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Digital transformation path: How dynamic capabilities further strategic use of information technology benefits through alliances

Jornada da transformação digital: Como as capacidades dinâmicas apoiam o uso estratégico dos benefícios da tecnologia da informação por meio de alianças

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Abstract

Purpose: This article aims to validate a systemic model that helps to understand the contributions of dynamic capabilities to the benefits generated by the strategic use of information technology in alliances between companies.

Originality/value: Digital transformation has evolved in recent years and is present in organizations as an essential initiative in their competitive strategy, requiring them to develop a culture favorable to digital innovation, skills, and competencies for the intense use of these technologies. The value includes theoretical contributions on dynamic capacities and benefits generated for the strategical use of information technology, as practical contributions help companies in digital transformation.

Design/methodology/approach: The research question in this paper is: How do dynamic capabilities support the strategic use of information technology and increase the utilization of its benefits in the context of alliances and digital transformation? A multiple case study was carried out with insurance companies and insurtechs in Brazil. It analyzed the learnings generated in the partnerships and how the insurance companies used this learning to improve their skills, develop dynamic capacities, and strengthen the strategic use of information technology and its benefits.

Findings: The results confirmed that the learning from strategic alliances is assimilated and applied in other dynamic capacities, enhancing the benefits of the strategic use of information technology by improving those aspects.

Keywords: digital transformation, dynamic capabilities, absorptive capacity, strategic use of information technology, strategic alliances

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Resumo

Objetivo: Este artigo visa identificar as contribuições que as capacidades dinâmicas geram no uso estratégico da tecnologia da informação a partir de alianças entre empresas.

Originalidade/valor: A transformação digital tem evoluído nos últimos anos e está presente nas organizações como importante iniciativa para o aproveitamento de oportunidades com o uso intenso de tecnologias de informação, e para a solução de novos e tradicionais desafios competitivos. Entre eles estão a necessidade de desenvolver uma cultura favorável à inovação digital, habilidades e competências para uso intenso dessas tecnologias. O artigo contém contribuições teóricas relevantes sobre capacidades dinâmicas e benefícios gerados pelo uso estratégico de tecnologia de informação; como contribuições práticas que podem ajudar empresas a acelerarem sua jornada para a transformação digital.

Design/metodologia/abordagem: A pergunta de pesquisa deste artigo é: Como as capacidades dinâmicas apoiam o uso estratégico de tecnologia da informação e aumentam o aproveitamento de seus benefícios, no contexto de alianças e transformação digital? Foi realizado um estudo de casos múltiplos exploratórios, com seguradoras e *insurtechs* no Brasil, com experiência em alianças estratégicas. Foram analisados os aprendizados gerados nessas alianças e como as seguradoras se utilizaram deles para aprimorar suas competências, desenvolver capacidades dinâmicas, fortalecendo o uso estratégico da tecnologia da informação e seus benefícios.

Resultados: Os resultados confirmaram o modelo proposto que sugere que o aprendizado gerado no contexto das alianças estratégicas, é assimilado e aplicado em demais capacidades dinâmicas, e potencializam benefícios do uso estratégico de tecnologia de informação como melhoria da experiência do usuário, inovação, agilidade, flexibilidade, e o desenvolvimento de uma cultura digital.

Palavras-chave: transformação digital, capacidades dinâmicas, capacidade de absorção, uso estratégico de tecnologia da informação, alianças estratégicas

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INTRODUCTION

The concept of digital transformation (DT) has matured in recent decades and can be understood as the intense strategic use of information technology (SUIT) in conjunction with other company resources for value creation (Bharadwaj et al., 2013a) and business performance improvement (Westerman et al., 2011). Companies that have advanced in DT's maturity achieve better financial performance (Westerman et al., 2012) and profitability (Hansen & Sia, 2015). However, so important or more important than the financial results, the SUIT also contributes with the development of other benefits, such as innovation, flexibility, agility, better customer experience, and the appearance of digital organizational culture (Albertin & Albertin, 2016; Li et al., 2016; Sia et al., 2016). Although DT results are highly encouraging, organizations face challenges in achieving them that are not restricted to technological resources. One of the main challenges pointed out by executives is to create a culture open to DT and to develop the skills and competencies of their human resources to use the new technological resources available in companies (Kane et al., 2016; McAfee & Welch, 2013; Raskino, 2018).

This dilemma of practice is also reflected in the information systems (IS) literature. Within the resource-based view (RBV), the practical alignment between strategy and IT resources generates a series of higher-order competencies (Nevo & Wade, 2010; Wiengarten et al., 2013), enabling companies to create value and competitive advantage (Barney, 1991), known as dynamic capabilities (DC) (Teece, 2007; Teece et al., 1997). The literature has evolved in understanding DC and its potential to transform the organizational environment strategically (Schilke et al., 2018). However, there are still gaps in understanding how DC can support ongoing DT projects (Vial, 2019). Since theories and models on how to detect, learn, and transform resources (Yeow et al., 2018) require great alignment efforts between executives and their teams (Karpovsky & Galliers, 2015), they still do not answer how to do this in in a practical and systemic way (Levallet & Chan, 2018; Vial 2019).

In this context, the absorptive capacity (ACAP) is beneficial in the IS literature contributing to innovation (Kranz et al., 2016; Trantopoulos et al., 2017) and organizational performance (Iyengar et al., 2015; Zhang, 2017). ACAP is an example of a DC, referring to the capacity for learning, collaboration, adoption, and transformation of company IT resources (Cohen & Levinthal, 1990; Zahra & George, 2002). In other words, organi-

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zations need to develop a learning culture (Kane et al., 2019) to promote DT and develop SUIT benefits. Therefore, ACAP can be an extremely strategic DC in increasingly competitive and dynamic environments.

Large companies are finding an alternative to circumvent the challenge of improving and aligning their resources with the same speed of change in the market: to create strategic alliances with smaller companies and startups. For example, in the financial industry, fintechs are revolutionizing the market worldwide with digital platforms and innovative services that transform and create new business models (Gomber et al., 2018). And in the insurance segment, this has been no different. The number of insurtechs (insurance fintech) in Brazil jumped from 70 to 210 in the last three years (Wolf & Lima, 2019), while investments in fintech increased five times to R$ 2.54 billion in the same period (Prado, 2019). This movement also draws the attention of investors in more than 61 countries, with an invested capital of US $ 19.5 billion (Gomber et al., 2018). In this scenario, major insurance companies are acquiring or forming alliances with FinTech to support their DT journey. Alliances seem efficient, as they promote more learning flow than simple market transactions (Ravichandran & Giura, 2019), and their systemic use can increase the ACAP of organizations.

Consequently, this paper aims to answer the following question of research: How do dynamic capabilities support the strategic use of information technology and increase the utilization of its benefits in the context of alliances and digital transformation? The main objective is to identify the contributions that the dynamic capabilities generate in the strategic use of information technology from alliances between companies. For this purpose, we analyzed the learnings generated in the partnerships and how the insurance companies used this learning to improve their skills, develop DC, and strengthen the SUIT and its benefits.

The IS literature on ACAP, DC, and SUIT is extensive. However, the empirical relationship between these constructs has limited or no exploration (Iyengar et al., 2015). Few studies have also analyzed the role of technology in creating value in strategic alliances (Ravichandran & Giura, 2019). Consequently, this paper contributes to the literature on dynamic capability and strategic use of IT, as it allowed a systemic understanding of how alliances support SUIT through DC. Alliances are an essential strategic resource because they allow DC and competitive advantage through ACAP when aligned with SUIT guidelines. The recursive alliance cycles, the development of a favorable culture, and the involvement of the leaders allow the company to adjust the SUIT to accelerate its DT journey. This paper also

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offers practical contributions, presenting IT and business executives with a systemic view on using strategic alliances as a resource to improve SUIT and consequently promote DT.

We divided this paper into the following sections: the theoretical background will present the main concepts of the four constructs and the relationships among them addressed by the literature. The following are the methodology, analysis, and discussions of the study of multiple cases, which will be the basis of the empirical analysis of this paper to answer the research question and meet the proposed objective. We provided conclusions in the last section.

THEORETICAL BACKGROUND

The strategic use of information technology

The SUIT is a critical factor for business success because of its potential to generate value when integrated into the organization's strategies (Albertin & Albertin, 2016). The first literary models on the SUIT considered the IT and business strategies as two separate constructs. Each responded to the threat or opportunity from the organization's external environment (Henderson & Venkatraman, 1993). However, the ubiquity of technology inside organizations has brought a new orientation centered on the strategic value of the structural resources of IT (Carr, 2003), which is diffusing among the diverse resources of the organization. Technology became valued by the potential of transformation in the company's other resources, for example, the embrace of digital innovation to achieve something new, different, and better, generating value for society and companies (Albertin & Albertin, 2021; Svahn et al., 2017), which allows to consider the intense SUIT and maximum utilization benefits. This new perspective can be seen as a way to enhance a firm's resources and capabilities, potentially leading to a sustainable competitive advantage through four fundamental attributes: generating value, being rare, imperfectly imitable, and non-substitutable (VRIN). This new strategic approach, based on the resource-based view (RBV) concept, recognizes the company's capability to get a competitive differential through the effectiveness and efficiency of its abilities (Barney, 1991). In addition to that, build value assets that can converge strategic directions such as low cost and differentiation. Digital transformation refers to the SUIT to fundamentally change how a business operates and delivers value.

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This digitalization process also made the external environment more dynamic and competitive, transforming organizations and value chains and demanding active answers from companies for a new digital environment (Sambamurthy & Zmud, 2017). Digitalization has reached the core of banks' business models in the financial sector: the digital conversion of money and all cash-related functions (Sia et al., 2016). Many banks struggle to respond to these DT threats, overwhelmed by complex processes, rigid IT legacy systems, and low ability to experience digital innovations (Sia et al., 2016). In this new context, the SUIT assumes a central role in value generation and competitive advantages. Its fusing with the business-oriented strategies becomes something basic, what Bharadwaj et al. (2013a) defined as a digital business strategy (DBS).

Although the literature on the SUIT, or DBS, is extensive, it discloses little about how insurance companies, including banks, can make a systemic transition for the DT (Sia et al., 2016). However, they all converge on the strategic value of IT resources' benefits in business performance (Albertin & Albertin, 2016; Carr, 2003; Hess et al., 2016; Mithas et al., 2013). Although there is a concern on the part of companies in gaining productivity, profitability, and value for the consumer through the use of IT (Albertin & Albertin, 2016), empirical studies reveal that investments in benefits that also promote quality and are associated with strategies in other areas (for example, marketing and operations) create relevant competitive differentials (Mithas & Rust, 2016). The main benefits of the SUIT identified in recent literature were:

- *The customer experience*: The new business models of FinTech have forced companies to be more centered on the consumer, offering the users a more efficient grouping of digital services (Gomber et al., 2018). For this reason, the continuous focus on customer needs requires research and an analytical capacity for digital information (Sia et al., 2016). Studies indicate that companies in the financial sector with a strategic orientation of innovation in services increase their capability to generate digital information, improving customer relationships and organizational performance (Chuang & Lin, 2017). The philosophy of connection with the customer is the key to getting a competitive advantage in financial services, which depends on a construction based on confidence and long term (Xu et al., 2016). Therefore, a strategic direction focused on the *user experience* and *innovation* can create a virtuous cycle of knowledge and improvements that converge in customer's quality perception and satisfaction when exceeding their expectations (Albertin & Albertin, 2016).

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- *Innovation*: Disruptive innovation is a peripheral and slow process of change in the market through companies who take care of a latent necessity of low-end or unserved customers (Christensen et al., 2015). The financial sector's disruptive innovation is extreme since the FinTechs managed to change all these patterns in the same market movement through SUIT (Gomber et al., 2018; Sia et al., 2016). However, as customer-centered opportunities drive digital business models, they constantly evolve, requiring companies to pay attention to their value architecture (Keen & Williams, 2013). Therefore, innovation through the DT is not only limited to products and services but also to exploring different markets, expanding digital boundaries, and making connections in the company's portfolio (Bharadwaj et al., 2013b). So, the big challenge is to create an innovation sources ecosystem that allows companies to identify, assimilate, and explore opportunities. This innovation can be made through internal initiatives, such as programs for sharing ideas among collaborators (*crowdsourcing*), or external sources, such as the search for strategic alliances in acceleration programs with *startups* and partnerships with suppliers of IT (Sia et al., 2016).
- *Flexibility*: Flexibility tries to solve three primary DT challenges. The first refers to the great legacies of systems and processes, which create operational rigidity in large companies such as banks and insurance companies (Sia et al., 2016). The second is that the competitive advantage sources in the digital economy are moving away from large systems and towards micro-applications on digitally interconnected platforms (Grover & Kohli, 2013). Finally, this new market ecosystem comprises customers, suppliers, and technological and business partners with different levels of complexity, such as startups. This demands an interoperability strategy between different IS, several data formats, and technological platforms that support interconnections, such as service-oriented architectures and *cloud computing* (Markus & Loebbecke, 2013). Li et al. (2016) highlight the importance of approaching the business IT teams to 1. drive an alignment among business necessities and technological challenges and 2. modularize the business processes and rely on *plug-and-play* capabilities for optimal linkage between digital assets. In addition to *flexibility*, this alignment of IT solutions to the specifications of internal and external customers allows for a gain in productivity since it improves resource efficiency in the processes (Albertin & Albertin, 2016).
- *Agility*: agility is practically a commercial imperative in highly dynamic markets and constant technological changes. Therefore, it allows organi-

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zations to capture digitalization's value (Sia et al., 2016). The literature defines it as an organization's capacity to feel and respond quickly to environmental changes, taking advantage of new opportunities (Chan et al., 2019). Therefore, it is imperative to identify factors that improve the agility and speed of the SUIT. One of the main factors is the innovation capacity to assemble a set of IT and non-IT resources to create and bring new products and services to the market, allowing the companies to measure new initiatives effectively and take advantage of the assets used in the main activities (Ravichandran, 2018). The second deals with the possibility of complementing these resources and abilities with other partners through strategic alliances (Gulati, 1998), including IT companies that speed up the digital journey (Sia et al., 2016). Beyond the correspondence of resources, strategic alliances allow companies to test and try hypotheses of businesses and startups. These factors also improve the speed of decision-making by leaders, who are more oriented to factual information based on *analytics* (Bharadwaj et al., 2013b). The information presents a great potential to create value by analyzing the immense volume of data (*Analytics*) produced in this new digital era (Chen et al., 2015).

- *Digital culture*: The speed of the changes and the abundance of new information, new technologies, and new relations with companies of the digital ecosystem demand from the leaders the capacity of assimilation, adaptation, and resilience (Bennis, 2013). Being open to the new does not mean adopting all innovation; it means believing in the transformation of technology to lead and manage (Bennis, 2013). In addition, it promotes a culture that tolerates imperfections and methodologies that stimulate experimentation in the search for opportunities (Haffke et al., 2017; Ravichandran, 2018). Besides that, the involvement of intermediate leaders is necessary to mobilize the change agenda and the sharing of innovations (Sia et al., 2016). To that effect, it is essential to establish a clear vision of the strategic value of digital initiatives, developing the ability to identify trends, business opportunities, technological importance, prioritization, and agility in implementation (Li et al., 2016). Another excellent principle of the digital culture is to promote organizational learning and the collaborative view. The continuous creation of knowledge facilitates the transformation of the existing corporate culture and helps professionals identify different opportunities and risks (Kranz et al., 2016; Yang et al., 2017). On the other hand, the collaborative view allows for the exchange of knowledge, evidence-based improvi-

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sation, and, consequently, a cycle of continuous improvement (Chen et al., 2015; Eden et al., 2019). This process involves the work relations and the adequacy of the proper organizational environment (Dery et al., 2017).

Developing these addressed skills is a complex process since it generates cultural conflicts (Haffke et al., 2017) and requires organizational ambidexterity to reconcile divergences in the development of new competencies (Chan et al., 2019). Teece et al. (1997) offer a way to develop these abilities, emphasizing the organization's capacity to manage resource adaptation, integration, and reconfiguration dynamically. Therefore, the DC is an additional resource to the SUIT in developing the abilities addressed.

Dynamic capabilities

A strategic perspective of RBV built the concept of DC, where the practical alignment between organizational resources generates a series of competencies of a higher order that enable companies to create value and competitive advantage (Teece et al., 1997). This concept is widely explored in the IS literature as an efficient approach to understand how companies respond to the uncertain, dynamic, and constantly changing environment. IT investment efforts and their strategic potential vary according to the competitive environment's turbulence, concentration, and growth (Mithas et al., 2013). Soon, the company's SUIT will vary according to its awareness and responsiveness to the competitive environment (Mithas et al., 2013). IT resources strategically aligned with other organizational resources lead to creating new high-order capabilities that can generate competitive advantage (Wiengarten et al., 2013). Wiengarten (2013) also argues that the competencies and skills of organizational learning expand the IT-enabled resources, improving the potential for competitive advantages and creating a virtuous cycle. These reinforce the idea that the strategic way they are used is more important than IT assets (Nevo & Wade, 2010).

Several empirical studies have been carried out to confirm these arguments (Battleson et al., 2016; Chan et al., 2019; Chen et al., 2015; Karimi & Walter, 2015; Tan et al., 2015; Yang et al., 2017). However, before understanding the results of the DC, it is necessary to know how they are developed. The DC development process is conceptualized in the literature by three groups of activities (Teece, 2007):

1. Identify opportunities and threats from the internal and external environment.

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2. Evaluate and learn how to shape these opportunities, mobilizing resources to generate value.
3. Transform the business by improving, combining, protecting, and reconfiguring resources.

The process of identifying and evaluating opportunities and threats necessarily involves the capacity of organizational learning, effectively combining acquired knowledge and external knowledge to solve dynamic challenges. This process also includes learning between companies, relationships with suppliers, and the concept of open innovation practices (Teece, 2007; Teece et al., 1997). To understand the transformation process, Teece (2007) decomposes DC into micro-foundations to dynamically define skills and practices used to align resources. According to the author, micro-foundations generate flexibility, collaboration, ambidexterity of capacities, organizational learning, and corporate governance, allowing resource transformation.

Understanding the activities that involve the DC is relevant. It recognizes that these activities are continuous and that at the end of each resource transformation, they create a new reality that will have internal and external effects on the organization. These effects act systemically and may affect other competencies or organizational resources indirectly (Teece, 2018). Schilke et al. (2018) reinforce that it is essential to contextualize the empirical study of DC with a certain precision in defining and measuring specific instances of resources.

Another point to consider regarding DC is recognizing that the systemic effect of the DC precedes, moderates, and influences people's behavior, and that is necessary to emphasize the enterprising process and less DC routine (Schilke et al., 2018). Thus, it is essential to highlight the relevance of the role of individuals in the DC generation process, especially regarding leadership. Teece (2012, p. 1398) argued that "top management's entrepreneurial and leadership skills around sensing, seizing, and transforming are required to sustain dynamic capabilities". Studies empirically indicate that this argument is valid (Yang et al., 2017; Yeow et al., 2018) and that the leader has to master skills and competencies linked to four guidelines in the resource alignment process: strategic vision, the vision of technological transformation, business vision, and process vision (Li et al., 2016). Recognizing the role of individuals and leadership, the systemic reflexes, and defining the context of DC, companies can create a strategy oriented to DC in a more integrated way, which can improve business performance (Teece, 2018).

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The business performance results generated by the DC are diverse and vary according to the defined strategic objective. Researchers have identified several significant gains in operational efficiency due to improved information processing capacity, learning mechanisms, sharing culture, and strategic resource allocation (Battleson et al., 2016; Chen et al., 2015; Yang et al., 2017). Other studies explore the transformation of business models through the combination of digital platforms and the ability to generate knowledge and develop new products (Karimi & Walter, 2015).

DC also makes it possible to improve the customer experience through innovation. Startups and small and medium-sized companies have a greater capacity to innovate through the flexibility of their resources, the agility in reorganizing them appropriately to their objectives, and the constant organizational learning generated through experimentation and risk propensity (Chan et al., 2019). However, agility and innovation are not exclusive to small businesses. During the development of Alibaba's two-sided network platform, the ability to use efficient content management for users and to constantly add innovative services and financial resources created value for the entire network (suppliers, customers, and intermediaries) and contributed to the formation of this global e-commerce giant (Tan et al., 2015).

Although DC generates different results, in all these examples, there is a constant presence of organizational learning as a precursor (Battleson et al., 2016; Karimi & Walter, 2015; Yang et al., 2017), moderator (Tan et al., 2015), or product (Chan et al., 2019; Chen et al., 2015) of the DC. In a seminal article, Cohen and Levinthal (1990) define absorptive capacity (ACAP) as the individual's ability to identify and recognize the value of new external information, assimilate it, and apply it for commercial purposes. Organizational learning enables innovation, just as ACAP enables the creation of competitive advantages (Cohen & Levinthal, 1990). The more a company is exposed to external information, the greater its ACAP (Zahra & George, 2002). In the DT context, external paths for the development of ACAP are strategic and enable process innovation (Trantopoulos et al., 2017). The consequences of the DC can include ACAP, as new resources based on the knowledge or operational routines improved by the DC (Schilke et al., 2018).

Strategic alliances

Alliances are a learning mechanism that comprises voluntary agreements between two or more companies regarding exchanging, sharing, or

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developing products, technologies, or services (Gulati, 1998). According to Gulati (1998), the three main motivations for forming alliances are developing strategies that improve their competitive position in the sector, decreasing transaction costs, and organizational learning. Among these three strands and their various opportunities, the literature identifies organizational learning as one of the main motivations for forming alliances (Kale et al., 2000). They are an attractive mechanism for transferring knowledge, as the voluntary and reciprocal agreement tends to lower the sharing barriers (Ravichandran & Giura, 2019). Although there has been a long debate in the literature about this organizational learning capacity, empirical studies claim that strategic alliances promote greater knowledge flows (Chen, 2004; Lyles & Salk, 2007; Ravichandran & Giura, 2019; Wang & Zajac, 2007).

There are three types of knowledge explored in the literature, whose organizational learning from strategic alliances offers. The most mentioned in the literature is the learning that essentially involves accessing and internalizing some critical information, capabilities, or skills of the partner (Kale et al., 2000). The second type refers to the knowledge that alliance partners "learn" when managing the collaboration process and work better with each other as their relationship evolves (Kale et al., 2000). Finally, the third type of knowledge is the capacity that companies develop to learn to create more value in strategic alliances, as they accumulate experience in previous partnerships, called alliance capability (Anand & Khanna, 2000). The more partnerships a company grows, the greater its ability to learn through alliances. Perhaps this is why some of the most innovative companies in the world have been forming an increasing number of partnerships (Ravichandran & Giura, 2019), even with all these internal and external challenges in generating a positive result of organizational learning.

Proposed model

The theoretical basis that resulted in the development of the proposed model of this paper, presented in Figure 1, suggested that strategic alliances can be a means of generating learning outcomes (absorptive capacity) that, in turn, allow organizations at a first level to identify opportunities and threats (represented in Figure 1 as P1); assimilating strategic insights, reorganization of its resources and organizational skills to transform the business (dynamic capabilities). When the organization is exposed to the external knowledge provided by the alliances, it may increase its ACAP (Zahra & George, 2002). These insights allow the company to apply this knowledge

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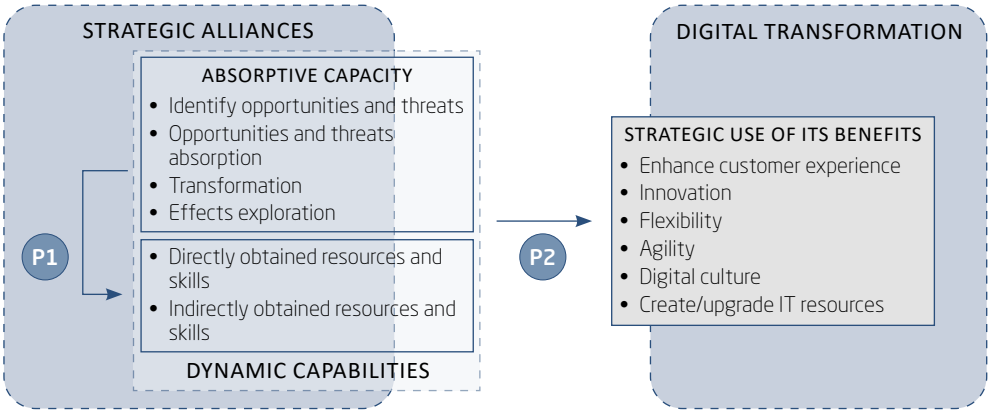
through micro-foundations of the organization's dynamic resources and abilities, generating outcomes such as flexibility, agility, innovation, ambidexterity, and innovations in organizational processes (Kranz et al., 2016; Teece, 2007; Trantopoulos et al., 2017). In other words, besides the first-order functional skills a company internalizes through the ACAP, this knowledge can intervene with different capabilities of a superior order of indirect form (Teece, 2018).

Figure 1

Model of the relation between strategic alliances, dynamic capabilities, and benefits of the strategic use of information technology for the digital transformation



These new abilities are the basis for increasing the generation and exploitation of the SUIT benefits (represented in Figure 1 as P2) and contribute to the DT's accomplishment. Understanding how the company leverages these benefits through its leaders is essential to achieving the full strategic potential of technology.

Through the suggested analysis of the relationships between the concepts presented, we can define two propositions about the systemic view of Figure 1:

- Proposition 1 (P1): The learning generated in the strategic alliances is assimilated and applied in other dynamic capabilities through the absorptive capacity.
- Proposition 2 (P2): Dynamic capabilities and learning in alliances enhance the benefits of the strategic use of information technology.

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STUDY OF CASE

Methodology and data collection

To explore the relationship between the addressed concepts, the type of research developed as an exploratory study (Cooper & Schindler, 2016), and to guarantee the quality and trustworthiness of the analyses, the guidelines and protocols suggested by Yin (2014) and Paré (2004) were followed. The qualitative research technique was applied in a multiple case study, investigating two organizations with different innovation projects as a unit of analysis to guarantee a minimum replication of incremental learning (Paré, 2004) and validate the propositions suggested in the theoretical foundation through a literal or theoretical replication of the analysis (Yin, 2014).

Case studies of companies with different cultural profiles were selected, reflecting two primary business models of the companies involved in the insurance market DT: innovation and efficiency in distribution. We also asked the selected insurance companies to indicate a partner company whose strategic alliance had generated a learning cycle with sufficient data for an accurate analysis. As required by the participants, we will use identification titles to maintain confidentiality about the cases.

Data collection took place initially through the screening protocol of the companies selected and interviewed. We decided to conduct a qualitative, semi-structured, and individual interview format. The choice of the amount and the profile of the interviewed had as a criterion people who had experienced either most of it or all the cycle of a project developed in alliance to guarantee accurate and extensive memories, descriptions that emphasized the following experiences: 1. active participation in the strategic decision on the alliance's formation; 2. vision over the resources and organizational processes in the project; 3. knowledge on the skills and developed capabilities; 4. an understanding of shared learning and results; 5. perception on applying this knowledge; and 6. participation in future operational and strategic decisions.

We requested people from the business and IT teams to contrast and enrich different perceptions of the case. Also, to guarantee the triangulation, the management and executive level of the same area interviewees were requested to supply an ample understanding of the strategic vision, the operational implications, the leadership paper, and the involved teams' perception. Table 1 supplies the profile of each interviewed. All the interviews were conducted face-to-face between December 2019 and January 2020. We

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used electronic records and news retrieved from the Internet to confirm facts told by the interviewees.

Table 1

List of interviewees

Interviewed	Company	Level of Performance	Date	Duration
SSA	Insurance Company Ativa	Superintendent of Systems	01/07/2019	00:38:56
GDA	Insurance Company Ativa	R&D and Digital Manager	12/19/2019	00:43:33
CF	Company C	Cofounder	01/07/2019	00:44:16
PDF	Insurance Company Conecta	Chief Product Officer	12/30/2019	00:31:07
GPB	Insurance Company Conecta	Product Manager	12/30/2019	00:25:57
SSB	Insurance Company Conecta	Systems Superintendent	12/30/2019	00:49:59
GSB	Insurance Company Conecta	Systems Manager	12/30/2019	00:44:29
SD	Company D	Member Executive Director	01/10/2019	00:41:04

The treatment and analysis of data collected from the interviews and the electronic registers followed Bardin's (2016) method of analyzing the content. The proposals served as a basis for creating the interview script, data collection plan, and, consequently, analytical priorities (Yin, 2014). Theoretical relationships and constructs facilitated categorization and the creation of codes (indicators) to classify content. ATLAS.ti, the software from CAQDAS (computer-assisted quantitative data analysis software), was used to support the content analysis. This process then allowed the analysis of quantitative operations to measure the incidence and statistical frequency of the codes, which indicated the presence, absence, and intensity of the attributes in the context of the cases. The analytical model analysis technique (Yin, 2014) was used to synthesize, interpret, and infer the relationships between features.

Ativa case

The Ativa insurance company is a publicly traded Brazilian company with more than 50 years of existence, 10,000 employees, and annual revenue exceeding R$ 10 billion in the insurance segment in 2018 (Sincor–SP, 2019). Ativa was selected because it is among Brazil's ten most prominent insurance companies. They invest a lot in innovation. They started a struc-

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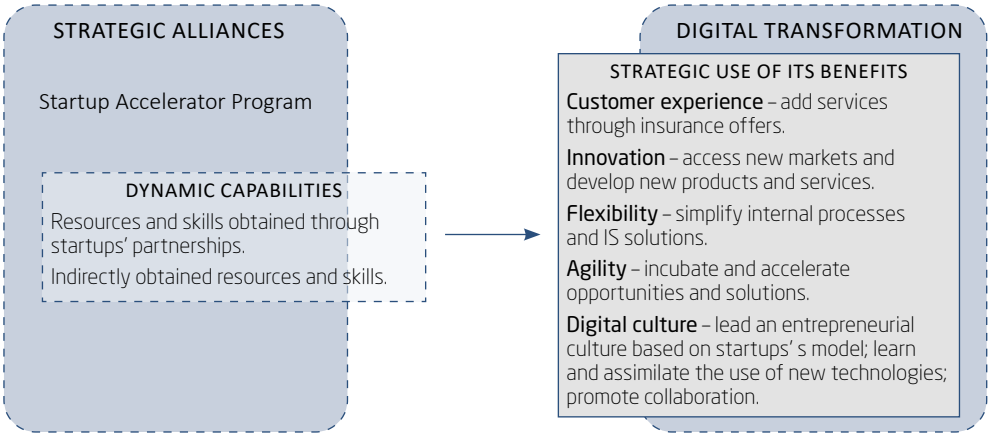
tured learning relationship with fintech four years ago by creating a *startup accelerator* focused on developing new products and services. The program has complete autonomy over resources and governance of alliances. It is already in a mature phase due to the accumulated experience in developing more than forty partnerships. Company C, appointed by Ativa, is a startup with only three years of existence that uses artificial intelligence (AI) for the electronic identification of vehicles in motion and is focused on security services.

It was identified as a tremendous strategic motivation of the Startup Accelerator program, the need to react to market threats due to the movement of DT that was formed in the sector, driven by new disruptive technologies, and strengthened with the appearance of insurtechs. The objective was to develop benefits enabled by SUIT, represented in Figure 2, and "oxygenate Ativa, [...] with this culture of entrepreneurship, that is, a culture of doing it quickly, make mistakes quickly, correct them quickly, and deliver them quickly" (GDA). Regarding the strategic motivation of startups, we observed that in addition to the interest in financial resources that make the venture feasible, they target intangible assets related to organizational learning and the network of contacts that the partner offers to scale the business in an agile and fast way.

Figure 2

Model applied in the case study of the insurance company Ativa



The program model was based on technology companies from Silicon Valley and "tropicalized" (GDA) for local culture. The projects last between 2 and 6 months, and they tested solutions that feature complimentary

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resources and "some synergy with the services and products [offered by] Ativa" (GDA). Company C was one of them. The project's initial objective was to locate stolen vehicles using software installed on cameras that use AI to read license plates. The cost and operational complexity made the project unfeasible, but the entrepreneurs found a new potential market, offering the technology as a support tool for security companies.

The search for innovation and user experience improvement, both "for new business or already existing business innovations" (SSA), was mentioned as the primary opportunity to accelerate the Ativa company's digital journey. However, the most cited examples were innovations related to internal processes, making the business more flexible and streamlined. Thus, it was possible to identify that Ativa has an interest in accessing new technologies, such as micro-applications and systems interoperability solutions, as well as learning how to use these technologies in other contexts to overcome the challenges of flexibility, agility, and connectivity (Chan et al., 2019; Markus & Loebbecke, 2013):

> We also want to access different solutions we don't normally access. Usually, a company like Ativa is invariably approached for solutions that great companies offer, such as SalesForce SAP. Then, you may not see on your minor radar things that can solve specific problems for you. (GDA)
>
> We are talking a lot about DevOps. People have learned a lot about the container from startups. They are born using the cloud, for example. They are born multi-cloud because it is a feature of [their] products. […] And we learned a lot from him along the way. [...] They come with a business proposal, but there is a technology that we learn from them behind it. (SSA)

The Ativa program of acceleration has been used as a catalyst of organizational learning to identify chances, assimilation, and transformation of resources and processes that contribute to the development of abilities directed by the SUIT. The results of the projects presented, and the evidence reported indicate that the program successfully generated first-rate results. First-order learning outcomes are analogous to functional competencies, such as improvements in organizational effectiveness and efficiency (Iyengar et al., 2015). The program brought several innovative and digital solutions that made vehicle rental services feasible and flexible and digitalized the customer registration processes, agility in the service of automotive centers,

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improvement of employees' experience with medical appointments, and a cultural change favorable to the SUIT.

However, there is also evidence of the development of higher-order results, defined as dynamic capabilities, which allow the company to dynamically and strategically adjust organizational resources to promote DT (Teece, 2007; Teece et al., 1997). The absorptive capacity used in the acceleration program to assimilate opportunities and transform them into new solutions is one of these DCs, as it speeds up the company's response to the planned SUIT:

> I would say to you like this: it's not that she [startup] transforms the strategy, but I think it contributes to the system. Here at IT, for example, we have strategic objectives and are looking for new technologies. […] and, for example, Analytics. [...] The startup does not change that. But it contributes to the maturation of this. It contributes with inputs for us to learn, for us to evolve, and for us to speed up the execution or implementation of the strategy that has been defined. (SSA)

Another executive also echoed this perception about startups' relevance in the stages of assimilation and transformation of opportunities: "startups help us to do these tests too, to know if that hypothesis is valid or not" (GDA).

The knowledge assimilated in the acceleration program did not improve only the absorption of new technologies or the development of new products and services. However, there was an improvement in leaders' skills, the adoption of risks, failure, acceptance, and sharing learning. This improvement generates a DC that brings agility to the solution of other company challenges, as occurred with the adoption of agile methods for the development of internal solutions. The consequences of the DC can include learning results, such as new resources based on the knowledge or operational routines improved by the DC (Schilke et al., 2018). The interviewed startup also echoed *this process*. The learnings of the acceleration program allowed Company C to gain maturity in the development of projects. This learning permitted the assimilation of opportunities in new markets and allowed a reorganization of its resources to develop new business models that serve these different markets.

The company's third gain came from the development of its alliance capability, where companies learned to create more value as they accumulated experience in previous alliances (Anand & Khanna, 2000). It is noticed

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that some factors, such as the independent structure dedicated to the project, the strategic alignment of the program with the company's SUIT, the continuous learning of acceleration cycles, and cultural change, allowed an improvement in the assimilation of knowledge throughout the program. One of them occurred in the selection process: "[...] we have some perceptions that maturity within the process has brought us, which completely help us change the evaluation cycle [of startups]" (GDA).

The others are changing the shape of the alliances to come closer to the more prominent startups, assimilation of opportunities in other areas that made it possible to redirect ongoing projects, and even the indication of startups that were not selected in the acceleration program for different areas with latent needs.

Conecta case

The Insurance Company Conecta is one of the five biggest patrimonial insurance companies globally and has operated in Brazil for over 20 years. It has about 2 thousand employees, annual sales exceeding R$ 3 billion (Sincor–SP, 2019), and is among the 15 largest companies in the segment. We selected Conecta due to it is a pioneer and is recognized in the market today for offering technology applications for systemic integrations of insurance distribution. In countries with a more mature insurance market, where insurance distribution is self-regulated, the company acts as an "invisible insurance company" (SSB). "The company Conecta provides several APIs [Application Programming Interface], and a [insurance] broker, or agent [representative], or a startup connects to these APIs to sell insurance or create a new insurance" (SSB). This project allows brokers, such as Company D, a small family business with more than 25 years of experience in the insurance market, to launch products with digital distribution jointly.

The project identified the opportunities that arose in the sector's DT movement, accelerated by the growth of electronic commerce, demanding systemic integrations with new digital banks, insurtechs, and brokers as a tremendous strategic motivation. The main direction of the projects was to bring flexibility, benefits, and agility to the business, as shown in Figure 3, which establishes a relationship with propositions 1 and 2 of this paper. The proposed solution was the creation of APIs that would allow rapid systemic integration between Conecta and its partners, generating a better experience in the calculation and agility in the sale of insurance. "We started in the sales line. So practically everything that is born from sale at Conecta is already

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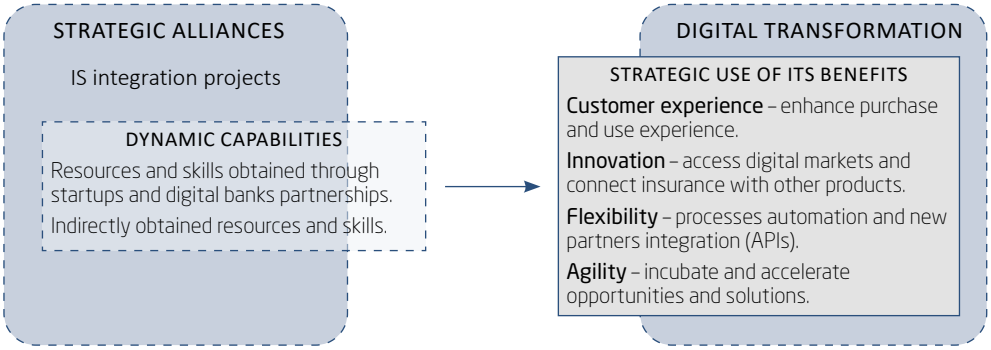
born with API, and everything that has a legacy we are migrating and creating new services" (SSB).

Figure 3

Model applied in the study case of insurance company Conecta



The first demands had appeared with a necessity of integration with digital bank platforms. "Being on a digital platform requires some situations like being agile, fast, and faster returns" (DPB). The integration with Banco Digital was one of the company's precursor projects, and because it involved several products, it brought several benefits, such as agility and flexibility. The main thing was using modular resources in developing the APIs to streamline and make the development of the following solutions more flexible: "I have a [single API] with some variations when changing insurance. That makes it easier: the bike will fit in the automobile. Then it develops [based on the automobile API] and connects in the calculation system" (SSB).

Conecta also started to map the insurance market for all software companies that used integrations via robotic process automation (RPA) to offer integrations via APIs. This interconnectivity with other platforms was a strategy of the insurance company to adapt to the new digital business ecosystem with service-oriented architectures (Markus & Loebbecke, 2013) and offer these benefits to your partners. They also allow an approximation of the business and IT areas to modularize business processes with *plug-and-play features* (Li et al., 2016). This perception echoed in other interviewees:

> [...] everything comes through web services and multi-calculation. Most quotations are no longer [made] by the website. Because it facilitates the daily life, the life of the broker, the life of the providers, and the partnerships we make (GSB).

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In addition to the possibility of scaling and cultivating a distribution ecosystem, APIs have excellent innovation potential. They allow the free development of partners, which expand the limits of services and products offered by the insurance company and can transform the business beyond the current configurations (Ghazawneh & Henfridsson, 2013). This interconnected platform was named "invisible insurance company, which is the business of Conecta in other channels, which can be banks. This is what we are doing a lot now, more [than] any other insurance sales channel" (SSB).

The online insurance sales website for interns, created by Company D during the integration with Conecta, is an example of this transformation of platforms. When the project started, the integration available by the insurance company was just calculation and sales APIs. During approval, Company D identified a need to offer policies automatically to consumers. Conecta had to adapt this automation to improve policyholders' experience, and the project's success stimulated Company D to innovate with other products: "today we serve companies with other products, who liked the service we offer for the product that they acquired digitally" (SD).

These innovations in financial products have disruptive potential as they are not limited only to new products and services but also to customer service processes, service customization, and new business models (Gomber et al., 2018; Sia et al., 2016). Even with these changes, we did not observe the role of digital culture as the SUIT guideline in this case. On the contrary, we identified that Conecta had a more reactive than proactive stance toward opportunities at the beginning. The insurance company only met specific demands brought by partners. The integration projects carried out by Conecta reached the SUIT guidelines for developing agility, flexibility, innovation, and improving the user experience in the insurance calculation and contracting process. Even with a digital culture still in the making, the examples and evidence presented indicate the absorptive capacity of Conecta and Company D in transforming resources and skills that have improved business performance.

It was also possible to identify that these partnerships provided important insights for both companies to develop dynamic capabilities and generate competitive advantages through the SUIT and strategic alliances. Because the learning between companies and the relationship between suppliers favors *open innovation* (Teece, 2007), brokers, banks, and insurtechs can help improve Conecta's IT resources and jointly create new digital solutions. As an example, the role of leaders in using the knowledge assimilated in sales integrations to develop new APIs for the integration of other company processes to offer more agility and flexibility to partners: "What is coming now

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are new businesses, which are born from the exploitation of APIs. The second step we understand is that insurance companies' management systems will be much more interconnected than they are today" (SSB).

This evidence reinforces the literature's argument that through learning and the leader's performance, companies can create a more integrated strategy oriented towards DC, which can improve business performance (Teece, 2018). In addition, the company intends to use its integration platform to provide an environment more favorable to innovation through the development of solutions for current partners (Ghazawneh & Henfridsson, 2013). The invisible insurance company concept intends to create an environment based on the big companies that provide digital e-commerce APIs, such as Google, Amazon, and Apple.

On the other hand, Company D presented several actions that emerged from the apprenticeships of the insurance sales project. Through resources involving SUIT, they are developing new analytical and communication skills with their customers. Such as the creation of a "blog and a YouTube channel, being able to explain products to people" (SD) and "new Wellcome-kit processes, where [...] we do a quick interview [via online form]" (SD) to identify new needs.

Consolidation of results

The evidence from both cases suggests that companies were able to develop dynamic capabilities through external learning generated by strategic alliances, thereby enhancing the benefits of the SUIT.

In both cases, it was possible to identify those dynamic capabilities that allow companies to accelerate their digital journey by reorganizing resources and skills that generate more flexibility, agility, and innovation. Ativa was able to assimilate new technologies such as DevOps and Analytics through approximation with the digital acceleration program projects. This assimilation will allow the company to transform IT structures and applications more agilely. Conecta is expanding its integration platform for several company processes, allowing external developers to assimilate and transform new business opportunities with more flexibility, using the insurer's resources. Companies C and D are restructuring their businesses to serve new markets, developing new products, and reorganizing their resources to innovate through strategic alliances. All these processes are recurrent and systemic transformations generated by the DC of these companies.

The studies of the cases allow the specific objective of the research to be taken care of, *identifying the contributions that the dynamic capabilities generate in*

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the strategic use of information technology from alliances between companies. They also reinforce the systemic and entrepreneurial potential of DC in transforming business and improving business performance (Schilke et al., 2018; Teece, 2018; Yeow et al., 2018). It is pertinent to confirm that Proposition 1 is real:

- **Proposition 1**: The learning generated in the strategic alliances is assimilated and applied in other dynamic capabilities through the absorptive capacity.

In both cases, we exemplified projects that allowed the digitalization of the insurance contracting process, improving the user experience. All the interviewed companies have innovated in creating new services and taking care of new markets with new business-oriented models. The integration projects allowed for the flexibility of the insurance sales platforms, while Ativa automatized the internal routines of customer registration. They considered that both insurance companies have gained agility in responding to business opportunities and are incorporating new technologies such as DevOps, Analytics, and integrations via APIs.

These first-order learnings that improve operational efficiency and the higher-order DC reinforce several arguments in the literature about the relevance of strategic alliances as a resource to obtain benefits from the SUIT through organizational learning (Battleson et al., 2016; Bharadwaj et al., 2013a; Chan et al., 2019; Kale et al., 2000; Karimi & Walter, 2015; Roberts et al., 2016; Teece et al., 1997; Zahra & George, 2002).

Therefore, this alignment of the mechanisms of strategic alliances with dynamic capabilities and these with the benefits of the SUIT allows us *to identify how this process contributes to enhancing the benefits of the strategic use of information technology* and confirm that Proposition 2 is also valid:

- **Proposition 2**: Dynamic capabilities and learning in alliances enhance the benefits of the strategic use of information technology.

Confirming the two prepositions validate the model considered in Figure 1, indicating the relationship and contributions between the presented constructs inside the context of the boarded theory in this paper.

CONCLUSIONS AND IMPLICATIONS

Although the SUIT or DBS literature is extensive, it discloses little on how the insurance companies can make a systemic transition for the DT and

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banks included (Sia et al., 2016). When contextualizing this paper in the Brazilian segment of insurance and analyzing ensuring the strategic alliances between insurance companies and startups, this paper contributes with literature in the direction to broaden the knowledge on the strategic value of alliances on SUIT and on how the traditional companies of the financial sector are reacting regarding the disruptive technologies.

The literature on IS related to the contribution between companies has evolved but is admittedly limited (Ravichandran & Giura, 2019; Schilke et al., 2018) since there are gaps in understanding how the DC can support ongoing DT projects (Vial, 2019). When approaching the development of the DC through ACAP, this paper enriches the understanding of the contributions of these constructs in the literature of dynamic capabilities, supported by the evidence that the abilities of leadership and the digital culture favorable to the learning generated in the context of alliances, improve assimilation and changes transformation identified during the projects. In the same way, the analysis of the relation between the alliance's context and SUIT's benefits contributed to the existing literature on the strategic use of IT, extending the understanding of how the developed DC and alliance capability in the projects improve the results on the expected benefits.

Finally, the relation between the three presented constructs in this paper is relevant and essential for maximizing the SUIT benefits. For that matter, this paper offers a relevant empirical contribution to the systemic understanding of how strategic alliances contribute to DT through the development of DC and benefits that can become competitive advantages.

The systemic view also brings important practical considerations and implications. The logical model of the relationship between the main concepts represented in Figure 1 allows entrepreneurs and executives to benefit more efficiently from their alliances. Strategic partnerships are an excellent resource for developing people's abilities through ACAP. The case study reports offer several examples of collaboration between business and technology. The main implication is that alliances improve leaders' skills in identifying, assimilating, and sharing business opportunities. Their role is decisive in generating strategic benefits.

More than people's development, organizational learning also develops the culture of sharing, experimentation, and resilience, improving the capacity of a company to organize its resources of strategic form and support a competitive advantage (Cohen & Levinthal, 1990; Zahra & George, 2002). For that matter, a significant practical contribution of this paper was to understand the contributions of digital culture in the development of DC.

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The proximity of great organizations with small companies and startups promotes a learning culture that can speed up this process. Consequently, it encourages improvements in processes and systems that allow greater flexibility, agility, user experience, and desired innovation. This practical contribution is expressed as subsidies for executives who seek digital innovation as part of their companies' competitive strategy.

Limitations and future research

Although this paper provides valuable information, it has its limitations. Considering that one is about an exploratory study, identifying the relationship between the phenomena translates neither the intensity nor its frequency (Eisenhardt & Graebner, 2007). Therefore, the first limitation refers to the applied methodology. Even if it is satisfactory for understanding the phenomenon, future research can replicate the contributions identified between the relations of the constructs through quantitative analysis to validate the intensity of the assistance of the alliances in the SUIT and the development of DC.

This research offers some limitations regarding the context and the units of analysis. Although very appropriate to enrich the understanding of the contributions of insurtechs, the choice of the insurance segment does not reflect a more complex scenario in the financial sector where the digitization process is already advanced, and the role of startups is consolidated. Future research may expand this scope by investigating other service sectors, industries, or retail to understand the relationships analyzed.

The option of not doing multiple case studies with recursive iteration logic limits the understanding of DC's contributions to the systemic process of strategic alliances. Although the empirical evidence is satisfactory, future research can explore this relationship, investigating how companies strategically adjust their resources and competencies from continuous alliance cycles. Finally, to advance knowledge about the context of dynamic alliances and capabilities for digital transformation, research can explore the relationship of these constructs with digital capabilities, which contribute to digital innovations.

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