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Guest Editorial: Artificial Intelligence for B2B Marketing: Challenges and Opportunities

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Abstract

A growing body of evidence indicates that implementing artificial intelligence (AI) at scale can improve market performance in B2B settings by accelerating decision-making process. Despite its popularity in the B2B sector, there have been few academic studies about this phenomenon in the context of industrial markets. Currently, AI research focuses predominantly on the marketing aspect of consumers, but in fact industrial data is rarely analyzed to address the issues regarding organizational behavior, product innovation, supply chain management, and B2B customer relationship management. The special issue presents 16 papers that explore why do B2B companies seek to use AI for marketing purposes, how AI can be used to foster innovation and use supply chain networks, how AI can enhance B2B customer experience and customer relationship management, and how AI can be used to develop dynamic capabilities on B2B marketing. These research articles provide insights into various industrial contexts and have applied both qualitative and quantitative approaches to identify AI applications for value creation.

Keywords: Artificial Intelligence; B2B Marketing; Customer experience; AI chatbot; supply chain management; knowledge creation; adoption of AI; B2B marketing strategy; innovation

1. Introduction

Artificial Intelligence (AI) is revolutionizing many aspects of B2B marketing activities. According to the MIT Sloan Management Review's report, 90% of surveyed marketers from the B2B professional services sector recognize that AI could be a significant source of competitive advantage (Ransbotham et al., 2019). It is predicted by Gartner (2018) that one-third of all B2B marketers will adopt AI-enabled technologies, such as virtual customer assistant (VCA) and chatbot, to drive marketing automation by 2020. As a current example, Siemens AG, a large industrial manufacturing company in Europe, applies machine learning to analyze vendor proposals to support decision making. This has resulted in a 20-30% acceleration of the tendering process (Ransbotham et al., 2019).

Academics and practitioners have recognized a number of benefits of using AI techniques in B2B settings. These include driving sales (Syam & Sharma, 2018), reshaping the buyer and supplier relationship (Gordini & Veglio, 2017), creating targeted B2B marketing campaigns (Liu, 2020), and delivering decision-support for managers (Jabbar, Akhtar, & Dani, 2019). Yet despite the potential transformative benefits, so far AI adoption is confined to a finite group of leading B2B marketers. Furthermore, while the majority of the extant literature has focused on the technological understanding of AI and its ethical and social implications (see for example, Alter et al., 2021; Ashok et al., 2021; Collins et al., 2021; Coombs et al., 2021; Dwivedi et al., 2021; Johnson et al., 2022; Samuel et al., 2022; Stahl, 2021), our knowledge of the implications of AI for B2B marketing is far from conclusive.

Recently, academic attention has turned to a number of research topics driven by the challenges of AI implementation. First, generating economic value with AI is heavily reliant on having access to high quality and quantity data, and managing those data effectively. However, data for B2B marketing are relatively rare and their value is difficult to extract (Lilien, 2016).

Given this lack of precious data, and the fact that what data are collected are often irrelevant and poorly managed, B2B marketers often miss out on actionable insight, which in turn leads to ineffective marketing and sales strategies. Addressing the lack of data orchestration is therefore a priority for AI use in B2B marketing.

Second, using AI to power B2B sales is still in its infancy and has not yet achieved a significant impact. Recent studies have sought to explore the potential impact of AI on B2B sales management (e.g., Syam & Sharma, 2018; Paschen, Kietzmann, & Kietzmann, 2019), but to date there has been no research that examines how AI can optimize customer communication and engagement or how AI-fostered new product development can be achieved with governance of AI-related resources and capabilities. These issues are worthy of deeper investigation, as many firms have been found to continually invest in AI in order to maintain competitiveness (Han et al., 2021; Ransbotham et al., 2019).

Third, harvesting and processing customer data using biased AI algorithms gives rise to serious issues regarding privacy concerns, lack of transparency and ineffective marketing communication (Davenport et al., 2020). For instance, irrelevant and invasive advertising circulated by automatic email and social media marketing with AI often exasperate B2B customers. Such ineffective marketing initiatives created by AI may result in significant brand and reputation harm. It is therefore imperative that B2B marketers rethink how to minimize ethical concerns when designing AI solutions for B2B marketing.

Finally, managing AI is not merely a simple technical issue. Rather, it requires seamless synergy between human beings' capabilities and knowledge and AI technologies, enabling them to work cooperatively (Cao et al., 2021; Duan et al., 2019; Dwivedi et al., 2021). Some B2B firms aim to achieve AI explainability for making sound marketing decisions by optimizing collaboration between human and AI (Siala & Wang, 2022; Wang, Xiong, & Olya, 2020).

However, while these firms have a clear goal, they may find it difficult to integrate smoothly the work of marketing professionals and that of AI algorithms/robots.

Responding to the above challenges, 16 research papers are included in this special issue. Each of them has gone through two to four revision and review cycles. These papers cover six themes relating to AI for B2B marketing, as presented in the following organizing framework (see Figure 1). This framework reflects the motivation behind this special issue, i.e., how AI can be leveraged to increase the economic impact of B2B marketing, and explore ways to tackle the technological, ethical and governance challenges that AI might face in the B2B marketing context. Further, this framework classifies the papers into six themes: (1) why do B2B companies seek to leverage AI for marketing purposes?, (2) leveraging AI for fostering innovation, (3) utilizing AI to harness supply chain networks, (4) developing dynamic capabilities through AI in B2B markets, (5) designing AI for improving B2B customer experience and customer relationship management, and (6) towards a new perspective/framework on B2B marketing using AI. These papers have employed case studies, surveys, text mining and other algorithms presenting a number of approaches for investigating the relevant topics relating to AI for B2B marketing. This special issue includes contributions from global marketing community and data used in these contributions come from different countries including the United States, China, India, EU countries, South African, and Australia. In the following sections, we scan the papers included in the special issue and discuss how they contribute to the B2B marketing literature from the AI implementation perspective.

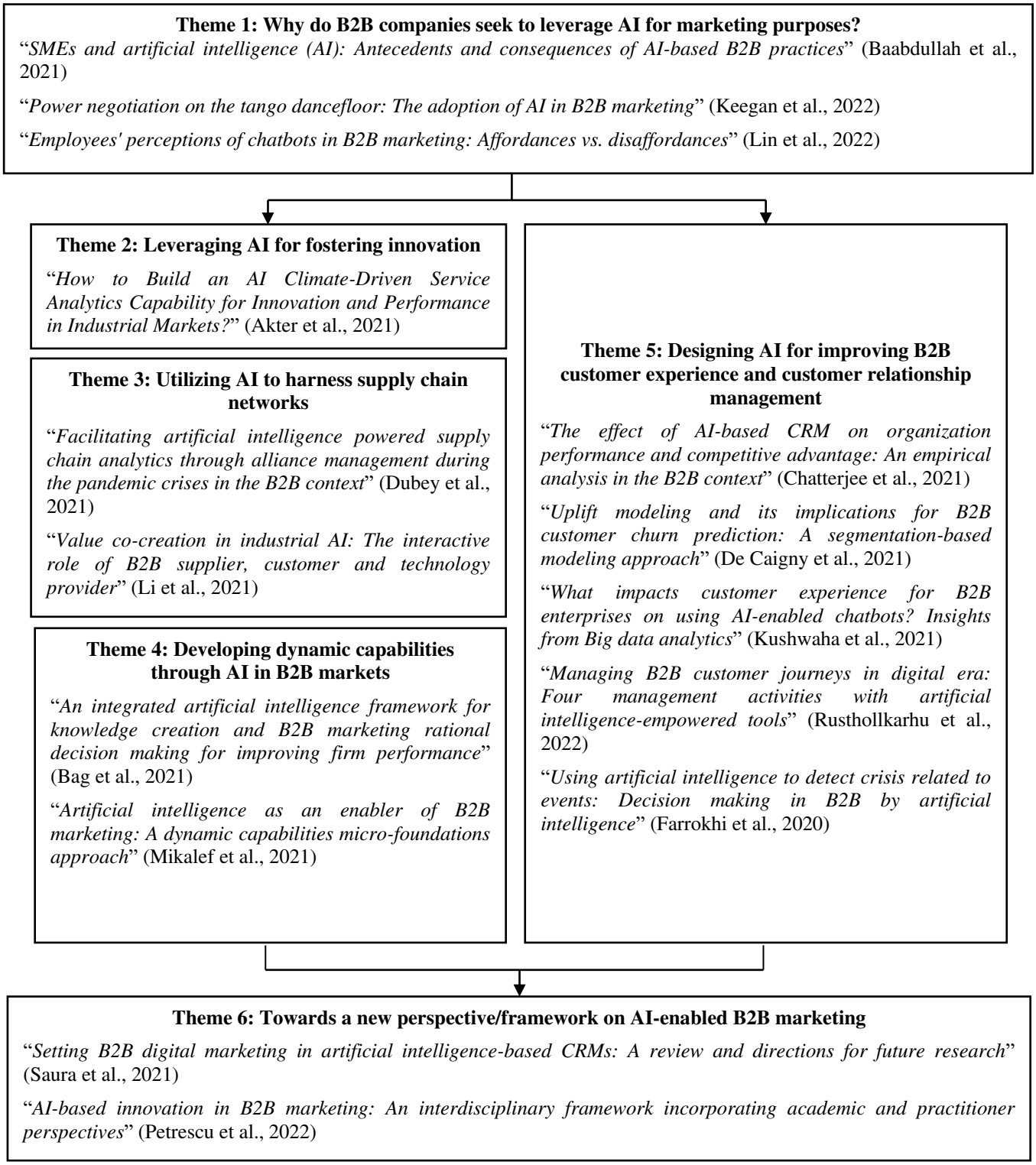

Figure 1. Organizing framework of this special issue: The potential of AI in B2B marketing

2. An overview of the contribution included in this special issue

2.1. Why do B2B companies seek to leverage AI for marketing purposes?

In light of AI's enormous potential for B2B companies, the first theme of papers examines the antecedents and consequences of adopting AI. Using survey data collected from 392 B2B Small and medium-sized enterprises, Baabdullah et al. (2021) outline an integrative framework for examining the antecedents of AI practices, which consist of AI enablers, AI readiness, AI-based interaction, and AI-enabled relational governance. Among these antecedents, this study suggests that AI technology roadmapping, attitudes, AI infrastructure and awareness are key determinants of AI acceptance. Likewise, Keegan et al. (2022) explore the adoption of AI in B2B marketing by conducting 20 semi-structured interviews. Based on the power dependence theory and service network literature, this study proposes a model of "power tango dancefloor" that describes how groups of actors (i.e., focal firms, suppliers, tech giants, and customers) engage in a dynamic AI adoption ecosystem through power negotiations. This study highlights the complexity and dynamics of AI adoption as a key insight of their study. In implementing AI solutions, managers should take into account possible trade-offs between accuracy and cost. Both papers (Baabdullah et al., 2021; Keegan et al., 2022) offer useful guidance of AI adoption to B2B managers.

With advances in AI technologies, chatbot has rapidly evolved into an innovative means of interacting with B2B customers in the sales process and customer service. By examining the affordance and disaffordance of AI chatbots affecting employees' perceptions of AI chatbots adoption, Lin et al.'s study (2022) attempts to address the question of how to improve employees' positive psychosocial perceptions about chatbots in B2B marketing. The results of this study based on data collected from 228 B2B marketing employees suggest that technical features of AI chatbot such as automatability and personalization have the potential to achieve chatbot

effectiveness, thereby enhancing employees' positive psychosocial perceptions of chatbot adoption.

2.2. Leveraging AI for fostering innovation

AI is enabling innovation in many business sectors by redefining traditional customer and supplier collaborations and business models, reconfigurating firm resources, and creating new marketing knowledge. One of the accepted papers of this special issue, Akter et al. (2021) explores this theme by investigating how service innovation can be achieved by AI climate-driven service analytics capability. Akter and his colleagues define AI climate as the B2B service providers' shared perceptions of the procedures, practices and policies that support the AI-based service provision. Integrating this AI climate with cognitive service analytics, companies can develop a unique capability to "describe, diagnose, predict and prescribe industrial marketing situations, understand industrial marketing scenarios and make decisive actions to enhance industrial market performance" (Akter et al., 2021, p. 261). Using two empirical studies (Study 1 with 30 in-depth interviews and Study 2 with a survey collected from 276 service managers), Akter et al. (2021) finds that the critical role of AI climate and cognitive service analytics capability in triggering service innovation. Meanwhile, service innovation significantly mediates the relationship between analytics climate and market performance and cognitive service analytics capability and market performance.

2.3. Utilizing AI to manage supply chain

AI technologies are emerging as a key tool in harnessing supply chain due the intense pressure of global supply chain caused by pandemic crisis. The need of AI for companies to manage their supply chain effectively to address financial and managerial challenges has become

crucial. Researchers and practitioners are capitalizing on AI to support complex decision-making and perform rapid clinical analysis to identify and mitigate risks in supply chain networks. Li et al. (2021) examines the interactive role of suppliers, customers, and technology providers in B2B marketing when these entities develop and employ industrial AI. Using a value co-creation view and a service-dominated logic, the authors identify different types of value (e.g., strategic co-planning, functional, and customer experience) that are created by B2B suppliers, customers, and AI providers, as well as the critical capabilities they need to participate in these processes.

In the context of COVID-19 crisis, Dubey et al. (2021) develop dynamic capabilities, which combines alliance management capability with AI driven supply chain analytics capability, to address global supply chain disruption caused by COVID-19 pandemic. Collecting data from the Indian auto components manufacturing industry, Dubey et al. (2021) conclude that with the aid of AI-powered supply chain analytics, alliance management capability enhances firms' operational and financial performance. According to their findings, managers need to focus on developing alliance management capabilities in order to turn supply chain analytics into superior organizational performance, while policy makers should formulate policies to help companies in developing countries to understand how AI powered supply chain analytics capability can be developed during a pandemic crisis with the consideration of contingent environmental conditions.

Drawing on data from 15 in-depth interviews with C-level executives, Yan et al.'s study (2022) develops a novel framework of branding 4.0 in industrial marketing settings by considering the potentials of machine learning, modularity, and supply chain integration. This framework offers a compelling approach to support brands transitioning to branding 4.0. Specifically, it has shown that data analysis reinforced by machine learning, knowledge conversion, and transmission capabilities are beneficial for modular management and supply

chain tasks, including the optimization of the co-design process and timely responses to changing customer needs.

2.4. Developing dynamic capabilities through AI in B2B markets

From a human and AI hybrid perspective, organizations can train AI agents to augment their business operations and processes (Rai et al., 2019). From a dynamic capability view, AI can help firms to develop high-level organizational ability to reconfigure resources to address rapidly changing market environments (Wang et al., 2019). As defined by Mikalef et al. (2021) in this special issue, AI-enabled dynamic capabilities allow organizations to sense and seize opportunities for capturing value, and transform businesses to continue renewing themselves. Using data from three Norwegian large companies, Mikalef and his colleagues develop three propositions that emphasize how AI can support B2B marketing operations through enabled sensing, seizing, and transforming. They also point out the factors relating to organizational structure, business model, and individual that can influence value realization from AI.

In addition to develop dynamic capabilities, AI has the potential to capture customer knowledge from customer data and enhance B2B markers' ability to understand market dynamic environments. For example, information such as B2B users' web browsing behaviors, transactional history and patterns, and social media content, if it is analyzed in a meaningful way, can enable B2B marketers to make business decisions and potentially develop innovative products or services. This information is considered as external market knowledge that can be obtained using AI and maintained by knowledge management practices. Bag et al.'s (2021) study answer two interesting questions relating to this theme: (1) can AI facilitate knowledge creation in B2B marketing?, and (2) can AI-powered knowledge creation improve rational marketing decision making and firm performance? As a response to these two questions, Bag et al. (2021)

conduct empirical research in South African mining B2B companies, and their results suggest that the ability to create customer, user, and external market knowledge through AI can improve marketing-rational decision making for B2B companies. In particular, this study points out the important AI technical features such as access to large, unstructured and fast-moving data for analysis, the integration of external and internal data for analysis and social features such as training and collaboration with universities in developing AI capability for knowledge creation.

2.5. Designing AI for improving B2B customer experience and customer relationship management

As AI has become more prevalent, customer interactions in service have been accelerated across multiple channels or touchpoints, resulting in massive customer data collection. Such customer data enables firms to optimize customer experience and journey and manage customer relationship. One of the challenges faced by firms is the integration of customer experience management and AI. Customer data, particularly in a B2B context, is complex because it is collected from multiple sources as well as from diverse stakeholders. The vast majority of B2B organizations have difficulties harnessing customer data and utilizing its potential because managing and analyzing customers' data accurately takes skills and investments. To address this issue, Chatterjee et al. (2021) propose a framework underpinned by institutional theory and resource-based view to examine how AI-enabled customer relationship management (CRM) can be implemented to harness B2B relationships. The authors have presented three compelling findings – (1) Integration of AI and CRM can strengthen B2B engagement, (2) to make AI-enabled CRM successful, the quality of implementation process, organizational fit and individual fit are key determinants, and (3) Support from the leadership of a firm is crucial to its success when using AI-CRM.

Further, using a dataset of 6432 customers of a European software provider, De Caigny et al. (2021) have devised a compelling approach - a segmentation-based modeling approach - to detect customers' churn behavior for B2B customer retention management. Through this approach, this study contributes to the B2B customer retention management by providing new insights on how to target risky customers who may churn in customized, segment-level, and global visualizations. Mining social media data using sentiment analysis, hierarchical cluster analysis, and topic modelling, Kushwaha et al. (2021) identify the influencing factors of AI-based chatbots from the lens of customer experience theories for B2B firms. The authors suggest that customer experiences with AI chatbots in B2B enterprises are influenced by the bots' design, their ability to use technology, and their trust in the brand. Moreover, Rusthollkarhu et al.'s (2022) paper provides a comprehensive understanding of how to utilize AI-empowered tools to manage four activities of B2B customer journey including analyzing, designing, engaging, and guiding. Over 150 digital tools are mapped, and their AI functions are identified to help B2B practitioners implement AI for customer journey management. These studies reframe traditional customer experience management from a digital transformation perspective and highlight the fact that a wide range of AI application can be implemented to better craft customer experience and thus improve our current understanding of CRM.

Finally, using a publicly available dataset containing email communication belonging to 150 users, mostly senior management of Enron crisis, Farrokhi et al. (2020) develop a model to detect critical crisis related events in B2B firms. The authors suggest that using AI approach to analyze data such as daily emails within an organization is an effective way to spot potential organizational crisis or harm to customers and business activities, thereby preventing future crises.

2.6. Towards a new perspective/framework on AI-enabled B2B marketing

This special issue has been exposed to a new framework for AI-enabled B2B marketing through studies included in this theme. These papers have shown the unique potential of AI and the agenda for future research on AI in B2B marketing. By conducting a literature review, Saura et al. (2021) improve our understanding of AI technologies in B2B digital marketing by proposing a typology of AI-based CRM (i.e., analytical CRM, operational CRM, and collaborative CRM) and exploring its functionalities. Based on the results of literature analysis, the authors highlight that marketing growth and successful online brand building depends on well-defined B2B digital marketing strategies informed by AI-based CRMs and clear guidelines and actions on AI-based CRM use. Likewise, by employing a bibliometric analysis of AI in the B2B literature and semantic content analysis, Petrescu et al. (2022) propose an emergent B2B marketing framework for AI innovation that contains four major analytical themes: (1) collection of IT tools in resource environment, (2) collection of innovative actors and agents, (3) marketing knowledge and innovation, and (4) communication and exchange facilitator. Each theme entails suggested research questions that merit scholarly attention.

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