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RESEARCH ARTICLE



Different roles, different strokes: Disseminating e-WOM in industrial Internet platform through multi-actor value co-creation

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Abstract

Prior research has primarily focused on electronic Word of Mouth (e-WOM) in consumer markets, lacking in-depth exploration of its dynamics within B2B contexts. Addressing this gap, our study investigates e-WOM in B2B markets on industrial internet platforms. Specifically, we examine how digital platform capabilities can be leveraged to create positive e-WOM through multi-actor value co-creation processes. Utilizing a case study approach, we analyze heterogeneous data from multiple sources to understand how digital platform capabilities—such as digital ecological capability, digital coordination capability, and digital innovation capability—promote multi-actor value co-creation (including intrapreneurship within the focal firm, support for complementary products or services, and users' reciprocal participation), thereby disseminating positive e-WOM in B2B markets. Our findings provide insights into e-WOM in B2B markets and reveal the mechanisms of multi-actor value co-creation through which digital platform capabilities activate e-WOM. This study enriches the theoretical framework of e-WOM in B2B contexts and underscores the significance of digital transformation in enhancing interaction and collaboration among multiple actors on industrial internet platforms.

KEYWORDS

COSMOPlat, digital platform capability, multi-actor value co-creation, WOM in B2B

1 | INTRODUCTION

Digital technologies are transforming traditional business relationships and value-creation models. This evolution—from simple “firm-consumer” dyads to complex “firm-supplier-user” triads—challenges traditional marketing roles and necessitates a reevaluation of how value is co-created in B2B digital platforms (Ceccagnoli et al., 2011; Re & Magnani, 2022; Tavalaei & Cennamo, 2021). One type of B2B digital platform, the Industrial Internet Platform, relies on multiple

actors—including suppliers, distributors, and partners—to respond to dynamic market demands and facilitate value co-creation (Wang et al., 2024). Such platforms have successfully fostered industry ecosystems by linking numerous enterprises and enabling digital transformations on a broad scale. However, to adapt to ever-changing market demands, these platforms urgently need to engage multiple actors to jointly create value.

Activating a multi-actor value co-creation process is a critical strategy for yielding significant value for all stakeholders and achieving

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collective digital transformation for industrial internet platforms. Yet, not all industrial internet platforms effectively exhibit high value through multi-actor value co-creation; they are highly heterogeneous. For instance, GE Predix, the first platform specifically developed for industrial data and analysis, still adopts a traditional business model, focusing on R&D to promote its business. It does not iterate quickly based on the actual needs of customers and other stakeholders, nor can it generate ecological effects. This has resulted in GE selling the platform and facing a negative online reputation and Electronic Word of Mouth (e-WOM). Therefore, leveraging digital platform capabilities to create positive e-WOM in B2B markets through a multi-actor value co-creation process has become an important practical issue.

E-WOM is a pivotal communication mechanism within digital platforms, marked by the collaborative engagement of multiple stakeholders—ranging from core firms to complementors and end-users (Filiari, 2015). Within industrial internet platforms, e-WOM acts as a powerful conduit for sharing knowledge, enhancing market reputation, and influencing decision-making among businesses (Akbari et al., 2022; Belhadi et al., 2023). The digital capabilities of these platforms empower multiple stakeholders to actively participate in a tailored value co-creation process, which is instrumental in generating and sustaining e-WOM (Cowan et al., 2023). These capabilities are intricate, integrating ecological, coordination, and innovation dimensions to optimize e-WOM contributions from multiple actors. Moreover, the most recent definition of e-WOM by Babić Rosario et al. (2020) highlights that e-WOM is generated by consumers, directed at consumers, and comprises consumption-related communication. However, this is not necessarily the case in the B2B context (Chatzipanagiotou et al., 2023). Our study examines the impact of digital platform capabilities on multi-actor value co-creation, thereby promoting e-WOM within the industrial internet platform context. Despite its importance, the existing literature has yet to fully explore this linkage. Thus, the question arises: *How do digital platform capabilities activate multi-actor value co-creation, thereby disseminating e-WOM in B2B markets within industrial internet platforms?*

To address this question, our study draws on dynamic capability theory (Teece et al., 1997) and value co-creation theory (Prahalad & Ramaswamy, 2000) to investigate the interrelationship between digital platform capabilities, multi-actor value co-creation, and e-WOM in industrial internet platforms. Dynamic capability theory emphasizes that organizations develop flexible abilities to capture and orchestrate internal and external resources to better create business value (Teece, 2007). As a higher-order dynamic capability, digital platform capability refers to a platform's dynamic ability to leverage advanced digital tools and technologies to collect information from multiple actors and access actor-generated content from digital channels (Karimi & Walter, 2015; Wang et al., 2022). Value co-creation theory highlights that users are critical creators of value for enterprises rather than mere consumers (Payne et al., 2008). It also suggests that the scope of actors involved in a firm's value creation directly affects the magnitude of value created, which in turn influences its reputation and e-WOM. Approximately 91% of every sale is influenced by e-WOM, and B2B firms rely heavily on it to communicate the benefits of their offerings

(lankova et al., 2019). In the context of e-WOM in B2B markets, industrial internet platforms can build strong digital platform capabilities, attract multiple actors such as focal firms, suppliers, service providers, manufacturers, and users, and provide channels for communication and collaboration among these actors for value co-creation, thereby disseminating e-WOM in B2B markets.

Our study makes three significant contributions. First, we extend the understanding of e-WOM from B2C consumer internet platforms to B2B industrial internet platforms. Prior research on e-WOM has mainly focused on customers' perspectives, and studies in the B2B industrial internet platform context are still in their infancy (Chatzipanagiotou et al., 2023). Our findings fill this research gap by identifying B2B digital platform capabilities and exploring how they impact e-WOM through a multi-actor value creation process.

Second, we conceptualize digital platform capability as a dynamic digital capability and deconstruct it into three components: digital ecological capability toward the focal firm, digital coordination capability toward complementors, and digital innovation capability toward users. This approach extends dynamic capability theory from traditional capabilities focused on a single actor to digital capabilities involving multiple actors, responding to Khin and Ho's (2019) call to expand the application of dynamic capability theory in the digital context.

Third, our study reveals that multi-actor value co-creation serves as the bridge connecting digital platform capabilities with e-WOM in industrial internet platforms, thereby extending value co-creation theory from a single actor to multiple actors. Recognizing that existing literature often overlooks the role of complementors in value co-creation, we deconstruct multi-actor value co-creation into intrapreneurship within the focal firm, complement support, and users' reciprocal participation. This aligns with Cova and Salle's (2008) viewpoint that enterprises, customers, and service providers can interact to jointly create value, and respond to Annarelli et al.'s (2021) call for in-depth research on digital platform capability and multi-actor value co-creation.

2 | THEORETICAL BACKGROUND

2.1 | e-WOM in industrial Internet platforms

Industrial internet platforms, as defined by Fu et al. (2023) and Wang et al. (2024), are digital service platforms that leverage the combination of data and models to harness digital intelligence technologies in industrial applications. In the digital economy, these platforms redefine traditional boundaries and value-creation roles (Karhu et al., 2018). They unite diverse value actors—including platform owners, complementors such as suppliers and distributors, and users (Cui et al., 2019; Gawer, 2014; Paiola et al., 2022). This collaborative approach disrupts the conventional model where individual actors seek resources independently, fostering an environment where actors can rapidly combine resources and opportunities to meet their own value needs (Leminen et al., 2020). The platform offers channels for communication and cooperation among multiple actors engaged in value creation (Ladd, 2022).

Within this collaborative ecosystem, e-WOM plays a crucial role. E-WOM in industrial internet platforms is defined as any positive or negative statement made by potential, actual, or former actors—such as focal firms, complementors, or customers—about products, services, or sellers, which is made available to a multitude of people and institutions via the industrial internet platform (Hennig-Thurau et al., 2004; Westbrook, 1987). Its characteristics include enhanced volume, dispersion, persistence and observability, anonymity and potential deception, and community engagement. The quality of online e-WOM provides valuable signals between platform actors, helping to improve decision-making (Kauffmann et al., 2020). E-WOM in industrial internet platforms encompasses both positive and negative feedback. Positive e-WOM refers to favorable information shared by focal firms, complementors, and users about products or services on the platform (Chatzipanagiotou et al., 2023). Conversely, negative e-WOM refers to unfavorable information shared by these actors (Filieri et al., 2020a; 2020b).

2.2 | Digital platform capability

Digital platform capability lies at the intersection of technology and business and is pivotal for a digital platform's success in generating value (Ahmed et al., 2022; Benitez et al., 2022). However, the understanding of digital platform capability is still evolving, with scholars yet to agree on a unified definition or conceptualization. Current research primarily adopts two perspectives on digital platform capability: internal and external. The internal perspective focuses on the platform's actors—such as owners, complementors, and users. Adnan et al. (2022) highlight this viewpoint by viewing digital platform capabilities as an organization's ability to disseminate new knowledge and experiences across users and other actors via digital platforms. Wang et al. (2022) further this perspective by defining these capabilities as crucial for fostering interactions and communications between businesses and their stakeholders, including consumers and corporate clients. Conversely, the external perspective centers in the market. Jin and Hurd (2018) interpret digital platform capability as the proficiency of platform enterprises in conducting digital entrepreneurship globally. This involves leveraging virtual platforms to market products and services more efficiently and broadly than traditional retail channels.

Despite these insights, digital platform capability remains a nascent topic, largely unexplored beyond the firm level and with a limited focus on industrial internet platforms. This is a significant oversight, given that industrial internet platforms differ markedly from consumer internet platforms, particularly in their professional nature and the higher integration requirements for external actors. Existing research tends to overlook the broader scope of digital platform capability, which can simultaneously target various stakeholders like focal firms, users, and complementors such as suppliers (Wang et al., 2022). Moreover, although digitalization capabilities are recognized as enablers of value co-creation (Lenka et al., 2017), there is a gap in understanding how digital platform capability can empower

these external actors—a crucial aspect of multi-actor value co-creation.

Current scholarship predominantly explores digital platform capability from the vantage point of individual actors. This approach falls short of capturing the interdependent nature of actors in a platform's value-creation process. Each actor with unique roles, responsibilities, and tasks contributes differently to value creation. Therefore, adopting a multi-actor perspective is essential for a comprehensive understanding of how value co-creation unfolds in practice. To address these gaps, this study posits that the digital platform capabilities of industrial internet platforms refer to the technological features and functionalities that facilitate interactions among users and other actors. These capabilities include data analytics, connectivity options, user interface design, and integration with other digital tools (Ahmed et al., 2022; Lenka et al., 2017; Liao et al., 2024). Essentially, they are the built-in technical attributes and services that enable users to perform various tasks and interactions on the platform, thereby empowering multiple actors and exhibiting ecological, coordination, and innovation capabilities toward focal firms, complementors, and users (Li et al., 2023a). To provide a more detailed understanding, we identify three key dimensions of digital platform capability in this context: Digital Ecological Capability, Digital Coordination Capability, and Digital Innovation Capability.

Digital Ecological Capability refers to the platform's ability to promote the virtual aggregation of entrepreneurial opportunity sets and lead the ecological linkage between entrepreneurial opportunities and resources in building an industrial internet platform (Abbate et al., 2022). This capability enhances the platform's capacity to build and sustain a dynamic ecosystem involving various stakeholders. *Digital Coordination Capability* involves coordinating opportunities and resources according to the development needs of complementors within the industrial internet platform (Allred et al., 2011; Leong et al., 2024). This ensures that complementors can effectively collaborate and contribute to the platform's value-creation processes. *Digital Innovation Capability* is the platform's ability to deploy, utilize, and recombine shared user data resources, thus promoting digital innovation (Annarelli et al., 2021). This capability enables the platform to foster innovation by leveraging data insights and facilitating collaborative development among users. By introducing these three capabilities, we provide a more holistic understanding of digital platform capability, particularly in the context of industrial internet platforms.

2.3 | Multi-actor value co-creation within industrial Internet platform

Scholars have explored multi-actor value co-creation in industrial internet platforms from various perspectives, including customers, platform firms, and ecosystems. From a customer perspective, McColl-Kennedy et al. (2012) describe value co-creation as a collaborative process involving planning, production, problem-solving, and flexible adjustments between customers and firms. The extent of

customer involvement, characterized by behaviors such as information sharing and advocacy (Hansen, 2019; Yi & Gong, 2013), plays a crucial role in evaluating the success of value creation. From a system perspective, Nair et al. (2022) conceptualize value co-creation as an ecosystem comprising platform providers, users, and complementors. Scholars like Chandler and Vargo (2011) and Jacobides et al. (2018) emphasize that the shift toward user demands in the digital economy has transformed value co-creation, moving away from traditional production-focused approaches to a more user-centric model.

In comparison to consumer internet platforms, multi-actor value co-creation in industrial internet platforms is both distinct and complex (Amit & Han, 2017). Bonamigo and Frech (2020) note that, unlike consumer platforms which emphasize social and participatory features, industrial platforms prioritize real-time monitoring of manufacturing processes. Jiang et al. (2022) further highlight that industrial platforms facilitate deep user involvement in various stages of production, such as idea generation and real-time monitoring. Despite extensive research on value co-creation in consumer platforms, the multi-actor value co-creation process in industrial internet platforms remains less understood. This study aims to address this gap by deconstructing multi-actor value co-creation in industrial internet platforms into three key actor groups: focal firms, complementors (e.g., suppliers, distributors, service providers), and users (Cova & Salle, 2008; Kim, 2022). We define multi-actor value co-creation as a dynamic process where these actors exchange services, integrate resources, and collaborate to produce mutually valuable outcomes. This could involve sharing knowledge, resources, or efforts to achieve a common goal (Amit & Han, 2017; Cova & Salle, 2008; Kim, 2022). The emphasis is on the collaborative efforts of stakeholders, facilitated by the platform, to create value that no single actor could achieve independently.

We further categorize multi-actor value co-creation into three components. *Intrapreneurship in the Focal Firm* refers to the efforts of the focal firm within the industrial internet platform to create new value and drive organizational change through initiatives such as digital talent transformation, launching new businesses, developing new products, providing new services, and recruiting new employees (Gawke et al., 2019). *Complementor Support* involves complementors (e.g., suppliers or service providers) offering complementary products or services on the platform. Through network effects, complementors add value to the platform, creating additional opportunities for value creation (Benlian, Hilkert, & Hess, 2015; Boudreau & Jeppesen, 2015; Zhu, 2019). *Users' Reciprocal Participation* refers to the interactive and mutually beneficial relationship between users and other actors on the platform. It emphasizes user participation in decision-making and

collaboration to enhance the value-creation process (Huang et al., 2017).

While researchers (e.g., Falkenreck & Wagner, 2022) have examined the influence of digital capabilities, actor motivation, and technological developments on multi-actor value co-creation, there remains a noticeable lack of in-depth analysis on the relationship between digital platform capabilities, multi-actor value co-creation, and e-WOM within industrial internet platforms. This study seeks to address this gap by offering a comprehensive analysis of multi-actor value co-creation in the context of industrial internet platforms, with a focus on its connection to digital platform capabilities and the generation of e-WOM.

2.4 | Theoretical framework

To explore the dissemination of e-WOM within industrial internet platforms, this study adopts the “Input→Process→Outcome” theoretical framework. This model illustrates a sequential relationship in which digital platform capabilities serve as the catalyst for multi-actor value co-creation, which ultimately leads to e-WOM in B2B markets (see Figure 1).

The starting point, Digital Platform Capability, encompasses essential capabilities—ecological, coordination, and innovation—that empower and enhance the roles of various stakeholders within the platform. These capabilities act as the “Input” in the framework, providing the foundation for interactions and collaboration between platform actors. As these capabilities are applied, they drive the Process of multi-actor value co-creation. In this phase, customers, suppliers, distributors, and platform firms collaborate, integrating their resources to jointly create value. This collaboration is the central process of the model, demonstrating how digital platform capabilities directly influence the scope and effectiveness of value co-creation activities among multiple actors. The final outcome is e-WOM in B2B Markets, representing the “Outcome” of the model. Successful platform capabilities and cooperative value co-creation activities lead to business-to-business communication, including both positive and negative e-WOM. This communication reflects the collective experiences and endorsements shared within the platform ecosystem, shaping the market reputation and engagement in the B2B context.

The “Input→Process→Outcome” framework (Jia et al., 2023) indicates a flow of influence, positing that the capabilities provided by the platform play a critical role in shaping the co-creation process. This process, in turn, leads to the desired outcome of e-WOM, a key

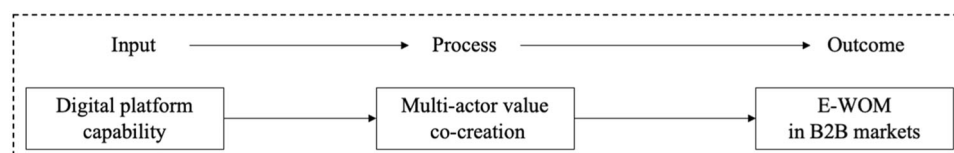


FIGURE 1 A framework of digital platform capability, multi-actor value co-creation, and e-WOM in B2B markets.

indicator of market reputation and stakeholder engagement in B2B markets.

3 | RESEARCH METHOD

This study examines the role of digital platform capabilities in disseminating positive e-WOM within COSMOPlat through a multi-actor value co-creation process. A single case study approach is employed, which is recognized for its depth and ability to capture contextual richness (Eisenhardt & Graebner, 2007; Yin, 2009). This method enables a deep exploration of the organizational and social processes inherent within the COSMOPlat environment. The choice of a single case study, rather than a multiple case design, is intentional. It allows for an in-depth investigation of COSMOPlat's unique context, preserving the complexity of real-world phenomena (Simsek et al., 2022). This approach is particularly well-suited to our research objectives, which require a thorough examination of the e-WOM process across the platform's entire value co-creation system.

While some methodologies, such as embedded designs, focus on specific elements, our holistic approach maintains a broader perspective, ensuring a comprehensive analysis of the e-WOM process as the primary unit of analysis within the COSMOPlat business context. Although we acknowledge that the single case study design may limit the generalizability and objectivity of our findings, this methodology is chosen for its capacity to reveal detailed insights into practical occurrences and for its potential to uncover novel insights. Through this in-depth inquiry, we aim to provide a thorough evaluation of the phenomena under study.

3.1 | Case selection

This study selected COSMOPlat as the research case for several reasons. *First*, COSMOPlat, a national "cross-industry and cross-field" industrial internet platform, was launched by Haier in 2017, leveraging over 30 years of manufacturing experience. It brings together multiple actors, including focal firms, complementors, and users, making it an ideal case for studying multi-actor value co-creation. *Second*, COSMOPlat enables full-process user participation, creating strong empowerment and social effects. Its success in fostering collaboration among multiple stakeholders makes it a representative and typical platform for exploring how value co-creation drives e-WOM. *Third*, COSMOPlat has fostered 15 industry ecosystems, covering 29 industry categories and connecting nearly 900,000 enterprises. It serves more than 70,000 enterprises and has played a critical role in helping over 4000 companies resume operations during the COVID-19 pandemic. This success has generated significant e-WOM, making COSMOPlat a compelling case for analyzing the impact of digital platforms on value co-creation and reputation management.

Given these reasons, this study maps key events in the multi-actor value creation process of COSMOPlat across its incubation,

initial, and growth stages (as detailed in Appendix A in the supporting information document).

3.2 | Data collection

There is a wealth of publicly available materials about COSMOPlat, including interviews, reports, and books from various sources, providing ample data for this study. To ensure the authenticity and reliability of the information, this study employs data triangulation by cross-verifying the collected data with multiple sources, including both primary and secondary data. The various sources of relevant data and information are outlined in Table 1.

3.3 | Data analysis

Case research requires not only storytelling but also systematic conceptual coding of practical phenomena. To facilitate this, a coding working group consisting of three authors (one teacher and two master's students) was formed to handle the primary data coding. Within 24 h of each interview, the team transcribed the interview texts, organized the notes, and analyzed the data. Additionally, secondary data and information shared by COSMOPlat were integrated, and triangulation was performed on key data points. The team followed up on and clarified any ambiguous descriptions to ensure the accuracy of the data.

Before initiating the data coding process, the research team reviewed the development of COSMOPlat, based on both interview materials and secondary data. The focus was on identifying key events related to e-WOM and multi-actor value co-creation. This preliminary understanding (outlined in Appendix A) provided a foundation for coding and analysis. The team followed the grounded theory methodology of Glaser and Strauss (1968) for data analysis, employing continuous comparisons between data and theory to inductively derive abstract theoretical concepts. For any conflicting views, in-depth discussions were conducted to reach a consensus. Unclear issues were discussed with interviewees, and a consistent conclusion was ultimately reached.

The data coding process consisted of three main steps: open coding, axial coding, and selective coding (Glaser & Strauss, 1968). The detailed process is outlined in the supporting information documents (Appendix I–K). *Open Coding*: The working group decomposed and compared the data, analyzing and labeling each sentence to identify key features and events of COSMOPlat. Through repeated sorting and analysis, concepts were formed. Some sentences were classified into multiple concepts, which were further refined and conceptualized to form initial categories. *Axial Coding*: The working group then extracted and integrated the initial categories, grouping them by their shared meaning. Sub-categories were abstracted based on theoretical literature, and through theoretical and case analysis, these sub-categories were integrated into broader main categories. *Selective Coding*: The working group conducted repeated verification

TABLE 1 Multiple sources and contents of the data.

Data source	Contents of the data	Code
Primary data (semi-structured interviews)		
CEO	- No. of interviewees: 1 - No. of interviews: 2 - Length of interviews: 1 h each	E1 (See Appendix B)
Directors	- No. of interviewees: 2 - No. of interviews: 2 - Length of interviews: 1 h each	
Product managers	- No. of interviewees: 2 - No. of interviews: 2 - Length of interviews: 1.5 h each	
Outstanding employees	- No. of interviewees: 3 - No. of interviews: 3 - Length of interviews: 2 h each	
Secondary data		
Meeting Records (2 Meetings)	Meetings with the developers of COSMOPlat	E2 (See Appendix C)
News/media press (45 Records)	- Public interviews of senior management team - Public speeches - Internet sources (Sina, WeChat, Zhihu, Weibo) - Other media (newspapers, news outlets)	E3 (See Appendix D)
Publications (32 Publications)	Official information from public channels (official website, internal publications, etc.)	E4 (See Appendix E)
Annual reports (25 Reports from 1999 to 2023)	Stock market information	E5 (See Appendix F)
Book	Notes on Haier's transformation	E6 (See Appendix G)
Site visits (two visits)	Field notes and photos from site visits	E7 (See Appendix H)

of the data, combining it with existing theories to clarify the logical relationships among the categories. A theoretical model of e-WOM in COSMOPlat was built, and research propositions were proposed through the iterative process of comparing theory, data, and the emerging framework. By conducting in-depth analysis of each main category, the group aimed to achieve theoretical saturation, ensuring reliable logical relationships, propositions, and conclusions. This process resulted in a theoretical framework that explains the impact of digital platform capabilities on e-WOM in COSMOPlat's B2B context.

4 | THE RESULTS OF CASE ANALYSIS

Our case analysis focuses on two main objectives: (1) identifying the key digital platform capabilities generated by the industrial internet platform, COSMOPlat, for different actors within the platform (Section 4.1). (2) exploring how these digital platform capabilities

generate e-WOM in B2B markets through the multi-actor value co-creation process (Section 4.2). The data structures for key constructs are detailed in Appendices I–K. Based on the findings, we then develop propositions to explain the linkage between digital platform capabilities, the multi-actor value co-creation process, and e-WOM in B2B markets.

4.1 | Digital platform capabilities towards different actors

4.1.1 | Digital ecological capability towards focal firm

The industrial internet platform demonstrates a strong digital ecological capability in relation to its focal firm. As the focal firm of COSMOPlat, Haier has exhibited significant entrepreneurial motivation. In 2017, Haier launched COSMOPlat, becoming the first

industrial internet platform to introduce full-process user participation globally. Through COSMOPlat, Haier has ecologically empowered 15 industry ecosystems, spanning 29 different categories and connecting nearly 900,000 enterprises, while serving more than 70,000 businesses. This reflects its high digital ecological capability (E1: CEO). Additionally, Haier has developed several ecosystem strategies, including community washing solutions, delivery cabinets, and the peripheral ecological strategy for Thunderobot, an initiative incubated by Haier (E6). Leveraging COSMOPlat, Haier has also established the HOPE innovation ecological platform, further demonstrating its digital ecological capability (E2). Based on these observations, we propose the following:

Proposition 1. *The industrial internet platform exhibits a strong digital ecological capability toward the focal firm.*

4.1.2 | Digital coordination capability towards complementors

The industrial internet platform demonstrates a high level of digital coordination capability toward its complementors. COSMOPlat coordinates complementors to provide complementary offerings by integrating and utilizing digital technologies. For instance, COSMOPlat empowered Tsingtao Beer to co-create an industrial internet platform specifically for the beer and beverage industry. This was achieved by coordinating and integrating digital technologies, developing industrial apps, and delivering platform-level solutions through interactive customization and iterative R&D (E3). In another example, COSMOPlat coordinated with its complementor, Heidelberg, to enhance both technology and supply chain resources (E2). Additionally, COSMOPlat collaborated with Luzhong Refractories Co., Ltd. to utilize smart IoT technologies and resources to upgrade the tunnel kiln production line, leading to the launch of a smart kiln renovation project (E4). Based on these examples, we propose the following:

Proposition 2. *The industrial internet platform exhibits a strong digital coordination capability toward its complementors.*

4.1.3 | Digital innovation capability towards users

The industrial internet platform demonstrates a high level of digital innovation capability toward its users. During the creation of a "lighthouse factory," COSMOPlat opened the entire production process to users, allowing them to participate in the enterprise's R&D, design, and manufacturing processes. This significantly fostered users' innovation capabilities (E1: Product Managers of Haier's Whole House Water Use). Users were able to place orders and design products online using their own creativity. One user, Mr. Wang, shared his excitement, saying, "I didn't expect that not only is it efficient, but I can also design it myself and experience the custom

effect virtually" (E3). COSMOPlat has achieved digital innovation by focusing on enhancing the user's end-to-end experience (E4). Based on these insights, we propose the following:

Proposition 3. *The industrial internet platform exhibits a strong digital innovation capability toward its users.*

4.2 | From digital platform capability to e-WOM: The path role of multi-actor value co-creation

4.2.1 | From digital ecological capability to e-WOM in B2B markets: The path role of intrapreneurship in focal firm

Building on its digital ecological capability, COSMOPlat adheres to the ecological concept of "co-construction by large enterprises and sharing by small enterprises." This approach has enabled Haier to foster digital intrapreneurship and achieve comprehensive digital transformation (E1: Chief Technology Officer of Haier). Haier provides an entrepreneurial platform through initiatives like "Chuangkezhi," encouraging employees to transition from traditional roles to entrepreneurial ones, fostering internal entrepreneurship (E1: Managing Director of Haier Biology). In 2023, Haier launched the "Starting Again for Entrepreneurship" initiative, encouraging full employee participation in intrapreneurship (E3).

Intrapreneurship within the focal firm plays a key role in spreading e-WOM in B2B markets. Haier continues to leverage digital technology to expand its intrapreneurial activities. For example, Haier launched an e-WOM management platform to enhance the dissemination of its brand's e-WOM. On the Tmall digital platform, Haier's market share ranks among the top in the industry, and on the JD platform, Haier Smart Home's trade-in transactions increased by 362%. Additionally, Haier's "one-stop customized smart home" capability has driven a 280% increase in smart home transactions, while new product transactions have grown by 56%. This has strengthened Haier's digital competitive advantage and contributed to positive e-WOM dissemination in B2B markets (E3).

COSMOPlat has also introduced the "1 + N + X" industrial internet empowerment model, reducing service complaints by 85%, further building its digital competitive edge and fostering the spread of positive e-WOM (E4). Haier Biomedical, utilizing COSMOPlat's IoT technology, has integrated its biomedical low-temperature storage technology into an ecosystem, creating more ecological and intelligent digital products. While IoT technology has improved performance, it may also introduce risks of platform-layered monopoly competition, potentially leading to negative e-WOM (E3). Based on these findings, the study proposes the following:

Proposition 4. *Digital ecological capability within the focal firm can activate intrapreneurship, which in turn facilitates the dissemination of e-WOM in B2B markets on industrial internet platforms.*

Proposition 4a. *Digital ecological capability within the focal firm can activate intrapreneurship.*

Proposition 4b. *Intrapreneurship in the focal firm contributes to the dissemination of e-WOM in B2B markets on industrial internet platforms.*

4.2.2 | From digital coordination capability to e-WOM: The path role of complements support

COSMOPlat, in collaboration with its complementor Tianyuan Group, has effectively coordinated digital resources to maximize their complementary strengths. Tianyuan Group contributed its extensive experience and models in the chlor-alkali industry to co-build China's first industrial internet platform for the chlor-alkali chemical industry, providing complementary business solutions for COSMOPlat (E3). Similarly, COSMOPlat supported Huanqiu Clothing by coordinating and integrating its digital resources, utilizing both clothing and supplier resources. This enabled digital interaction and resource scheduling throughout the upstream and downstream value chain, enhancing Huanqiu Clothing's complementary business offerings (E2).

Complementor support plays a critical role in disseminating e-WOM in B2B markets. For instance, COSMOPlat's official website features numerous videos showcasing e-WOM. Dewei Power, one of COSMOPlat's complementors, shared its success story, with its general manager stating, "COSMOPlat is the only industrial internet platform in China that has incubated two lighthouse factories." Dewei Power contributed its Haiyun Intelligent Manufacturing Digital Production and Operation Management System, reducing labor input by 48% and increasing tool-picking efficiency by 30%. The general manager expressed a desire for more enterprises to adopt COSMOPlat's Cloud Intelligent Manufacturing to achieve digital transformation, thereby generating positive e-WOM in B2B markets (E1: Directors; E4).

Another complementor, COMPAKS, achieved significant growth through COSMOPlat's comprehensive transformation of its factory manufacturing and supply chain management processes. This resulted in a reduction of the order delivery cycle from 35 days to 20 days, a 7.3% decrease in product costs, and a 62% increase in order growth. Haier's "Industrial Internet Platform Ecological Report" highlighted these digital transformation successes, further disseminating positive e-WOM (E4).

Huanqiu Garments in Qingdao provides complementary garment solutions through COSMOPlat by building a digital manufacturing shop where users act as both designers and consumers. This personalized approach meets user needs and generates positive e-WOM in B2B markets (E3). Additionally, Weizhi Group allows users to directly communicate their preferences for size, fabric, and pattern, enabling "private customization" and producing "one garment, one version for one person." This model of personalized customization has further fueled the spread of positive e-WOM (E3).

However, while COSMOPlat has supported Shanghai Laishi in co-creating a digital health industry ecosystem using patient plasma and diagnostic advantages, there are potential ethical risks. These include the misuse of digital patient information for improper transactions, leading to risks such as information manipulation and data leakage (E3). Based on these findings, we propose the following:

Proposition 5. *Digital coordination capability toward complementors can activate complementor support, which in turn disseminates e-WOM in B2B markets on industrial internet platforms.*

Proposition 5a. *Digital coordination capability toward complementors can activate complementor support.*

Proposition 5b. *Complementor support contributes to the dissemination of e-WOM in B2B markets on industrial internet platforms.*

4.2.3 | From digital innovation capability to e-WOM: The path role of users' reciprocal participation

COSMOPlat exhibits a strong digital innovation capability toward its users, allowing them to deeply engage in the R&D, design, and manufacturing processes, particularly in shaping the "lighthouse factory" (E1: Product Managers). One example of this is the Qingxiang Cloud public service platform, which provides users with an immersive 3D virtual experience. It offers new and existing users coupons or discounts and allows them to enter product parameters or suggest improvements in the "Interactive Customization" module. In the "Open R&D" module, these suggestions are forwarded to top designers worldwide. For example, one user proposed designing a refrigerator with dry and wet storage in the freezer to prevent moisture loss while keeping items fresh. COSMOPlat adopted this feedback, producing a refrigerator that met the needs of the entire family, which enhanced users' reciprocal participation (E3).

Through COSMOPlat, Haier has undergone a digital innovation transformation centered on the entire user experience. Users can upload personalized customization plans to the digital marketing platform to create the products they desire, as well as provide feedback and suggestions during product use (E4).

Users' reciprocal participation plays a significant role in the dissemination of e-WOM in B2B markets. By contributing their creativity and design ideas, users can co-create products tailored to their needs. For example, the Yunxi washing machine, co-designed by many users, received positive e-WOM due to high customer satisfaction. This recognition helped Haier Smart Home achieve a 34% increase in cumulative retail sales on "11.11" and rank first in service reputation for refrigerators, kitchen appliances, and water heaters on the JD Home Appliance Ranking List. This reciprocal participation improves service reputation and promotes positive e-WOM (E3).

Additionally, three Haier employees who enjoy playing Warcraft summarized 13 core issues from 300,000 complaints related to online gaming, creating a customized product that generated positive e-WOM (E3). Users in COSMOPlat can upload their personalized customization solutions, and during product usage, they can provide feedback and suggestions, which has led to widespread praise. Haier has been ranked number one across the entire network for 11 consecutive years, largely due to this user-centric approach and the resulting positive e-WOM (E1: Product Manager of Haier Smart Home Digital Business; E4). Moreover, Haier Zhijia's innovative 5 G+BeiDou positioning technology, based on COSMOPlat, accurately tracks transportation scheduling, providing users with full visibility of services and feedback options. However, as services upgrade, users may become more demanding, and biased or malicious reviews could raise digital ethics concerns (E3).

Proposition 6. *Digital innovation capability toward users can activate users' reciprocal participation, which in turn disseminates e-WOM in B2B markets on industrial internet platforms.*

Proposition 6a. *Digital innovation capability toward users can activate users' reciprocal participation.*

Proposition 6b. *Users' reciprocal participation contributes to the dissemination of e-WOM in B2B markets on industrial internet platforms.*

The theoretical model is presented in Figure 2. The constructs used in this model are defined, and the corresponding propositions, along with supporting interview quotes, are provided in Table 2. The model demonstrates how an industrial internet platform exhibits different

digital platform capabilities toward various actors. Specifically, the platform exhibits digital ecological capability toward the focal firm, digital coordination capability toward complementors, and digital innovation capability toward users. These digital platform capabilities contribute to the dissemination of e-WOM in B2B markets through the process of multi-actor value co-creation. More specifically, digital ecological capability activates intrapreneurship within the focal firm, which in turn helps disseminate e-WOM. Similarly, digital coordination capability activates complementor support, leading to the spread of e-WOM. Lastly, digital innovation capability fosters users' reciprocal participation, further promoting e-WOM dissemination. In summary, digital platform capabilities, multi-actor value co-creation, and e-WOM in B2B markets work together to co-construct a dynamic process for disseminating e-WOM in B2B markets.

5 | DISCUSSION

Grounded in dynamic capability theory and value co-creation theory, this study goes beyond the traditional focus on e-WOM in B2B markets within industrial internet platforms. It introduces a new perspective to explore the mechanism linking digital platform capability, multi-actor value co-creation, and e-WOM in these platforms. Dynamic capability theory provides the foundation for understanding the critical role of digital platform capability in shaping e-WOM in B2B markets on industrial internet platforms. Value co-creation theory offers a framework for understanding how these platforms translate digital platform capabilities into e-WOM by facilitating value co-creation among multiple actors, including the focal firm, complementors, and users. Using case research, we find that digital platform capabilities activate multi-actor value co-creation, which, in

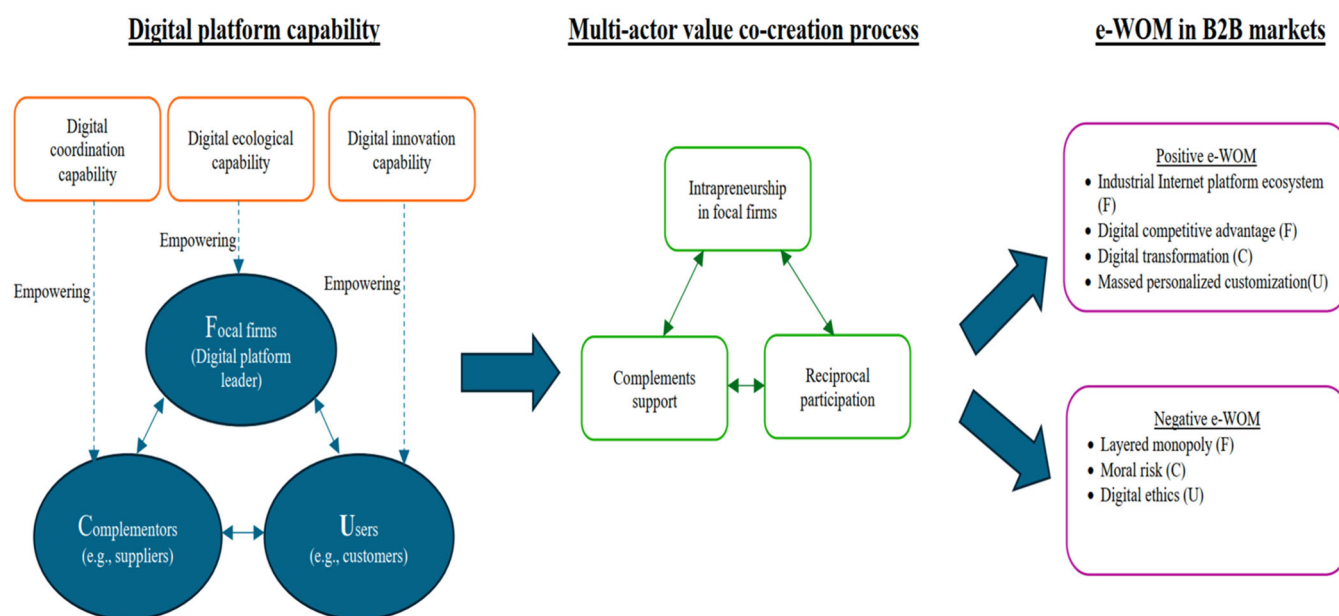


FIGURE 2 The proposed theoretical framework.

TABLE 2 Concept, definition, proposition, and interview quotes of key constructs.

Concept	Definition	Associated propositions	Selective interview quotes
Digital ecological capability	<i>Digital ecological capability</i>: the ability of the focus firm in industrial internet platform to promote the virtual aggregation of entrepreneurial opportunity sets and lead the ecological linkage between entrepreneurial opportunities and entrepreneurial resources in the process of building industrial internet platform (Abbate et al. (2022)). <i>Focal firms</i>: firms that play the role of initiator and leader of the platform in the process of building the industrial Internet platform (Jacobides et al. (2018)).	Proposition 1: Industrial internet platform exhibits a digital ecological capability towards the focal firm.	- COSMOPlat has helped Haier transform from a traditional home appliance company into an open ecosystem, pioneering a new “1 + N + X” industrial internet empowerment model. (E4) - Since 2008, Haier ecosystem has been undergoing an ecological transformation and building a data-sharing platform, leading to innovation and transformation in its digital business model. (E3) - COSMOPlat assists Haier in building big data ecosystem capabilities in the online market to launch popular products, achieving precise marketing and advertising through data collection and mining. (E5)
Digital coordination capability	<i>Digital coordination capability</i>: the ability to coordinate opportunities and resources according to the development needs of complementors and meet their needs in the process of building industrial internet platform (Allred et al. (2011); Leong et al. (2024)). <i>Complementors</i>: one of the actors who provide complements (e.g. products, resources, services, and technologies) for the industrial internet platform. On the one hand, they reflect the complementarities of technology, resources, products and services in terms of horizontal diversity; on the other hand, they reflect the synergy of vertical associations of different complementarities (Benjamin, Hilkert & Hess, 2015).	Proposition 2: The industrial internet platform exhibits a strong digital coordination capability toward its complementors.	- COSMOPlat assists distributors in integrating digital distribution systems and user operation support analysis tools, enabling digital transformation of their marketing models. (E5) - Haier, in developing high-definition wireless LCD televisions, utilizes diverse digital resources including video encoding and decoding technology from NEC Japan and wireless transmission technology from Freescale in the United States. (E2) - Haier Smart Home and Nobel collaborate on joint store establishment and scene co-creation, leveraging digital resources and capabilities to mutually empower and achieve win-win outcomes. (E3)
Digital innovation capability	<i>Digital innovation capability</i>: the capability that industrial internet platform can deploy, utilize, and recombine shared user data resources, thus promoting digital innovation in platform (Annarelli et al., 2021). <i>User</i>: actors that can virtually gather in industrial internet platforms and deeply participate in the design, production and other aspects of products or services (Annarelli et al., 2021).	Proposition 3: The industrial internet platform exhibits a strong digital innovation capability toward its users.	- COSMOPlat collaborates strongly with Tianyuan Group, aggregating both actors' digital resources and complementary advantages, achieving transformation and upgrading for Tianyuan Group. (E3) - Based on the COSMOPlat, Haier coordinates various digital resources including module suppliers, analyzing, and proposing digital solutions based on physical manufacturing lines and logistics resources provided by these suppliers. (E2) - Haier, based on the COSMOPlat, has created its' the first users' experience innovation platform, enabling users to have real-time perception of innovative experiences throughout the entire journey of “purchase, delivery, installation, use, and service”. (E5)

TABLE 2 (Continued)

Concept	Definition	Associated propositions	Selective interview quotes
Intrapreneurship in focal firms	<i>Intrapreneurship in focal firms</i>: focal firm in industrial internet platform create new value and achieve organizational change through digital talent transformation, starting new businesses, developing new products, providing new services, recruiting new employees, and so on (Gawke et al., 2019).	P4: Focal firm: Digital ecological capability→Intrapreneurship in focal firms→e-WOM	Haier integrates plasma and blood component collection, cold chain transportation, and other fields (<i>digital ecological capabilities</i>) based on its industrial ecological capabilities, creating a new brand of Yingkang Health Ecology, supporting the development of Haier's health industry (<i>intrapreneurship in focal firm</i>), enhancing the integration and innovation of the blood ecological industry chain, and building a health digital platform ecosystem with Haier Yingkang, activating the digital word-of-mouth effect on COSMOPlat.
Complements support	<i>Complements support</i>: the process that complementors in industrial internet platforms provided complementary products or services, and then realize value added and creation through network effects (Benlian, Hilbert, & Hess (2015); Boudreau & Jeppesen (2015); Zhu (2019))	P5: Complementor: Digital coordination capability→Complements support→e-WOM	As one of the complementors in COSMOPlat, Heidelberg (Complementor) initially received the empowerment of COSMOPlat in technology and supply chain resources (<i>digital coordination capabilities</i>), and later expanded the complementary basic block functions of COSMOPlat by complementary embedding its own platform into COSMOPlat, expanding from the home appliance industry to the denim clothing field (<i>complements support</i>), assisting complementary firms in digital transformation and enhancing Haier's reputation. (E2)
Reciprocal participation	<i>Reciprocal participation</i>: the process that focuses interaction and mutual benefit between users and other actors, emphasizing on user participation and decision-making (Huang et al. (2017)).	P6: User: Digital innovation capability→Reciprocal participation→e-WOM	Based on the COSMOPlat, Haier and its users engage in digital innovation activities through interactive collaboration (<i>digital innovation capability</i>) and develop personalized solutions (<i>user reciprocal participation</i>) based on the needs of over 2000 home fitness scenarios proposed by users. This personalized customization model effectively improves customer satisfaction and reputation. (E2)
Positive e-WOM	<i>Positive e-WOM</i>: refers to the positive information content of the products or services-related discussions shared by the focal firm, complementors and users in an industrial internet platform (Chatzipanagiotou et al. (2023)).	/	- COSMOPlat has built a platform ecosystem that integrates suppliers, factories, and users, thereby promoting the spread of e-WOM effects. (E4) - COSMOPlat has assisted Haier in constructing an integrated ecological network encompassing channels, marketing, services, logistics, and recycling. This initiative lays the foundation for building a platform ecosystem and generates positive e-WOM. (E5)

(Continues)

TABLE 2 (Continued)

Concept	Definition	Associated propositions	Selective interview quotes
Negative e-WOM	Negative e-WOM: refers to the negative information content of the products or services-related discussions shared by the focal firm, complementors and users in industrial internet platform (Filieri et al. (2020a)).	/	- Haier Biomedical, based on the IoT technology of the COSMOPlat, may integrate its own biomedical low-temperature storage technology into the ecosystem, which may lead to layered monopolistic competition on the platform and generate negative digital word-of-mouth effects. (E3) - Based on the COSMOPlat, Haier collaborates with Hegang to build the first green and low-carbon home appliance and home steel industry chain. Some employees may use these advanced digital technologies to engage in improper transactions, leading to moral risks such as information manipulation, data leakage, and malicious fraud. (E3)

turn, leads to the dissemination of e-WOM in B2B markets within industrial internet platforms.

6 | THEORETICAL CONTRIBUTIONS

Our study makes three significant contributions to the existing literature. *First*, this study extends the understanding of e-WOM from B2C contexts on consumer internet platforms to B2B contexts on industrial internet platforms. Previous research on e-WOM has primarily focused on consumer-driven e-WOM spread through specific channels (Filieri & McLeay, 2014), such as online communities (e.g., TripAdvisor), e-commerce platforms (e.g., Amazon, Booking.com), social networking sites (e.g., WeChat), instant messaging apps (e.g., WhatsApp, Snapchat), video-sharing platforms (e.g., TikTok), content providers (e.g., TechRadar), interest groups (e.g., Positively Sustainable), and search engines (e.g., Google Reviews) (Toth et al., 2022). However, with the emergence of new industrial internet platforms like COSMOPlat and ROOTCLOUD, research on e-WOM in B2B markets within these platforms is still in its early stages, especially in terms of qualitative studies (Chatzipanagiotou et al., 2023). Various B2B networks exist where multiple actors can activate e-WOM on industrial internet platforms. Our research, using a case study approach, addresses this gap by revealing how e-WOM operates in B2B markets within industrial internet platforms.

Second, this study views digital platform capability as a dynamic digital capability and breaks it down into three types: digital ecological capability toward the focal firm, digital coordination capability toward complementors, and digital innovation capability toward users. This expands dynamic capability theory from its traditional focus on a single actor to encompass multiple actors. While some

scholars recognize digital platform capability as an organization's dynamic capability, emphasizing its role in value creation (Cenamor et al., 2019; Lenka et al., 2017; Li, Yang, et al., 2023a), they often overlook the multi-actor nature of these capabilities. This study addresses that gap by categorizing digital platform capabilities based on their focus: ecological capabilities for the focal firm, coordination capabilities for complementors, and innovation capabilities for users. These categories align with Teece et al. (1997) dynamic capability framework of sensing, seizing, and transforming opportunities. By doing so, this study sheds light on the mechanism through which digital platform capabilities influence the formation of e-WOM in B2B markets on industrial internet platforms, responding to Khin & Ho's (2019) call to expand dynamic capability theory into digital contexts.

Third, this study reveals that multi-actor value co-creation serves as the bridge connecting digital platform capabilities with e-WOM in B2B markets on industrial internet platforms. While some scholars have explored value co-creation between platform owners and users (de Oliveira & Cortimiglia, 2017), they often neglect the role of complementors (Ren et al., 2015). To address this, we deconstruct multi-actor value co-creation into three components: intrapreneurship in the focal firm, complementor support, and users' reciprocal participation. This aligns with Cova & Salle's (2008) view that enterprises, customers, manufacturers, and professional service providers can jointly interact to create value. It also responds to Annarelli et al.'s (2021) call for more in-depth research on digital platform capability and multi-actor value co-creation. By clarifying the concept and scope of multi-actor value co-creation, this study enhances our understanding of how value co-creation operates in the context of industrial internet platforms and extends value co-creation theory from a single-actor framework to one that includes multiple actors in the era of digital transformation.

7 | MANAGERIAL IMPLICATIONS

The results of this case study offer important practical implications. *First*, e-WOM in B2B markets within industrial internet platforms can be a double-edged sword. On the positive side, it highlights aspects such as the platform's ecosystem, digital competitive advantage, digital transformation, and mass personalized customization. On the negative side, it may draw attention to issues such as layered monopolies, moral risks, and digital ethics concerns. Managers should aim to fully leverage positive e-WOM while minimizing the risks of negative e-WOM.

Second, this study provides strategies for building digital platform capabilities tailored to different actors. Industrial internet platforms must develop specific digital capabilities for different stakeholders. For example, cultivating digital ecological capabilities for the focal firm, digital coordination capabilities for complementors, and digital innovation capabilities for users. These tailored strategies help establish long-term competitive advantages and activate e-WOM for the platform (Barney et al., 2011).

Third, industrial internet platforms should encourage multi-actor value co-creation and recognize its role as a pathway between digital platform capabilities and e-WOM in B2B markets. Value co-creation should involve not only the focal firm and users but also complementors. Therefore, platforms must emphasize the crucial role of external actors (e.g., complementors, users) as well as internal employees. Establishing a collaborative relationship among the focal firm, complementors, and users is key. This approach encourages all actors to jointly develop and utilize new digital opportunities, acquire and manage new digital resources, create and share new business value, and promote intrapreneurship, complementor support, and users' reciprocal participation.

8 | LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Although this study provides valuable insights into the role of multi-actor value co-creation in linking digital platform capability with e-WOM in B2B markets on industrial internet platforms, there are several limitations that should be addressed:

First, the study focuses on Haier, a Chinese enterprise, and many secondary sources come from subjective evaluations of Haier or its COSMOPlat platform. This may present an overly positive perspective. While some data sources include interviews with Haier's customers or partners, these may not be sufficient. Future research could benefit from cross-national case studies that incorporate external or independent data sources to provide a more balanced view. *Second*, this study follows a strict single case study approach (Eisenhardt, 1989; Pettigrew, 1990; Yin, 2009) and ensures reliability through data triangulation (Flick et al., 2004). However, the generalizability of the findings remains limited. Future research could adopt a large-sample approach, enabling comparison and identification of patterns across multiple cases, which would enhance the

theoretical implications and generalizability of the findings. *Third*, the mechanisms by which e-WOM is activated in B2B markets on industrial internet platforms may vary depending on the platform's stage of development. Future research should explore the dynamic mechanisms of digital platform capability on e-WOM in B2B markets across different stages of platform development, using a longitudinal analysis to capture these changes over time. *Fourth*, while digital platforms provide new opportunities for e-WOM in B2B markets, this study focuses solely on digital platform capabilities. To deepen the understanding of e-WOM in these markets, future research should consider taking a multi-dimensional approach, exploring other factors that may influence the generation and dissemination of e-WOM on industrial internet platforms.

9 | CONCLUSION

The key factor driving the dissemination of e-WOM in B2B markets within industrial internet platforms is the platform's ability to leverage different digital platform capabilities for various actors, facilitated through a multi-actor value co-creation process. Our findings highlight that industrial internet platforms exhibit digital ecological capabilities toward the focal firm, digital coordination capabilities toward complementors, and digital innovation capabilities toward users. These tailored capabilities are instrumental in fostering the co-creation of value among multiple stakeholders, which in turn drives the spread of e-WOM in B2B markets.

Specifically, digital ecological capabilities promote intrapreneurship within the focal firm, enabling the activation of positive e-WOM. Digital coordination capabilities enhance complementor support, further contributing to the dissemination of e-WOM. Similarly, digital innovation capabilities encourage users' reciprocal participation, which also fosters the generation of positive e-WOM.

In summary, this study demonstrates that industrial internet platforms can strategically utilize digital platform capabilities to co-create value with multiple actors, thereby activating and disseminating e-WOM in B2B markets. By integrating dynamic capability theory with value co-creation theory, this research offers a novel perspective on how platforms can leverage their capabilities to foster competitive advantages through enhanced collaboration and interaction. Ultimately, the key takeaway is that "Different Roles, Different Strokes"—industrial internet platforms can effectively facilitate the spread of e-WOM by aligning their digital capabilities with the specific needs and roles of the focal firm, complementors, and users.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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