Strategic leadership and inter-firm knowledge sharing: foundations for effective digital transformation and customer engagement

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Strategic leadership and inter-firm knowledge sharing: Foundations for effective digital transformation and customer engagement

Abstract

Purpose – The purpose of this paper is to examine how strategic leadership and inter-firm sharing lead to digital transformation and customer engagement.

Design/methodology/approach - Time-lagged data were collected from CEOs and customers of multinational organizations operating in China. Data were analyzed using structural equation modeling in Mplus (8.8).

Findings - The results from the structural model indicate that strategic leadership positively impacts digital transformation, which subsequently enhances CE behavior. Furthermore, inter-firm knowledge sharing strengthens the relationship between strategic leadership and digital transformation, highlighting its role as a critical enabler in fostering CE.

Originality/value - This study brings to the fore crucial yet overlooked roles of strategic leadership and inter-firm knowledge sharing in shaping organizations' digital transformation and CE. It develops a framework for multinational organizations aiming to enhance.

Keywords. Strategic leadership, digital transformation, inter-firm knowledge sharing, customer engagement

Introduction

Customer engagement is critical for firm success in global markets as it fosters trust, loyalty, and adaptability (Steinhoff et al., 2023; Cubillas-Para et al., 2024). Engaging customers effectively helps international firms build credibility and establish strong relationships, which are essential to achieving sustained growth and market position in the highly competitive global environment (Srivastava & Sivaramakrishnan, 2022; Zhang et al., 2024). Customer engagement helps firms understand and adapt to each market's unique preferences, behaviors, and cultural nuances, fostering trust and credibility (Chatterjee et al., 2022). Indeed, in a global landscape where customers have numerous choices and local competitors are often well-established, customer engagement offers a way for firms to differentiate themselves and achieve competitiveness (Cubillas-Para et al., 2024; Steinhoff et al., 2023; Srivastava & Sivaramakrishnan, 2022). Additionally, actively engaging with customers provides valuable feedback that can guide product and service adjustments, ensuring offerings remain relevant and competitive across various regions in the global context (Christofi et al., 2020; Kumar et al., 2019; Zhang et al., 2024). Thus, high levels of customer engagement also create brand advocates who spread positive word-of-mouth, which is invaluable for firms looking to strengthen their presence and reputation in global markets. In a highly competitive environment, digital transformation is key in empowering firms to build more responsive, customized, and efficient customer engagement strategies.

Over the past few years, digital transformation has transformed business operations, strategies, and frameworks, empowering organizations to leverage technological advancements to drive value creation and resilience in an interconnected global economy (Butt et al., 2024; Fang and Liu, 2024; He et al., 2020; Paul et al., 2024). Digital transformation refers to the integration of digital capabilities across operations—which paves the way for new networking and collaborative opportunities among customers, stakeholders, and even competitors (Diaz et al., 2022; Fang and Liu, 2024; Homburg and Wielgos, 2022; Kao et al., 2024). Digital transformation brings innovations in automation, real-time data, and machine learning, prompting organizations to rethink customer engagement, innovation processes, and expansion strategies (Guha et al., 2021; Kumar, 2021). Additionally, studies suggest that digital transformation offers unique avenues for global expansion, enriches customer interactions, and enables firms to develop diverse consumer behaviors and cultural strategies in international markets (Shankar et al., 2022; Gürhan-Canli et al., 2018; Zhang et al., 2024). However, despite the argued importance of digital transformation in enhancing customer engagement in global markets, empirical studies on its role in shaping customer engagement are scarce at best. Filling the research gap on digital transformation's role in shaping customer engagement in global markets is crucial because it can illuminate how firms leverage technology to foster meaningful customer relationships. Understanding this relationship would enable organizations to design targeted strategies that enhance customer engagement and drive sustainable growth. Moreover, empirical insights into this area can guide businesses in optimizing digital tools to create personalized and innovative engagement models, ultimately strengthening their competitive advantage in a rapidly evolving global economy.

To address the above omission and respond to the recent calls (Chatterjee et al., 2022; Kumar et al., 2019), we build on the dynamic capability view (Teece et al., 1997) to propose a positive relationship between strategic leadership and customer engagement. DCV highlights the role of leadership in driving organizational renewal, particularly in digital transformation, where leaders orchestrate resources and capabilities to exploit technological disruptions (Teece, 2018). Strategic leadership refers to the process of influencing others to make decisions that enhance the long-term success and performance of an organization (Hitt et al., 1998). It involves setting a vision for the organization, mobilizing resources, and fostering innovation to achieve sustainable competitive advantage. Strategic leaders navigate complex and often volatile environments, ensuring that their organizations not only survive but thrive amidst competition and change (Finkelstein et al., 1996). From a DCV perspective, this reflects leaders' ability to sense digital opportunities, reconfigure organizational processes, and align them with evolving customer demands (Warner and Wäger, 2019). Such an ability of strategic leadership to anticipate, envision, and maintain flexibility in dynamic business landscapes makes strategic leadership particularly critical in rapidly transforming industries. Strategic leadership is vital for making swift, high-impact decisions regarding the adoption and integration of digital technologies, which are essential to maintaining competitive advantage in this fast-paced environment (Hanelt et al., 2021). Moreover, as customer expectations increasingly shift toward seamless, personalized, and digital-first experiences, it is the responsibility of strategic leaders to anticipate these changes and implement digital strategies that enhance customer satisfaction and engagement (Verhoef et al., 2021).

Moreover, dynamic capability theory (DCT) provides a framework for understanding how firms build, adapt, and utilize their resources and competencies to remain competitive in rapidly changing environments (Teece et al., 1997). Based on these foundational principles of DCT, we suggest that digital transformation is a mediator in explaining how strategic leadership leads to customer engagement in global markets. We consider digital transformation mainly because it enables organizations to gather and analyze vast amounts of data from multiple touchpoints, such as social media, e-commerce sites, and direct communication channels, offering insights into customer behavior and preferences that facilitate the creation of personalized marketing strategies (Diaz et al., 2022; Homburg and Wielgos, 2022). These touchpoints are instrumental in cultivating customer engagement, as they allow for two-way communication and enable organizations to foster more meaningful, interactive relationships with their customers in real time (Makri et al., 2019; Kumar, 2021).

Finally, DCV emphasizes that in rapidly changing environments, the ability to access and integrate external knowledge becomes a key dynamic capability (Teece et al., 1997). Consistent with DCV, inter-firm knowledge sharing represents a critical dynamic capability that enables firms to reconfigure resources in response to the changing environment (Teece, 2018). As such, we argue that the influence of strategic leadership on digital transformation can be more profound when a firm engages in inter-firm knowledge-sharing practices. By facilitating access to complementary resources, external expertise, and innovations, inter-firm knowledge sharing enhances the effectiveness of digital transformation efforts. This exchange of knowledge allows firms to better understand emerging technologies, market trends, and best practices, which strategic leaders can use to align digital transformation with organizational objectives (Wang et al., 2018). Inter-firm knowledge sharing enables organizations to tap into a broader network of resources, extending beyond internal capabilities, to navigate technological disruptions and capitalize on new opportunities (Sammarra and Biggiero, 2008). In volatile environments, this moderating role becomes even more critical as external knowledge fosters the flexibility and continuous innovation needed for successful digital transformation (Sun et al., 2020). Therefore, integrating external knowledge flows with internal dynamic capabilities strengthens the relationship between strategic leadership and digital transformation.

We make several contributions to different literature streams in the context of international marketing. While previous research has shown that leadership styles predict customer engagement (Popli and Rizvi, 2017), we identify strategic leadership as a key direct antecedent of customer engagement. In doing so, we highlight strategic leadership as a valuable organizational resource that positively influences customer engagement, broadening the scope of leadership styles that add value to multinational organizations. Second, our work responds to calls for a deeper understanding of why leadership is linked to customer engagement (Raza et al., 2023). Specifically, we underscore the role of digital transformation as a crucial resource conduit that transfers the benefits of organizational resources from strategic leadership to customer engagement. Additionally, we show that digital transformation, which has received relatively little attention in relation to customer engagement, directly influences customer engagement. Lastly, we introduce inter-firm knowledge sharing as a vital boundary condition that enhances the effectiveness of strategic leadership in shaping perceptions of digital transformation and improving customer engagement. While previous studies have shown that inter-firm knowledge sharing helps organizations address challenges and adapt to changes (Sammarra and Biggiero, 2008), we identify its role as a critical boundary condition in the relationship between strategic leadership, digital transformation, and customer engagement. The proposed model is presented in Figure 1.

Insert Figure 1 about here

Theory and Hypotheses Development

DCT emphasizes a firm's ability to integrate, build, and reconfigure both internal and external resources to adapt to rapidly changing environments, thereby sustaining competitive advantage (Teece et al., 1997). DCT is based on three core activities: sensing opportunities and threats, seizing those opportunities through effective resource mobilization, and reconfiguring organizational capabilities to maintain agility in the face of market disruptions (Teece et al., 1997). This adaptability is crucial in environments shaped by technological advancements, such as digital platforms, artificial intelligence, and the Internet of Things (IoT), where organizations must constantly innovate and adjust their strategies to remain competitive (Chari et al., 2022).

In line with the sensing capability, strategic leadership becomes instrumental in scanning the external environment, identifying market trends, and interpreting technological disruptions. According to Jiang and McCabe (2021), leaders' foresight enables firms to anticipate shifts and uncover new opportunities. Seizing, which involves mobilizing resources to act upon identified opportunities, is closely associated with digital transformation efforts. By leveraging digital technologies, organizations can effectively capitalize on sensed opportunities, implement innovations, and reconfigure operational processes (Chari et al., 2022). Reconfiguring is particularly enabled through internal processes such as knowledge sharing. Effective knowledge dissemination across organizational units allows firms to adapt and realign their routines, structures, and competencies in response to evolving demands (Zhang et al., 2022).

In this context, strategic leadership plays a critical role, as leaders guide organizations in developing and deploying these dynamic capabilities. Strategic leaders are responsible for identifying market trends, fostering innovation, and driving the transformation required to adapt to external changes (Jiang and McCabe, 2021). By aligning organizational resources with external opportunities, strategic leaders ensure that firms can reconfigure their capabilities effectively, fostering resilience and enabling firms to meet evolving customer demands (Dayioglu et al., 2024; Zhang, et al., 2022). Thus, DCT underscores the central role of strategic leadership in ensuring firms remain competitive in fast-paced, dynamic environments.

Strategic leadership and digital transformation

Strategic leadership focuses on aligning long-term organizational objectives with market dynamics, leveraging foresight, innovation, and flexibility to address anticipated and unexpected challenges (L. D. Hollebeek, Conduit, and Brodie, 2016). From the CV perspective, these leadership qualities embody the sensing and seizing functions critical for adapting to digital disruptions (Teece, 2018). Leaders with strategic vision are well-equipped to foster agility within their organizations, ensuring they remain competitive in an era marked by rapid technological advancements and evolving customer expectations (Moliner, Monferrer-Tirado, and Estrada-Guillén, 2018). By crafting forward-looking strategies, strategic leaders guide organizations in adapting to and even shaping their futures, particularly through innovation and transformative initiatives (Kumar and Pansari, 2016).

In the context of digital transformation, strategic leadership is instrumental, as leaders must integrate digital strategies that align with organizational goals and enhance customer engagement (Jaakkola and Alexander, 2014). DCV emphasizes that such integration represents a key dynamic capability where leaders reconfigure resources to embed digital technologies into business processes (Warner & Wäger, 2019). Digital transformation goes beyond adopting technology—it requires a shift in business models, organizational structures, and the firm's interactions within digital ecosystems (Furr, Ozcan, and Eisenhardt, 2022). Strategic leaders enable this transformation by fostering continuous learning and innovation, ensuring that digital initiatives are not only implemented but also sustained through agile organizational practices (Schneider and Kokshagina, 2021). Through a DCV lens, these activities constitute microfoundations of dynamic capabilities that enable continuous digital adaptation (Teece, 2018). For instance, digital transformation involves the comprehensive adoption of technologies like AI, big data, and cloud computing, which enhance operational efficiency and open new avenues for value creation (Kraus et al., 2021). Strategic leaders drive this adoption by aligning technological advancements with market demands, enabling organizations to leverage digital platforms for real-time engagement and co-creation with customers (Thakur, 2016). Such an alignment reflects DCV's core premise, where strategic leaders orchestrate complementary assets to build digital-enabled dynamic capabilities (Teece, 2007).

Digital transformation also requires organizations to balance short-term operational goals with long-term strategic objectives, a task that strategic leadership is uniquely suited to manage (Verhoef, Reinartz, and Krafft, 2010). Such a balancing act mirrors DCV's emphasis on simultaneously exploiting existing capabilities while exploring new digital opportunities (O'Reilly & Tushman, 2008). Leaders are essential in aligning immediate digital initiatives with broader organizational goals, ensuring that the firm remains flexible while adhering to its core values. This balancing act is crucial as companies transition from traditional business models to platform-based models, where value is co-created with customers, partners, and other stakeholders (Vial, 2019). Strategic leaders facilitate this transition by fostering cross-functional collaboration, guiding resource allocation, and embedding digital transformation within the organization's strategic framework (Schneider and Kokshagina, 2021).

Leveraging DCT, strategic leaders play a crucial role in mobilizing resources to implement digital initiatives that align with the firm's strategic objectives. They act as enablers by integrating technologies such as AI, big data, and cloud computing into core operations, allowing the organization to respond flexibly to market disruptions and meet evolving customer expectations (Furr et al., 2022). Strategic leadership also facilitates the reconfiguration of organizational processes and structures, embedding digital solutions within the firm's broader strategic framework. This adaptability is essential, as digital transformation is not a one-time effort but an ongoing process of integrating technological advancements to maintain a competitive advantage (Schneider and Kokshagina, 2021). DCV positions this reconfiguration capacity as central to sustaining digital transformation as a dynamic capability rather than a static achievement (Teece, 2018). By embedding digital transformation within the organization's larger vision, strategic leaders ensure agility and resilience amidst technological disruptions, enabling continuous innovation and competitiveness in a digitalized economy. Understanding strategic leadership's impact on digital transformation through DCT highlights how leaders drive technological adaptation to secure long-term organizational success (Dayioglu et al., 2024). Thus,

H1: *Strategic leadership is positively related to digital transformation.*

Digital transformation and customer engagement

Digital transformation goes beyond merely adopting new technology; it involves the integration of digital tools into various aspects of the organization, leading to fundamental changes in business models, operational processes, and customer interactions (Vial, 2019). From a DCV perspective, this represents a transformation capability where firms reconfigure their resource base to align with digital ecosystems (Teece, 2018). By rethinking traditional business models and adopting digital ecosystems, companies can engage customers more effectively, ensuring they are met with seamless, data-driven experiences that drive satisfaction and loyalty (Furr et al., 2022). As such, digital transformation becomes a strategic tool that enables firms to maintain competitiveness and relevance in rapidly evolving markets (Schneider and Kokshagina, 2021), particularly by fostering dynamic and interactive customer engagement.

Further, digital transformation creates new pathways for customer engagement by shifting from traditional, product-centered approaches to platform-based models that prioritize customer interactions. Such a shift exemplifies DCV's seizing capability, where firms capture value from digital opportunities by redesigning engagement architectures (Teece, 2007). In this model, value is co-created with customers and other stakeholders, allowing customers to actively participate in shaping their experiences with the brand (Furr et al., 2022). The transition to digital platforms enables companies to foster customer engagement through a variety of engagement behaviors, such as feedback sharing, social media interactions, and advocacy, which contribute to a stronger, more connected customer base (Jaakkola and Alexander, 2014). This evolution of engagement aligns with the view that customer engagement is a multidimensional construct encompassing emotional, cognitive, and behavioral dimensions, which are enhanced through seamless digital interactions (Brodie, Hollebeek, Jurić, and Ilić, 2011; L. Hollebeek, 2011).

Digital transformation extends beyond technology adoption, allowing firms to collect and analyze customer data in real-time, driving personalized and responsive interactions that strengthen customer connections (Kraus et al., 2021; Vial, 2019). DCV positions this data-driven responsiveness as a "sensing" capability, where firms detect and interpret customer behavior patterns to inform digital strategies (Teece, 2018). Through DCT's focus on sensing, seizing, and reconfiguring resources, firms actively adapt to shifts in customer behavior by developing digital touchpoints like social media and e-commerce, fostering co-creative and engaging experiences that enhance loyalty and advocacy (Jaakkola and Alexander, 2014; Schneider and Kokshagina, 2021). This dynamic capability to innovate and reconfigure resources enables firms to respond to changes swiftly, ensuring CE is continuously nurtured in a competitive, digitalized market landscape (Furr et al., 2022). DCT thus underscores how digital transformation, strategically guided, not only strengthens customer relationships but also provides sustainable competitive advantages through ongoing adaptability to customer-driven shifts (Teece, 2007; Vial, 2019). Thus,

H2: *Digital transformation is positively related to customer engagement.*

Moderating role of inter-firm knowledge sharing

Inter-firm knowledge sharing refers to the transfer of knowledge, skills, and expertise across organizational boundaries, which is crucial for enhancing innovation, improving performance, and fostering competitive advantage (Sammarra and Biggiero, 2008). From a DCV perspective, this boundary-spanning knowledge flow constitutes a critical "sensing" capability that informs strategic leaders about emerging digital opportunities (Teece, 2018). Strategic leadership, which sets the vision for digital transformation, can be significantly strengthened by inter-firm knowledge sharing, as this collaboration provides leaders with broader insights into technological advancements, market trends, and best practices, all of which are essential for effective digital transformation (Wang et al., 2018). Leaders leveraging inter-firm knowledge sharing are better positioned to mobilize resources effectively, thus enhancing their firm's ability to align digital initiatives with organizational goals and market demands (Chen, Lin, and Yen, 2014).

Inter-firm knowledge sharing enhances strategic leadership by building trust and shared goals across firms, which in turn enables leaders to pursue digital transformation with reduced concerns about knowledge leakage or opportunism. DCV highlights how shared resources facilitate the "seizing" of digital opportunities by lowering transaction costs and accelerating resource recombination (Teece, 2007). Strategic leaders can also draw on these shared resources to reconfigure internal processes, making their firms more adaptable to digital demands, while inter-firm collaboration allows for the integration of complementary expertise, such as technological and market knowledge, essential for driving digital innovation (Sammarra and Biggiero, 2008).

When inter-firm knowledge sharing is high, strategic leaders benefit from broader insights into technological innovations, market trends, and best practices, enabling them to align digital transformation initiatives with external dynamics and organizational goals more effectively (Sammarra and Biggiero, 2008). This aligns with DCV's transformation capability, where external knowledge integration enables firms to systematically reconfigure their digital resource base (Warner & Wäger, 2019). This knowledge-sharing environment fosters trust and reduces reliance on formal contracts, allowing firms to share proprietary information openly and collaboratively (Chen et al., 2014). With high levels of knowledge exchange, leaders can more easily reconfigure organizational resources by integrating complementary expertise from partner firms, thereby enhancing the firm's capacity to innovate and adapt digital solutions to meet evolving customer needs (Wang et al., 2018). Thus, high inter-firm knowledge sharing enables firms to harness the full potential of DCT by creating an agile, innovation-focused approach to digital transformation (Sun et al., 2020).

Conversely, when inter-firm knowledge sharing is low, strategic leaders may face challenges in fully leveraging digital transformation capabilities. Limited knowledge exchange restricts access to external expertise and market insights, which are essential for anticipating industry changes and effectively deploying digital initiatives. In this scenario, leaders may struggle to align digital transformation efforts with external market demands, resulting in a more insular approach to innovation (Loebbecke, Van Fenema, and Powell, 2016). Low inter-firm knowledge sharing can also lead to heightened concerns about opportunism and knowledge leakage, further inhibiting collaboration and reducing the effectiveness of digital transformation initiatives (Chen et al., 2014). Without a robust exchange of ideas and resources, the reconfiguration capabilities emphasized in DCT may be constrained, potentially stifling the firm's ability to innovate and adapt in dynamic environments (Teece, 2007).

Through the lens of DCT, it is evident that the degree of inter-firm knowledge sharing can significantly impact strategic leadership's ability to drive effective digital transformation. High inter-firm knowledge sharing enhances dynamic capabilities by enabling greater resource integration and innovation potential, whereas low knowledge sharing limits access to external resources and reduces the agility necessary for successful digital adaptation (Sammarra and Biggiero, 2008; Sun et al., 2020). Thus,

> **H3:** Inter-firm knowledge sharing moderates the relationship between strategic leadership and digital transformation *such that the relationship is stronger when inter-firm knowledge sharing is high or vice versa*.

Method

In our second study, data were collected from two sources – CEOs and customers – with the assistance of alumni from a prestigious technology university in China, who helped gather responses from the CEOs of their respective organizations. This setting was selected due to China's ongoing governmental initiatives aimed at digital transformation. These efforts have fostered a robust environment for digital innovation and cross-organizational collaboration (Cheng and Smyth, 2021; Wu, Eesley, and Yang, 2022).

Two-source and the two-week interval between waves were strategically implemented to reduce common method bias. Following Law et al.'s (2016) recommendations, the temporal separation between the predictor and the outcome variables reduces the artificial inflation of relationships through same-source/same-time effects.

In collaboration with the alumni, we distributed a survey to CEOs of 800 multinational organizations operating in various manufacturing and service sectors of China. The CEOs received survey questionnaires along with the cover letter, which contained a brief on the study's purpose and confidentiality and anonymity protocols. With the help of alumni, we received consent for participation from 413 CEOs.

The data collection process was conducted across three time points. At Time 1, CEOs responded about the control variables, strategic leadership, and inter-firm knowledge sharing. At Time 2, CEOs provided data on digital transformation. We received 379 and 233 responses at Time 1 and Time 2, respectively. Finally, at Time 3, customer engagement data were collected directly from customers who recently received services or bought some products from these 233 multinational organizations, whose CEOs responded in both of the first two rounds. The alumni distributed surveys to ten customers who visited and bought some service/product from these organizations. These customers were paid an amount equivalent to $5 for filling out the surveys. We received two to four responses from customers of each of these organizations. These responses were aggregated to match the CEOs' data points.

The involvement of alumni networks significantly enhanced our response rates. Since the data were collected from the CEOs and customers of the organizations in the alumni were working, we could gather data with a reasonable response rate.

Measures

The measures selected were used in previous studies, and their reliabilities and validities have already been established in some cultural settings. Responses were recorded on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Strategic leadership was measured with a ten-item scale developed by Samson and Challis (1999). The Chronbah's Alpha is 0.95. Sample item: "In our organization, reasons for change initiatives are communicated well." Interfirm knowledge sharing was measured using a five-item scale. Three items were adapted from Malhotra et al. (2005), while the remaining two items were sourced from Li et al.(2005). An example item is, "We share proprietary information with our main suppliers." The measure demonstrated good reliability with a Cronbach's alpha of 0.83. We measured digital transformation by adapting the five-item scale (α =.91) developed by Nasiri et al. (2020). Sample item: "*We have created stronger networking between the different business processes with digital technologies."* To assess the level of customer engagement, we adapted a four-item scale (α =.90) from Blasco (2014). Blasco's scale was developed based on prior contributions from Medlin and Green (2009) and Sprott et al. (2009).

Control variables

To account for confounding influences, we controlled for firm age and industry, as these variables may confound the results (Furr et al., 2022). The firm average age was just above 11 years. Moreover, 61.80% were manufacturing organizations, and the remaining 38.20% were service sector organizations.

Results

Correlations and descriptive statistics

Table 1 presents the descriptive statistics and correlations among the variables.

Insert Table 1 about here

Measurement model

A series of confirmatory factor analyses were conducted in Mplus (8.8) to assess the measurement model, which consisted of strategic leadership, digital transformation, customer engagement, and inter-firm knowledge sharing. All the items loaded significantly ($p < .001$). The fit indices – $\chi^2(246) = 579.096$, $\chi^2/df = 2.35$, RMSEA = .07, SRMR = .07, CFI = .93, TLI = .92 – showed a satisfactory fit with our data. Furthermore, all variables in Table 2 exhibited average variance extracted (AVE) values exceeding 0.50. Additionally, the square root of AVE for each variable was greater than its inter-construct correlations. Across all variables, maximum shared variance (MSV) was lower than AVE, as outlined in Table 2. These results confirm the satisfactory levels of convergent and discriminant validities for the scales employed in the research.

Insert Table 2 about here

Hypotheses testing

As shown in Table 3, strategic leadership was positively related to digital transformation (*B = .23, SE = .06, p < .01; 95% CI [.11, .34]*), and digital transformation was positively related to customer engagement (*B = .28, SE = .05, p < .01; 95% CI [.17, .38]*). Thus, H1 and H2 were supported.

We tested hypothesis 3 by including the interaction term involving inter-firm knowledge sharing and strategic leadership within the framework of the model. Based on the moderation analysis, as shown in Table 3, we found a significant positive effect of the interaction on digital transformation ($B = .13, SE = .04, p < .01$; *95% CI [.05, .22]*). Figure 2 demonstrates the exact characteristics of this moderated pathway. Simple slope plots display two specific conditional values of this moderated relationship: low inter-firm knowledge sharing and high inter-firm knowledge sharing. The link between Strategic leadership and digital transformation was insignificant ($B = .14, SE = .08, p = ns$) when inter-firm knowledge sharing was low, while the link was significant ($B = .46, SE = .08, p < .01$; *95% CI [.29, .62]*) when inter-firm knowledge sharing was high. Therefore, hypothesis 3 was supported.

Insert Table 3 and Figure 2 about here

Discussion

The current study investigated why and when strategic leadership impacts customer engagement in multinational organizations. Utilizing DCT, the current study offered that strategic leadership is positively linked with digital transformation, which in turn positively influences customer engagement. The study also tested the role of inter-firm knowledge sharing as an important boundary condition of the relationship between strategic leadership and digital transformation. Our results based on time-lagged data with data collected from two sources supported the hypothesized links

Theoretical implications

The study makes significant theoretical contributions. First, this study utilizes DCT to analyze how strategic leadership enhances an organization's adaptability and responsiveness in fast-changing environments by mobilizing and reconfiguring resources for digital transformation. According to DCT, firms must develop dynamic capabilities, such as sensing opportunities, seizing resources, and reconfiguring capabilities to sustain competitive advantage in turbulent environments (Teece, 2007). Although previous studies have extensively explored the role of leadership in technological adoption and organizational change (e.g., Hanelt et al., 2021; Kraus et al., 2021; Vial, 2019), the role of strategic leadership in digital transformation and fostering customer engagement has not been explored. We position strategic leadership as a key driver of these capabilities and demonstrate how leaders guide the adoption and integration of digital technologies to align with organizational goals and market demands, thereby creating a strategic foundation for continuous innovation and responsiveness (Schneider and Kokshagina, 2021).

Specifically, we associate strategic leadership with the sensing capability, as leaders are responsible for identifying emerging trends, detecting changes in customer expectations, and interpreting external signals to anticipate opportunities and threats. Thus, we advance this literature by showing how strategic leadership, through the lens of DCT, orchestrates resources to align digital initiatives with evolving market needs, enabling firms to sense opportunities more effectively and set the stage for subsequent resource deployment and reconfiguration.

Second, our study extends DCT by exploring digital transformation as a pathway through which strategic leadership influences customer engagement. Digital transformation allows firms to establish interactive and data-driven customer touchpoints, creating personalized and engaging customer experiences that go beyond transactional interactions (Kraus et al., 2021). Through DCT's emphasis on continuous adaptation, this study reveals that digital transformation facilitated by strategic leadership enables organizations to sense and respond to customer needs in real-time, fostering customer engagement. Digital transformation reflects the seizing capability of DCT, as it involves mobilizing and deploying resources, such as technological, human, and financial, to act on sensed opportunities and implement customer-centric innovations. Further, prior research, such as Alexander and Jaakkola (2014), has laid important groundwork by exploring value co-creation in customer interactions, and our findings build on this by demonstrating how digital transformation enables real-time, personalized customer touchpoints that enhance engagement behaviors like loyalty and advocacy. Third, previous studies (e.g., Schneider and Kokshagina, 2021) have also shown that digital transformation leads to innovation. Studies (e.g., Vial, 2019) have also revealed that digital tools foster engagement. We advance this literature on digital technologies by identifying digital transformation as a vital link between strategic leadership and customer engagement, responding to calls for deeper exploration of this relationship (Chatterjee et al., 2022; Kumar et al., 2019).

Finally, our study investigates the moderating role of inter-firm knowledge sharing in the relationship between strategic leadership and digital transformation, emphasizing how collaborative exchanges amplify dynamic capabilities. High levels of inter-firm knowledge sharing provide strategic leaders with access to broader expertise, external insights, and technological innovations, enabling a richer resource base for implementing effective digital transformation (Sammarra and Biggiero, 2008). DCT highlights that inter-firm knowledge sharing enhances a firm’s sensing and reconfiguring capabilities, as it facilitates the integration of complementary resources and reduces reliance on formal mechanisms, fostering a collaborative culture that supports knowledge flow and innovation (Chen et al., 2014). In particular, we associate inter-firm knowledge sharing with reconfiguring capabilities, as it provides firms with diverse and externally sourced knowledge that supports the restructuring of routines, capabilities, and strategic direction. When inter-firm knowledge sharing is high, strategic leaders are better equipped to leverage external knowledge to refine digital transformation strategies, enhancing the firm's adaptability and competitive positioning (Sun et al., 2020). While prior work, such as Wang et al. (2018), has emphasized the role of knowledge sharing in innovation, our findings extend this by showing that high levels of inter-firm knowledge sharing enhance strategic leadership's ability to drive digital transformation through access to external insights and expertise. Further, studies (e.g., Sun et al., 2020) have shown how knowledge sharing strengthens a firm's sensing and reconfiguring capabilities, enabling leaders to navigate digital ecosystems effectively. Our study contributes to this literature stream by demonstrating how sensing, seizing, and reconfiguring work in tandem as dynamic capabilities that collectively foster customer engagement.

Practical implications

This study offers several critical managerial implications for multinational organizations operating in the current global context. To improve clarity, we organize these implications around three key stakeholder groups: senior leaders, digital strategy managers, and international partners.

Implications for senior leaders

The findings underscore the importance of strategic leadership in navigating the complexities of the digital age. Senior leaders in multinational organizations must focus on developing sensing capabilities, including scanning the environment, identifying opportunities, and setting a forward-looking vision aligned with long-term strategic goals. Effective leadership involves mobilizing and managing organizational resources to foster innovation and drive superior performance. Leaders should cultivate an adaptive organizational culture that embraces creativity, agility, and responsiveness to technological shifts. In dynamic markets such as China, where regulatory pressures and competitive intensity are high, strategic leaders must foster internal alignment while remaining externally responsive.

Implications for digital strategy managers

Digital strategy managers are key actors in seizing opportunities through digital transformation. The study highlights the need to prioritize the integration of digital tools, such as AI, big data analytics, and cloud computing, into core business processes. These technologies enable real-time responsiveness and enhance customer experiences. Digital managers should focus on designing systems and touchpoints that promote customer engagement, co-creation, and personalization, thereby building loyalty and advocacy. Importantly, embedding digital transformation within broader strategic objectives ensures that technology adoption translates into competitive advantage.

Implications for international partners and external collaborators

International partners play a vital role in supporting the reconfiguring capabilities of multinational organizations. Our findings highlight that inter-firm knowledge sharing significantly enhances strategic leadership's effectiveness in implementing digital transformation. Collaborative partnerships offer access to external expertise, emerging technologies, and cross-industry insights. To fully leverage this, multinational organizations, especially those in technology-intensive sectors, should build alliances based on trust, shared goals, and openness to mutual learning. These partnerships strengthen adaptability, foster innovation, and contribute to sustained competitive advantage in volatile global markets.

In sum, multinational organizations in China and beyond can benefit from a triadic focus: strategic leadership to sense opportunities, digital strategy to seize them through transformation, and inter-firm collaboration to reconfigure capabilities in response to evolving conditions. By embracing a culture of continuous improvement and strategic agility, these firms can navigate market shifts and secure long-term sustainability in an increasingly digital and competitive global landscape.

Limitations and future directions

This study, while offering valuable insights into the role of strategic leadership in shaping customer engagements, has certain limitations. First, while this study offers valuable insights into the relationship between strategic leadership, digital transformation, and inter-firm knowledge sharing, its findings are based on data collected from multinational organizations operating in China. As such, the generalizability of results may be influenced by cultural factors specific to the Chinese context, such as Confucian values, hierarchical leadership norms, and a collectivist orientation. These cultural dimensions may shape how strategic leadership is enacted and how knowledge is shared across firm boundaries. For instance, collectivism may enhance trust and cooperation in inter-firm relationships, while hierarchical norms may affect the openness of leadership communication. Future research could explore how these cultural influences differ across regions to validate and extend the applicability of our findings in other cultural contexts.

Second, this study relies on self-reported data for key variables such as strategic leadership and digital transformation. Future research could benefit from using more objective measures or third-party evaluations, especially in a culture where power distance and respect for authority are deeply ingrained. Third, while the three-time-lagged research design addresses some concerns regarding causality, it cannot entirely rule out the possibility of reverse causality. A longitudinal design would offer a deeper understanding of how strategic leadership impacts customer engagement over time, especially in organizations with slower career progression or rigid hierarchical structures.

Finally, the limitation is the exclusive focus on inter-firm knowledge sharing as the moderating factor. While inter-firm knowledge sharing is significant, future research could explore additional moderators, like paternalistic leadership, which is prevalent in many Chinese organizations, to understand how these unique cultural factors shape the strategic leadership-customer engagement relationship.

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Table 1. Means and Correlations

Construct	Mean	SD	1	2	3	4	5	6
1. Strategic leadership	4.59	1.22	1					
2. Digital transformation	4.12	1.38	.38**	1				
3. Customer engagement	3.26	1.12	.23**	.32**	1			
4. Inter-firm knowledge sharing	4.77	1.23	.50**	.27**	.03	1		
5. Firm age	11.12	6.45	.11	.27**	-.16*	.03	1	
6. Industry			.01	.005	-.04	-.05	.16*	1

Notes. N = 233. $*p < .05$. $**p < .01$.

Table 2. Discriminant validity and convergent validity

Construct	1	2	3	4	AVE	MSV
1. Strategic leadership	**.83**				.68	.33
2. Digital transformation	.41	**.82**			.68	.11
3. Customer engagement	.23	.33	**.90**		.82	.17
4. Inter-firm knowledge sharing	.57	.31	.03	**.70**	.50	.33

Notes. N = 233. AVE = Average variance extracted. MSV = Maximum shared variance. ASV = Average shared variance. Bolded values on the diagonals of columns 2 to 6 are the square root values of AVE.

Table 3. Hypotheses results

	B	SE	95%CI	
			LL	UL
Direct Paths				
Firm age → Customer engagement	$-.21^{**}$	.07	-.36	-.06
Firm size → Customer engagement	-.02	.09	-.19	.15
Strategic leadership→ Digital transformation	$.23^{**}$	.06	.11	.34
Digital transformation → Customer engagement	$.28^{**}$	.05	.17	.38
Moderated Paths				
Strategic leadership * IFKS→ Digital transformation	$.13^{**}$	.04	.05	.22
Strategic leadership→ Digital transformation (on low IFKS)	.14	.08	-.06	.34
Strategic leadership→ Digital transformation (on high IFKS)	$.46^{**}$	.08	.29	.62

Notes. $N = 233$. *B = Unstandardized coefficient, SE = Standard error, Bootstrapping specified at 5000 with 95% confidence interval. CI = Confidence* interval. LL = lower limit. UL = Upper limit. IFKS = Inter-firm knowledge sharing$^{*}p < .05$. $^{**}p < .01$.

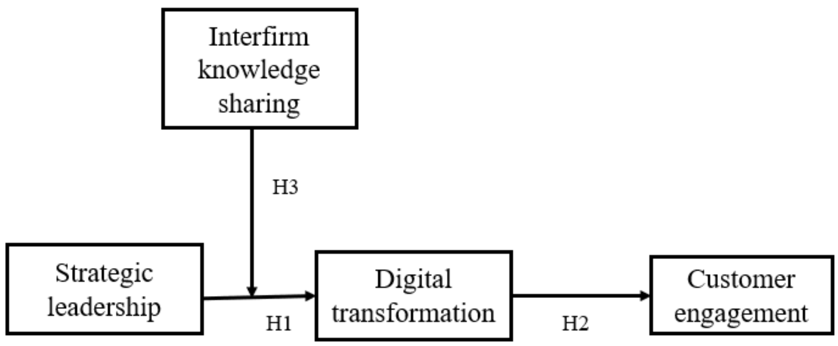

Figure 1: The proposed model (Authors' own work)

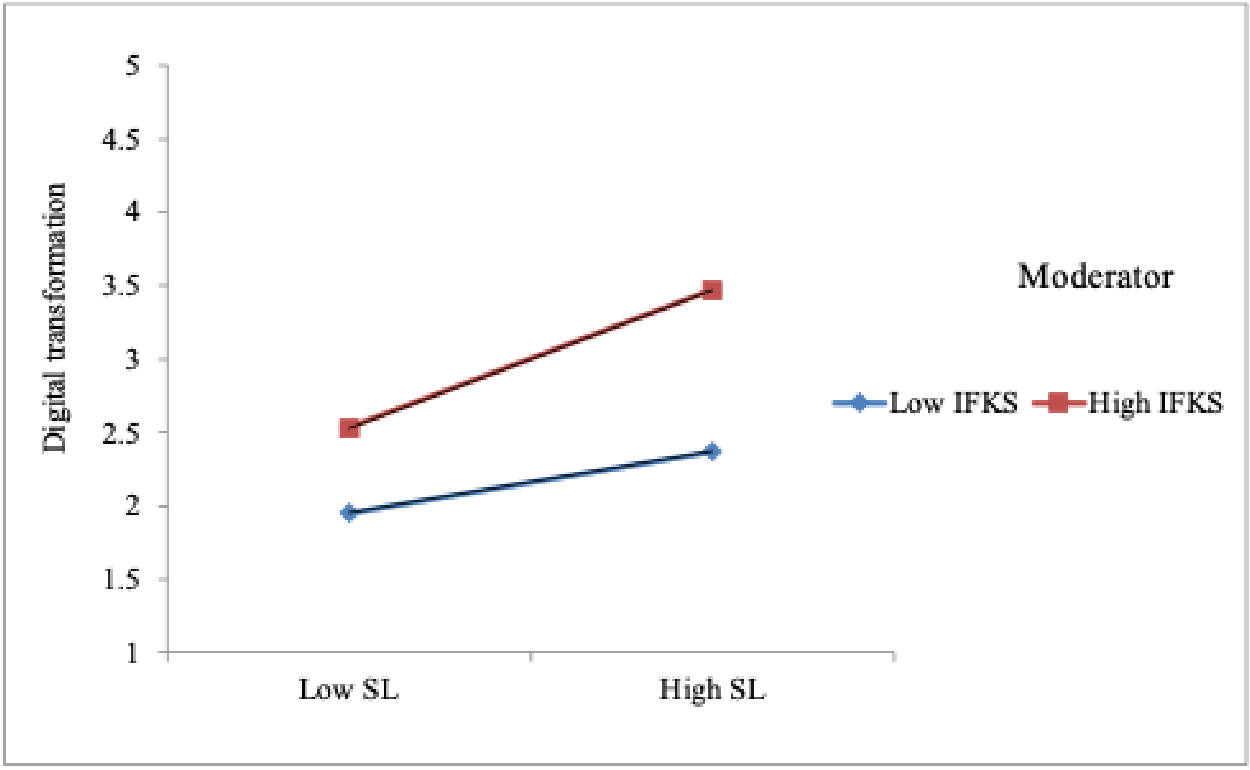

Figure 2: Strategic leadership (SL) and digital transformation: Inter-firm knowledge sharing (IFSK) as a moderator (Authors' own work)