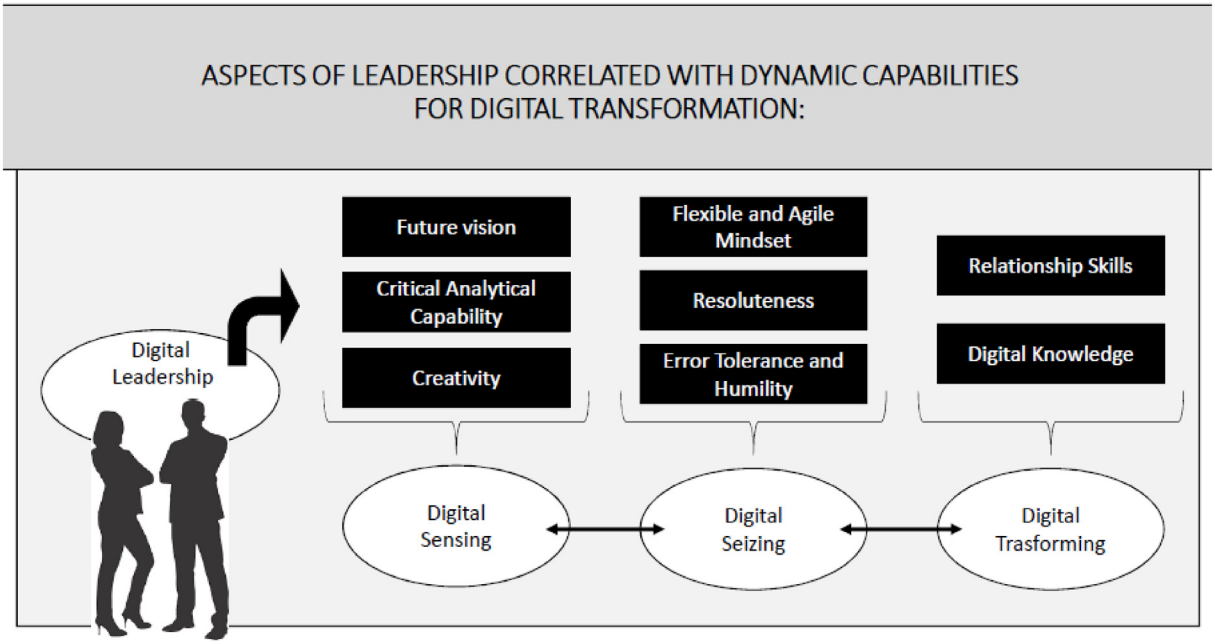
Business leadership is responsible for establishing organizational focus and direction. Digital sensing, digital seizing, and digital transforming require leaders to analyze all complexities related to business strategies, business models, and enterprise platforms. Therefore, having people who think differently is essential. Hill et al. (2022) emphasize that digital leaders must think and act from an outside-in perspective. They must be catalysts, facilitators, explorers, courageous, present, and believe in the organization's values. As described by Ancarani and Di Mauro (2018), to strategically articulate digital transformation, leaders need to possess distinct attitudes. In Figure 3, we summarize aspects of leadership that we believe are correlated with dynamic capabilities for digital transformation.

Digital recognition, digital scenario planning, and the development of a digital mindset (subcapabilities of digital sensing) depend on business leadership with a vision for the future, critical analytical ability, and creativity. Human resources management experts emphasize that business leadership focused on digital transformation must be proactive, understand the logic behind technology concepts, and consider the impact of their applications on processes, people, products, and customers (Paul, 2023). Regarding creativity, the BCB pointed out in a technology event promoted by Febraban (i.e., the Brazilian Federation of Banks) that the creativity of traditional banks falls short of regulators' expectations (Carvalho, 2023). While acknowledging that organizations are highly committed to implementing new regulations, the Central Bank expects more creativity from leaders in planning and delivering new products to consumers.

Rapid prototyping, digital portfolio balancing, and strategic agility (Digital Seizing) require leaders with a flexible and agile mindset who are capable of addressing the challenges of collaboration and teamwork to create and maintain high-performance organizational practices. Flexibility and agility are not an end in and of themselves but are efficient means for developing journeys that bring productivity and value to the team. Permanent connection (whether in-person or virtual), dissemination of strategies throughout the organization, regular review of challenges and goals for correction throughout the process, encouragement of decision-making in quick actions, and nonattachment to what does not work are examples of leadership actions that lead to Digital Seizing (Ciasca, 2022). In line with the propositions of Benitez et al. (2022), we emphasize that, despite the pressure for quick and assertive decisions, tolerance for error and humility are also important characteristics.

Finally, navigating innovation ecosystems, redesigning internal structures, and improving digital maturity (Digital Transforming) requires leaders to be skilled in managing internal and external collaboration relationships. Amidst people, numbers, data, results, technology, agility, and innovation, coordinating dynamics within organizations and the ecosystems they operate in is crucial for managers (PricewaterhouseCoopers, 2022). Digital literacy is also a relevant characteristic for leadership to achieve this capability. According to Robert Half (Almeida, 2023), the most sought-after professional today is the one who can combine soft skills with digital capabilities. For example, a digital transformation leader must understand programming languages.

Figure 3. Leadership correlated with dynamic capabilities for digital transformation



Source: Authors' elaboration (2023)

5. Opportunities for future progress in the topic

In this study, we investigated the use of dynamic capabilities to guide innovation in traditional financial institutions from the challenges provided by digital transformation. Through our research, we identified that external contextual factors—mainly the political and legal environment that encourages digital transformation in companies and ensures accessible technologies exist in the market—are necessary to stimulate dynamic capabilities for digital transformation.

However, internally, there are strategic issues that need to be considered. Cultural change within the organization is necessary for creating a flexible culture that is open to innovation, reducing the bureaucratic dysfunctions that impede agility, experimentation, and delivery of user-centric innovations. The reorganization of the system so that capacities, articulation, and flexibility can be developed depends on good governance practices.

Therefore, we conclude that the digital transformation of traditional banks depends on internal actions by companies and government initiatives. We propose insights for governments and policymakers to expand the stimulus for digital transformation. Likewise, we illustrate some ways to rearrange organizations' strategies, skills, and attitudes for executives who work in traditional organizations in the sector.

From a managerial perspective, our study provides new insights and implications for banks engaged in digital transformation. We believe that by presenting the factors that can be decisive for traditional organizations to appropriate dynamic capabilities, we provide guidance to help companies more effectively deal with the digital transition. From an academic perspective, we advance understanding of the dynamic capabilities theory as a path to support the digital transformation of traditional businesses.

That said, a future step would be to test the propositions of this study, specifically to verify whether banks facilitate and utilize dynamic capabilities based on the mentioned factors. It would also be beneficial for other researchers to explore regional, organizational, and cultural variables that may influence the context of digital transformation in different financial institutions, not just banks. Still, we assume as a limitation of our results the fact that the study was carried out in Brazil.

Acknowledgments

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Appendix. Data collection instrument

Identification
1. How old are you?
2. Since when do you work at the bank?
3. What is your gender?
4. What position/role do you currently have in the organization?
Dynamic capabilities oriented to digital transformation
5. Do you believe that the bank is innovating its business model with a view to digital transformation? Why?
6. On a scale of 1 to 5, with 1 being completely agree and 5 being strongly disagree, please rate the statements below: a) (Digital Scouting) The organization seeks and explores new technologies and markets, valuing innovations created outside the company.
b) (Digital Scouting) The organization identifies and understands the current and future demands of consumers, suppliers, and competitors.
c) (Digital Scouting) The organization directs its efforts with a focus on the customer, showing a deep understanding of their needs.
d) (Digital Scenario Planning) The organization identifies and segments its target market, focusing on the most appropriate technologies and how to obtain them.
e) (Digital Scenario Planning) The organization always considers several possible future scenarios before making decisions.
f) (Digital Scenario Planning) The organization effectively uses information about new technologies and markets for decision making.
g) (Digital Mindset Crafting) The organization constantly invests in research and development activities to continue identifying new technologies and market opportunities.
h) (Digital Mindset Crafting) The organization has the creativity to innovate in the market in which it operates, exploring and monitoring the development of new technologies internally.
i) (Digital Mindset Crafting) The organization constantly invests and makes proactive efforts to ensure that there is dialogue and exchanges of information and experience.
j) (Rapid Prototyping) The organization constantly develops new products, services, or processes to take advantage of new technological and market opportunities.
k) (Rapid Prototyping) The organization prioritizes agility and cost reduction in the application of analyzed information and decisions taken.
l) (Rapid Prototyping) The organization constantly needs products (platforms) or services developed by third parties to complement its own products or services.
m) (Balancing Digital Portfolios) The organization seeks learning through information exchange with other organizations.
n) (Balancing Digital Portfolios) The organization incorporates new technologies and production processes.
o) (Balancing Digital Portfolios) The organization knows how to configure and reconfigure resources and its organizational structure to suit the flow of business change and growth.

(*continued on next page*)

(*continued*)

p) (Strategic Agility) The organization responds quickly to changes in the market in which it operates.

q) (Strategic Agility) The organization demonstrates a great ability to deal with market changes and uncertainty.

r) (Strategic Agility) The organization has a compensation system that encourages innovation and creativity.

s) (Navigating Innovation Ecosystems) The organization have some type of board or forum for onboarding.

t) (Navigating Innovation Ecosystems) The organization constantly identifies partnership opportunities with external organizations, integrating knowledge and know-how with these partners.

u) (Navigating Innovation Ecosystems) The organization can externally identify complementary assets (specialized or cospecialized) in other companies or organizations.

v) (Redesigning Internal Structures) The organization has in its organizational structure specialized assets for improving digital maturity.

w) (Redesigning Internal Structures) The organization can reconfigure its assets to develop new business models, using digital growth strategies.

x) (Redesigning Internal Structures) The organization has team-based structures, integrating and sharing information and internal knowledge between managers and employees.

y) (Improving Digital Maturity) The organization is adapted to new technologies, strategies, processes, culture, and company structure to meet digital expectations.

z) (Improving Digital Maturity) The organization finds it easy to implement and manage partnerships with external organizations, integrating the benefits obtained into its business.

aa) (Improving Digital Maturity) The organization can manage, integrate, and internally develop digital knowledge.

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