



AI-capable relationship marketing: Shaping the future of customer relationships[☆]

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ABSTRACT

This study explores the interlinkages between artificial intelligence (AI), dynamic capabilities, and relationship marketing (RM) outcomes. Drawing upon insights from dynamic capabilities and RM theory, this study delineates the strategies and initiatives organizations can adopt using machine learning (ML) and AI to enhance their adaptability to changing market dynamics and customer preferences, in order to develop and maintain stronger relationships with their customers. Based on qualitative data from 67 interviews with managers in different organizations in India, this study contributes to existing theoretical knowledge and managerial practices, as it proposes a comprehensive research framework that demonstrates how AI technologies can enhance customer relationships throughout the entire customer journey. More specifically, it adopts a dynamic capabilities lens to extend our understanding of the marketing applications of AI by conceptualizing the dual role of AI as (a) a distinct organizational capability and (b) an enabler of dynamic capabilities, improving firms' position to sense, seize, and transform organizational resources and fortify customer relationships. Our findings also highlight several facilitators and barriers to the adoption of AI, both as a dynamic capability and as an enabler for RM.

1. Introduction

Recently, the marketing discipline has witnessed the introduction of several emerging technologies, such as artificial intelligence (AI), machine learning (ML), blockchain technology, and automation solutions (Mariani et al., 2023; Treiblmaier & Petrozhitskaya, 2023; Vaid et al., 2023). From a strategic perspective, the importance of AI and ML in marketing is steadily increasing (Noble & Mende, 2023; Vlačić et al., 2021; Wu and Monfort, 2023), such that 72 % of marketers cite AI as a business advantage (Mustak et al., 2021). Organizations like Google, Rare Carat, Spotify, and Under Armour are just a few examples of firms bolstering their performance through the adoption of AI-based platforms, such as Microsoft Cognitive Services, Amazon Lex, Google

Assistant, and IBM Watson (Dhiman et al., 2023; Vlačić et al., 2021).

AI has emerged as a potential transformative force, able to propel businesses into a new era of relationship marketing (RM) (Steinhoff & Palmatier, 2021) by cultivating and sustaining meaningful relationships with consumers (Chintalapati & Pandey, 2022). An understanding of the link between AI and RM is becoming increasingly crucial (Obaze et al., 2023; Palmatier & Steinhoff, 2019; Steinhoff & Palmatier, 2021; Thachon et al., 2021). AI-enabled technologies allow firms to strategically nurture customer relationships by supporting pervasive customer communication, capture customer knowledge with the growing availability of customer data, and enhance the ability to understand dynamic market environments (Dwivedi & Wang, 2022). Furthermore, marketers can adopt AI- and ML-based technologies to increase customer

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satisfaction and loyalty (Simchi-Levi & Wu, 2018), better understand customer needs and preferences (Battisti & Brem, 2020; Das et al., 2024), increase customer retention (Arias-Pérez & Huynh, 2023), cultivate more profitable customer segments (Rust & Huang, 2014), create competitive advantage (Chintalapati & Pandey, 2022; Mustak et al., 2021), and improve their organizations' operations and processes (Rai et al., 2019) in highly dynamic market environments.

Thus, the exponential advancements in AI technologies are reshaping the dynamics of interactions between customers and firms (Steinhoff et al., 2019), and managers have a keen interest in understanding these new technology tools and leveraging their potential benefits. However, the rapid pace of the development of AI and ML techniques has outstripped current theoretical understanding, posing significant challenges for managers in effectively implementing and utilizing these tools (Abou-Foul et al., 2023; Steinhoff & Palmatier, 2021). Although understanding the implementation of AI to support RM operations and expected outcomes is imperative from a theoretical and practical standpoint, there is still a lack of nuanced understanding about how AI can impact RM and lead to the development of more holistic strategic models that can support tangible outcomes for both firms and customers, especially in an era of high market turbulence (Chaturvedi et al., 2024; Mikalef et al., 2021). Current studies have predominantly focused on the adoption of specific AI technologies, without considering how they can be strategically harnessed by organizations holistically to support their operations throughout the customer journey, from enhancing customer awareness to supporting retention and advocacy, or identifying the facilitators and barriers affecting this process. This has resulted in a gap in existing knowledge, a narrow view of the RM applications of AI, and a limited conceptual association of AI with marketing theory. Moreover, the existing literature focuses predominantly on firm-level analysis of the applications of AI technologies, such as an organization's employees' use of an AI integrated CRM system (Chatterjee et al., 2021). This obscures the real importance and impact of AI both for organizations and their customers and limits our understanding of its theoretical and practical interconnections (Abou-Foul et al., 2023).

Prior studies in AI in marketing also fail to identify those capabilities required to successfully change and adapt (Teece, 2007) to avoid the 'competency trap'—that is, when organizations become so competent in doing things in a particular way that they fail to adapt to changes in their environment, potentially resulting in a decline in their performance (Abou-Foul et al., 2023; Mu & Jiang, 2024). Further demonstrating the need to adopt a more dynamic and holistic lens to explore AI adoption for relationship management, Chatterjee et al. (2024) highlight that unless an organization reacts and responds to the dynamism of the market environment, the implementation of AI to improve customer

relationships may fail. Table 1 presents some of the key studies in this area that support the positioning of this research.

Based on the above, the extant literature highlights a gap in our current understanding of how businesses can strategically incorporate and leverage the capabilities of AI to develop and support customer relationships, avoiding associated issues such as lack of trust, power asymmetry, and privacy and ethical concerns (Chatterjee et al., 2024; Chaturvedi et al., 2024; Grewal et al., 2021). The importance of this research is further underscored by fast-paced and frequently changing market conditions (Pillai et al., 2022; Zhang et al., 2021) where customer preferences undergo frequent shifts throughout the customer journey, posing significant challenges for RM (Dubey et al., 2021). Although AI could be pivotal in these dynamic environments to support RM, currently, there is limited understanding of its role in enhancing customer relationships and experiences throughout the customer journey (Chaturvedi et al., 2024; Dhiman et al., 2023; Hu et al., 2021). Thus, gaining a deeper understanding of how AI technologies can be strategically leveraged for RM is not only interesting from an academic point of view but also has significant practical relevance, as practitioners seek to gain a competitive edge by deploying AI-enabled technologies (Liu et al., 2024; Dubey et al., 2021; Kumar et al., 2021) in dynamic markets.

To explore these research gaps, the present study addresses the following research questions:

- (1) What is the role of the firms' AI capabilities in the development and implementation of effective and holistic AI-enabled RM strategies?
- (2) How do AI dynamic capabilities contribute to the development of effective AI-enabled RM throughout the customer journey?
- (3) What are the facilitators and barriers to using AI to develop dynamic capabilities and promote RM?

To address these research questions, this study integrates RM theory, insights from recent studies on AI in marketing, and the results of a thematic analysis of data from 67 interviews with managers from various companies in India to develop further our understanding of how firms can leverage AI to enhance customer relationships. We have chosen an emerging economy context (i.e., India) due to the dearth of empirical works on AI adoption in developing countries (Wamba et al., 2021). Despite its huge success in the IT sector, India has inherent socio-economic struggles and thus can provide an interesting case to study organizational use of AI. Indian organizations, while leveraging growing market and economic development, face challenges that are common in other developing countries (Raj et al., 2020). Hence, while some of this paper's findings delve into contextual peculiarities, the empirical

Table 1
Summary of Selected Relevant Studies.

Author	Main theories	Antecedents	Moderators	Mediators	Outcomes
Grewal et al. (2021)	Relationship marketing in B2C and B2B context	Increased value from customization			Increased value from efficiency Power asymmetry
Mikalef et al. (2021)	Dynamic capabilities	Lack of trust Enhance/enable (AI)		Dynamic capabilities (Sensing, Seizing, Transforming)	Dynamic B2B marketing operations
Cheng and Jiang (2022)	Customer relationship marketing	Chatbot marketing efforts	Customer brand relationship	Credibility accuracy competence	Customer response
Drydakis (2022)	Dynamic capabilities	AI adoption	Impact on dynamic capabilities	Customer brand relationship	Performance Outcome
Sjödin et al. (2023)	Dynamic capabilities	AI capacities		Dynamic capabilities for AI-enabled circular business model innovation	AI-enabled circular business models
Abou-Foul et al. (2023)	Dynamic capabilities	AI capabilities	Absorptive capacity		Servitization
Chatterjee et al. (2024)	Dynamic capabilities and Contingency Theory	AI adoption		AI – organization integration (information quality, system fit, organizational fit)	AI CRM system implementation success
This research	Dynamic capabilities and Relationship marketing theory	AI-DC	Facilitators and Barriers	AI-RM	Customer Level Outcomes Firm Level Outcomes

evidence offers a set of generalizable insights.

Accordingly, we contribute to the body of knowledge by extending our theoretical understanding of organizational capabilities by introducing AI as a key enabler of dynamic capabilities, supporting the ability of businesses to sense, seize, and reconfigure resources in response to changing environments. Additionally, following a theory integration approach, we extend the literature on RM and dynamic capabilities by investigating how AI-enabled technologies support marketing operations and contribute to the development of RM strategies. For example, we explore and identify the dimensions of RM that can be positively impacted by AI technologies, including customer outreach and prospect management. Therefore, the study also contributes to the existing marketing and AI literature by including the transformative impact of AI on organizational processes and outcomes, offering a structured understanding for developing AI capabilities strategically and identifying the facilitators and barriers to AI deployment for RM purposes.

2. Theoretical Background

2.1. Relationship marketing

As loyal customers can derive several benefits, organizations are continuously looking for new ways to gain customer loyalty through the development of cordial relationships (Chatterjee et al., 2024). In today's turbulent business landscapes, the importance of RM cannot be underestimated and has received considerable attention from academics and practitioners (Cenopht et al., 2023; Sandesh & Paul, 2023; Shamsollahi et al., 2021). The theory of RM refers to all marketing activities employed to establish, develop, and maintain meaningful customer–company or customer–brand relationships (Gummerus et al., 2017; Morgan & Hunt, 1994; Shamsollahi et al., 2021). This is based on the notion that a strong mutual collaborative relationship will lead to positive outcomes (Ahmad and Akbar, 2023), such as increased customer equity and firm profitability. This has been well documented in Palmatier et al.'s (2006) meta-analytic framework, which highlights several outcomes of effective RM, such as customer loyalty and positive word-of-mouth. Ahmad and Akbar (2023) confirmed that effective RM strategies were linked to favorable word-of-mouth and strong customer loyalty, as well as positive customer satisfaction. Thus, organizations are recognizing the importance of cultivating and sustaining relationships with customers by providing additional value in order to remain competitive (Jain et al., 2022; Leverin & Liljander, 2006). However, the perceived value of these relationships from the consumers' perspective is less evident in the extant literature, as several recent studies propose that customers are primarily concerned with firms delivering services, products, and experiences rather than prioritizing relationship-building (Rooney et al., 2021; Tobaccowala & Jones, 2018).

The above is particularly important in the era of AI in marketing. On the one hand, AI can support organizations in their efforts to satisfy consumers' expectations for high-quality products, services and experiences. As companies integrate AI into their marketing strategies, they can enhance customers' awareness of their products and services while facilitating efficient navigation among various options. Moreover, AI-powered tools enable companies to gain deeper insights into customer perceptions and engagement with their offerings (De Bruyn et al., 2020), leading to improved future offerings (Van Esch & Black, 2021). Nevertheless, the implementation of AI in marketing also offers the potential for organizations to strengthen their relationships with customers by supporting the development of more effective RM strategies, by enabling organizations to handle and analyze large volumes of customers' data rapidly, providing valuable insights into customer preferences, perceptions, and behaviors (Chatterjee et al., 2024). Marketers can leverage AI to accurately anticipate customer needs, desires, and preferences, thereby enabling hyper-personalized value propositions (Van Esch & Black, 2021). Consequently, this approach holds promise for reducing customer churn and shopping cart abandonment while simultaneously

fostering greater customer loyalty and positive word-of-mouth recommendations (Cui et al., 2021; van Esch et al., 2021). For instance, Red Balloon implemented unsupervised learning through their AI system, Albert, resulting in significant reductions in customer acquisition costs and overall marketing expenditure, along with considerable improvements in return on advertising expenditure and overall marketing outcomes (Huang & Rust, 2021). To date, however, there has been limited research exploring holistically the influence of AI technologies on RM (Chatterjee et al., 2024; Payne & Frow, 2017) by considering the value that the implementation of such technologies offers for both organizations and customers throughout the customer journey. This raises the question: How does RM maintain relevance in a technologically dynamic marketplace?

The advancement of technology presents both opportunities and challenges in cultivating relationships (Rooney et al., 2021), as it diminishes the perception of customers as merely 'passive' recipients of relationship management activities (O'Malley, 2014). Moreover, the existing literature on RM tends to take a fragmented rather than a holistic approach to comprehending the influence of technology on relationship cultivation and maintenance (Steinhoff et al., 2019). To ensure the ongoing significance of RM in today's marketplace, it is imperative to comprehend the influence of AI-enabled technologies on shaping customer relationships within dynamic marketplaces, where such technologies could serve as the principal catalyst for these connections (Chatterjee et al., 2024). We aim to explore this phenomenon by leveraging the dynamic capabilities theory to analyze how the evolving AI capabilities contribute to the formulation of effective AI-enabled RM strategies.

2.2. Dynamic capabilities theory

The resource-based view (RBV) outlines how a firm can effectively utilize its resources, which are non-substitutable, unique, and valuable, to achieve sustained competitive advantage (Wernerfelt, 1984). Wernerfelt's (1984) seminal work is regarded as the pioneering study that laid the foundation for RBV concepts, with subsequent researchers further developing the RBV into a comprehensive resource-based theory (Kozlenkova et al., 2014). Researchers commonly adopt the RBV (Barney, 1991) as a theoretical framework for establishing and sustaining competitive advantage. It provides theoretically grounded principles for identifying the firm's underlying resources and capabilities, crucial for attaining competitive advantages (Asseraf et al., 2019; Barney, 1991). It focuses on strategically leveraging existing capabilities and assets in stable market environments (Pan et al., 2015) and highlights the paramount importance of a firm's resources and capabilities in enhancing and optimizing its performance (Capron & Hulland, 1999). However, despite its significance, researchers have asserted that the broad definition of firm resources ignores the critical differences between assets and capabilities (Finney et al., 2008). Firm resources comprise both tangible (property, plant, equipment, etc.) and intangible (information, technology, etc.) components. In addition, early applications of RBV theory faced criticism for their limited applicability to hyper-competitive environments characterized by rapid and abrupt changes (Teece et al., 1997).

To address the challenges associated with the RBV, research has shifted its focus to dynamic capabilities theory, which has emerged as a predominant framework in AI research (Akter et al., 2023; Mikalef et al., 2021). Dynamic capabilities theory underscores organizations' continual efforts in renewing, reconfiguring, and recreating resources, capabilities, and core competencies to adapt to environmental changes (Teece et al., 1997; Wang & Ahmed, 2007) to devise value-creating strategies (Eisenhardt & Martin, 2000) and compete in rapidly changing market environments (Hossain et al., 2022). Teece (2007) delineates dynamic capabilities as the sensing (and shaping) of opportunities and threats, the seizing of opportunities and management of threats, and the reconfiguration of resources and processes. Capability is conceptualized

as a firm's ability to harness both internal resources such as AI-enabled technologies and external resources, creating new value for stakeholders and aiming to establish competitive advantage (Zhou & Li, 2010). Dynamic capabilities enable firms to adapt to technological change (Eisenhardt & Martin, 2000) and facilitate changes that benefit customers (Teece et al., 2016), and are integral to an organization's digital transformation (Matarazzo et al., 2021).

In the current dynamic digital landscape, firms' analytic capability plays a crucial role, especially with the accessibility of AI (Hossain et al., 2022). Firms lacking the necessary resources and associated capabilities, such as AI-enabled technologies, are unlikely to succeed in international markets (Hossain et al., 2022). A recent study by Gupta et al. (2020) demonstrated how big data predictive analytics capability drives superior organizational performance. Additionally, Akter et al. (2020) introduced service analytics capability and its impactful role across the service life cycle, particularly in the digital marketplace. Furthermore, it is important to understand that mere possession of AI-enabled technologies will not bring success in the long run; instead, how firms use these capabilities to gain market performance and competitive advantage is important as well (Hossain et al., 2022). However, despite the potential of dynamic capabilities to enhance firm performance, there are untapped opportunities for researchers to explore in order to gain deeper insights (Cao et al., 2019). This study advances our understanding of how AI-enabled dynamic capabilities (AI-DC) drive sustained competitive advantage through the lens of dynamic capabilities.

3. Method

3.1. Research design

This study adopted a qualitative research design to explore AI-DC and their impact on firms' RM. Qualitative research is particularly well-suited for this study due to its flexibility, which enables it to delve deeply into complex and insufficiently investigated phenomena, while allowing rich and nuanced insights to emerge from the data (Eisenhardt & Graebner, 2007; Hennink et al., 2020).

To achieve this, we adopted a systematic approach often referred to as the "Gioia methodology," which allows for an inductive and in-depth examination of under-explored phenomena (Gioia et al., 2013). The Gioia methodology is particularly relevant for this study due to its emphasis on structuring emergent themes while maintaining transparency and rigor in qualitative research (Langley and Abdallah, 2015). This approach enhances credibility by systematically linking raw data to higher-order theoretical constructs, thereby helping to reduce researcher bias and improve replicability (Gioia et al., 2013). This approach also enabled us to capture the dynamic interactions between AI capabilities and RM practices, facilitating the emergence of new theoretical insights.

Additionally, while some scholars argue that the structured coding approach in the Gioia methodology makes it appear more "quantitative" (Mees-Buss et al., 2022), discussions highlight its inferential flexibility, which integrates both inductive and abductive reasoning (Magnani & Gioia, 2023). This inferential richness enhances its suitability for theory-building studies such as ours, where understanding emergent capabilities in an AI-driven business landscape required a balance between data-driven discoveries and theoretical framing.

Dynamic capability theory (Teece et al., 1997), which emphasizes an organization's ability to adapt and innovate in response to changing environments, was adopted as the theoretical framework to enable the researchers to blend existing theory and concepts with novel empirical insights. By adopting this theoretical lens when collecting and analyzing qualitative data, we aimed to gain insights into how firms develop AI-enabled dynamic capabilities and leverage them to establish, develop, and maintain relationships with their customers.

3.2. Sampling Procedure and data collection

A two-stage sampling process was employed to choose participating corporations. Initially, XIM University in India was approached due to its wide geographic reach and close connections with the industry, to provide us with a list of multinational corporations with which it collaborates. Next, purposive sampling was used to select participants for this study (Palinkas et al., 2015). Desk research was conducted to assess the suitability of these companies for our study, focusing on the organizations' appropriateness and relevance to our research topic (e.g., interest in AI solutions, organizational focus on RM, active in diverse sectors and geographical areas to support more inclusive data).

In total, we conducted 67 semi-structured interviews, all in English, with managers from these selected firms. The sample size was determined by theoretical saturation, as data collection ceased when additional data did not add substantial information. Among the respondents, 58 % were male, while 42 % were female, all occupying managerial or executive roles. Unlike other studies in this area (e.g., Hossain et al., 2022; Khan et al., 2023), our sample was heterogeneous in terms of the industries in which these managers were active (please see Table A in the appendix for detailed information of respondents and firms). On average, each interview lasted 35 min, resulting in a cumulative interview time exceeding 39 h. The interviews were audio-recorded and transcribed verbatim to facilitate subsequent analysis. The researchers guided the semi-structured interviews using a set of 13 open-ended questions.

The interview guide centered around Teece et al.'s (1997) DC model, which focuses on sensing, seizing, and transforming through AI utilization. Additionally, it employed the definition of RM concerning marketing initiatives aimed at establishing, developing, and maintaining relationships with customers (Morgan & Hunt, 1994). Questions addressed these aspects to capture participants' insights on AI dynamic capabilities and their impact on RM within their organizations. The adoption of this theoretical lens facilitated a more focused analysis of interview data while providing flexibility to explore key themes and seek clarification and examples (Palinkas et al., 2015; Strauss & Corbin, 1998).

3.3. Data analysis

Thematic content analysis, specifically the Gioia methodology (Gioia et al., 2013), was used to analyze the data. Thematic analysis allows for the systematic identification, analysis, and interpretation of patterns or themes within qualitative data (Nowell et al., 2017). The Gioia methodology provides a structured yet flexible approach to theme discovery, ensuring analytical rigor and reliability (Gioia et al., 2013). The coding process involves open, axial, and selective coding to establish the first-order concepts, second-order themes, and aggregate dimensions of the construct of interest, respectively. Open coding involves identifying initial concepts, phrases, or ideas from the interview transcripts. Axial coding establishes relationships between codes to develop broader themes—so-called second order themes. Finally, selective coding refines and develops the most significant themes, providing aggregate dimensions in a clear and structured framework for reporting the findings. This iterative process allows for the exploration of multiple layers of meaning within the data, while also facilitating the emergence of rich and nuanced insights. Therefore, although the rigorous and structured coding approach adopted in the Gioia methodology has been criticized for being too "quantitative" and closer to a naturalist orientation (Mees-Buss et al., 2022), this method holds knowledge-enriching potential because it uses an inferential process that involves both induction and abduction, thus better enabling novel theoretical insights (Magnani & Gioia, 2023).

Consistent with existing qualitative studies in relevant research areas (e.g., Chakraborty et al., 2024; Banerjee & Chua, 2023), the data analysis was conducted independently by two researchers to avoid bias and

improve the reliability of our research (Gioia et al., 2013), and any discrepancies were discussed and resolved until consensus was achieved. To further ensure accuracy of interpretation, research rigor, and transparency of the analysis process, the team undertook peer debriefing by consulting academic colleagues for feedback and comments about the analysis process and the codes and themes identified. Finally, to ensure coding validity, a draft write-up was shared with a part of our sample as a form of member checking.

The data analysis process yielded 27 first-order concepts, nine second-order themes, and three aggregate dimensions for AI-DC, and 15 first-order concepts, six second-order themes, and three aggregate dimensions for AI-enabled RM. We also examined the facilitators and barriers to using AI to develop dynamic capabilities and promote RM. This process resulted in the identification of 15 first-order concepts, from which emerged two facilitators and four barriers. Fig. 1 shows the structured framework resulting from our data analysis.

4. Findings

Fig. 1, which presents the structured framework of our data analysis, includes three aggregate dimensions of AI-DC, three aggregate dimensions of AI-RM, and the facilitators and barriers associated with these dimensions. We found that AI-DC involves sensing market opportunities through analytical expertise, market intelligence, and data management; seizing these opportunities via decision agility, resource optimization, and collective sensemaking; and transforming the organization through digital initiatives, talent development, and collaborative ecosystem building. As depicted in Fig. 1, we also found that AI-RM focuses on establishing customer relationships through AI-powered customer outreach and prospect engagement; developing these relationships via exclusive relationship-building and tailored experiences and interactions; and maintaining them through loyalty initiatives and customer support excellence. Additionally, the facilitators and barriers highlight the importance of human oversight and AI knowledge as enablers, while also acknowledging inhibitors such as AI noise, ethical concerns, and data bias, as well as integration challenges, such as resistance and trust. The following sub-sections provide a detailed explanation of each finding.

4.1. AI-enabled dynamic capabilities (AI-DC)

As depicted in Fig. 1, our analysis explores the three essential components of AI-DC: sensing, seizing, and transforming. Within each component, we identify and elaborate on three distinct dimensions, as explained below.

4.1.1. Sensing

The sensing component of AI-DC hinges on an organization's capacity to decipher market signals, anticipate shifts, and identify latent opportunities. Within this component, we identified three dimensions: analytical expertise, market intelligence, and data management. *Analytical expertise* represents the organizational proficiency in leveraging advanced analytical techniques facilitated by AI to interpret complex data sets and derive meaningful insights from vast datasets (Davenport & Harris, 2017). In this regard, the product manager of a healthcare company mentioned:

Successful AI utilization for sensing market changes requires analytics capabilities. In our team, we heavily rely on advanced analytics tools for real-time monitoring of both organic and paid traffic. [...] Successful interpretation of market changes requires capabilities beyond mere data

collection. In our team, we prioritize developing analytical expertise to glean meaningful insights. (R10)¹

Scholars such as Arrieta et al. (2020) emphasize the importance of analytical expertise in making informed decisions based on data-driven insights. This finding also aligns with previous research by Dubey et al. (2020), who highlighted the importance of big data analytics in enhancing firms' market sensing capabilities. Similarly, Akter et al. (2016) found that analytical capabilities are crucial for gaining insights from vast datasets, thereby enabling firms to better understand and predict customer needs. By employing advanced analytical techniques, such as ML and natural language processing (NLP), and leveraging AI tools, organizations can uncover patterns, trends, and anomalies in data that may signal changes in market trends, customer preferences, and competitive landscapes. This capability can further help organizations to address changes in their customers' preferences and strengthen their communication and relationship with them. The analytical expertise dimension of AI-DC is closely linked to the initial phase of AI-RM (as explained in sub-section 4.2), as it is particularly relevant for supporting the early stages of the customer journey (e.g., customer awareness and consideration), specifically in identifying potential leads and segmenting audiences through AI-powered customer outreach. The ability to analyze complex datasets enables organizations to identify patterns and behaviors indicative of potential customers, thus aligning with AI-RM's goal of establishing relationships through targeted marketing efforts. To access a compilation of quotes from our participants regarding each dimension, please see Table 2.

Market intelligence refers to the capability to gather, process, and interpret market-related information in real-time (Wamba et al., 2015). AI plays a pivotal role in automating data collection, monitoring social media, tracking competitors' activities, and predicting market trends. Huang and Rust (2021) support the view that AI can play an important role in sensing the market by offering market intelligence and explain how different types of AI can be used for different market sensing activities, including "mechanical" AI for data collection, "thinking" AI for market analysis, and "feeling" AI for customer understanding. By leveraging these various types of AI for market intelligence, organizations can proactively support the initial stages of the customer journey, as they can identify emerging trends, customer needs, and potential threats, enabling them to make informed decisions and adapt their strategies accordingly. This fact highlights the importance of integrating external market knowledge with internal analytical capabilities to enhance sensing capabilities effectively. For example, Harley-Davidson has used AI to sense the market and generate leads by analyzing existing customer data to isolate the defining characteristics and behaviors of high value past customers (Power, 2017).

Data management refers to the processes and systems designed to uphold the quality, availability, security, and governance of data used for AI applications. It plays a pivotal role in orchestrating and harnessing extensive data volumes to extract actionable insights for informed decision-making (Modgil et al., 2022). AI-driven data platforms facilitate real-time data integration, cleansing, and enrichment. Effective data management is fundamental to sensing capabilities, as timely access to accurate data empowers organizations to deploy their analytical prowess and market intelligence precisely. By implementing robust data management practices, organizations can ensure data quality, accessibility, and security, enabling them to leverage data as a strategic asset for accurately sensing changes in the market. Highlighting this point, one respondent, from an automotive company, stated:

Our company employs adaptive data management strategies, investing in advanced data validation techniques and robust categorization protocols to unlock the true value of data. (R39)

¹ Respondent 10 (refer to Table A in the appendix for more information about firms and respondents).

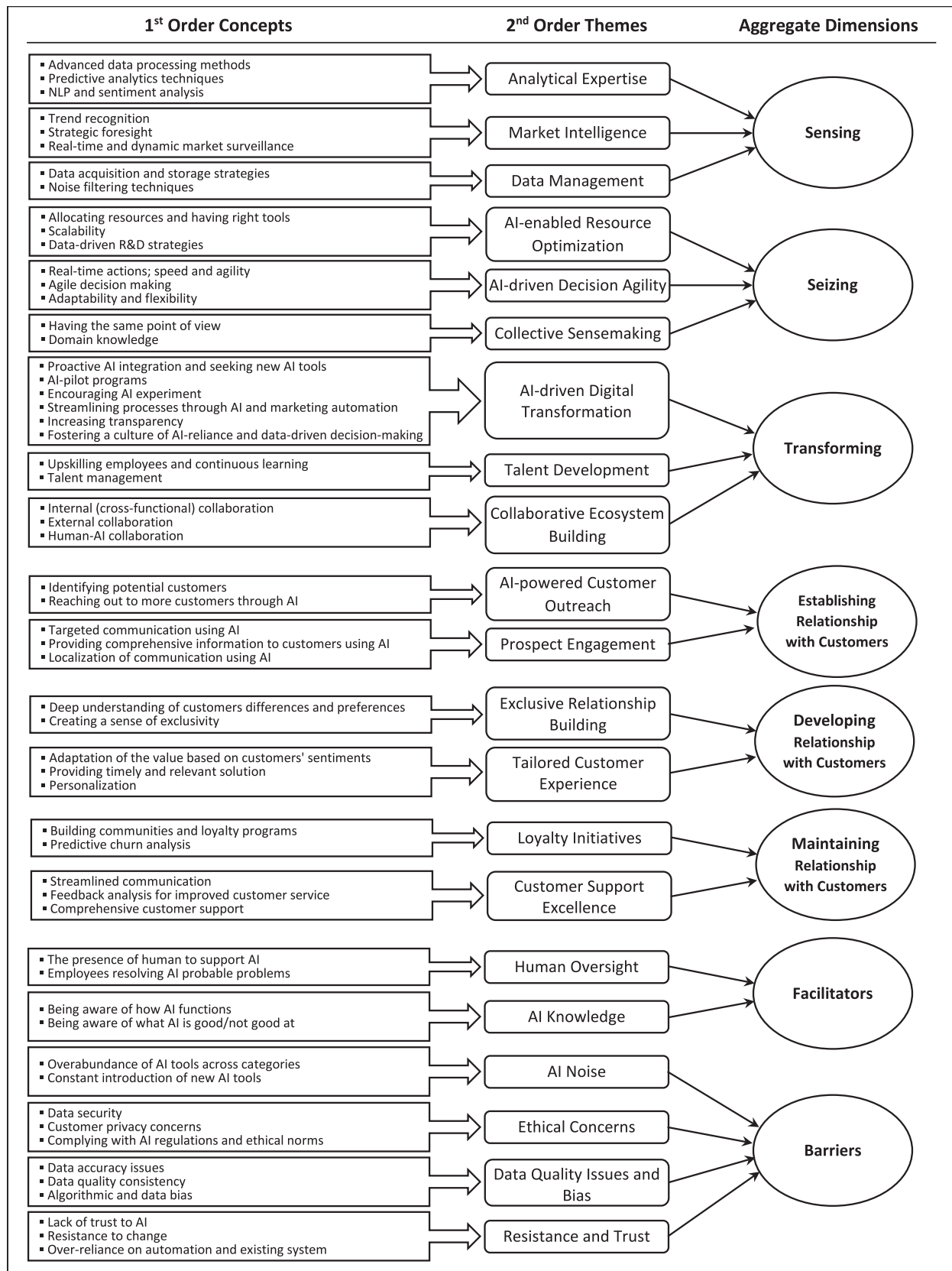


Fig. 1. Data Structure.

Table 2
List of exemplary quotes for AI-DC.

Dimensions	Quote
Sensing	
Analytical expertise	To interpret changes in the market or industry, an insurance company like ours needs to be proficient in natural language processing and sentiment analysis (R17).
Market intelligence	We don't want AI stuck in today's trends. We need it to plan ahead, always staying a step ahead of the market and forecast the future like a pro (R1). Our AI systems facilitate meticulously analyzing sales data, market trends, and external factors to deliver precise demand forecasts (R23).
Data management	No one wants AI drowning in spam or irrelevant data. We need clear, structured insights with all the noise filtered (R49).
Seizing	
AI-enabled Resource Optimization	For instance, if AI detects a high interest in camera quality among consumers, this insight guides the R&D team to focus on enhancing camera technology in upcoming models (R62).
AI-driven Decision Agility	Our AI platform enables us to make data-driven decisions in real-time (R24).This [AI implementation] has helped us a lot in fast decision-making and promptly providing the best service to our clients (R12)
Collective Sensemaking	... however, we need to ensure that our staff understand how and why our AI makes specific recommendations (R53).
Transforming	
AI-driven Digital Transformation	The integration of AI enhances the efficiency of pitch design, which drastically streamlines the ideation phase (R16).
Talent development	We prioritize talent acquisition and development, investing in hiring and nurturing top talent with expertise in data analytics, machine learning, and industry-specific knowledge (R26).
Collaborative ecosystem building	It takes cross-functional collaborations where all departments work together to get the best AI result (R1).

Respondent 17 (refer to Table A in the appendix for more information about firms and respondents).

Also, our analysis revealed that adopting noise-filtering techniques and focusing on the development of complete and appropriate databases can significantly enhance the accuracy of detecting market shifts and avoid cases of algorithmic bias, as in the example of Apple's biased algorithm, which unfairly rejected female credit card applicants over males, since the dataset represented a higher ratio of male applicants (Akter et al., 2023).

4.1.2. Seizing

As the second component of AI-DC, seizing refers to an organization's capability to swiftly and decisively capitalize on identified opportunities and effectively respond to emergent challenges through the strategic deployment of AI. Seizing is realized through AI-enabled resource optimization, AI-driven decision agility, and collective sensemaking.

AI-enabled resource optimization refers to the use of AI techniques and algorithms to effectively re-allocate and utilize the organizational resources (such as human, financial, physical, and digital) to respond to market changes. According to existing studies, although adoption and implementation of AI technologies for RM may require significant initial investment in resources by the organization (Rahman et al., 2023), the adoption of AI solutions can optimize resource utilization by dynamically reallocating assets based on changing market conditions. From supply chain management to workforce scheduling, AI-driven optimization models enhance efficiency, reduce costs, and improve resource utilization. AI tools and ML algorithms also facilitate the efficient allocation of budgets, talent, and technology investments. Therefore,

organizations that master resource optimization can swiftly pivot with customers' preferences and invest in promising ventures. This finding also resonates with the view that resource optimization is essential to enable organizations to seize opportunities and drive sustainable growth (Schilke et al., 2018).

AI-driven decision agility is another critical dimension for seizing, as it empowers organizations to make quick, informed decisions in response to market changes or opportunities facilitated by AI-powered decision support systems and based on AI-generated insights and recommendations (Agrawal et al., 2022). This dimension emphasizes the role of AI in augmenting human decision-making capabilities through real-time data analytics, scenario simulation, and prescriptive analytics. By automating routine decisions, AI also frees up cognitive bandwidth for strategic thinking and swifter decision-making. By leveraging AI technologies to enhance decision-making processes, organizations can respond rapidly to emerging opportunities, adapt their strategies, and capitalize on market trends effectively. Highlighting this finding, the marketing manager of an electronics company stated:

One of the most important ways we're using AI is for data-driven decision-making. The goal is to empower all teams within [company name] with accessible tools and insights for fast and informed decision-making. (R29)

This finding highlights the importance of decision agility in enabling organizations to seize opportunities and drive innovation (Wilden et al., 2013). The seizing aspect of AI-DC, particularly AI-driven decision agility and resource optimization, finds support in the work of Shrestha et al. (2019), who identified AI's role in enhancing decision-making speed and accuracy. AI-enabled resource optimization and AI-driven decision agility not only facilitate quick responses to market changes but also support the development phase of AI-RM. By reallocating resources efficiently and making swift, informed decisions, organizations can tailor customer experiences and exclusive relationship-building initiatives throughout the customer journey, enhancing the depth and quality of relationships with their customers.

Collective sensemaking is also essential for seizing, as it fosters knowledge sharing within the organization to collectively interpret market signals and strategize effectively (Bai et al., 2023). It entails having collective knowledge in the relevant domain and sharing the same point of view, thus enabling not only managers but all organizational members to create shared understanding and make sense of insights gleaned through the utilization of AI for market sensing. Echoing this finding, the product manager of an AI solution company said:

Workshops and training programs can help users understand AI functionalities and gain confidence, because, at the end of the day, for your AI initiative to work well all team members must be at the same page and share the same understanding of AI functionalities. (R9)

This code is supported by existing research highlighting that in today's dynamic market, where change is a constant, organizations must be adaptive and flexible, combining their structures, competencies and resources with a digital mindset that will allow various stakeholders to collaborate in order to seize opportunities in the market and achieve their goals (Neeley & Leonardi, 2022).

4.1.3. Transforming

The "transforming" component of AI-DC focuses on the primary goal of driving transformative change and facilitating organizational evolution to harness AI when responding to market dynamics. Within this component, three dimensions are delineated: AI-driven digital transformation, talent development, and collaborative ecosystem building.

AI-driven digital transformation involves the strategic redesign and reengineering of organizational structures, cultures, processes, systems and touchpoints through the utilization of AI technologies. This strategic integration of AI aims to enhance operational efficiency, elevate customer experiences, and foster strategic agility across the organizational value chain (Chui & Francisco, 2017; Daneshvar Kakhki et al.,

2023). Central to this dimension is proactive involvement in AI adoption at different stages of the customer journey, including the implementation of AI pilot programs, the exploration of relevant AI tools, and the fostering of a culture that encourages employee experimentation with AI. It emphasizes the necessity for organizations to embrace AI as a catalyst for digital reinvention, reimagining business processes, touchpoints, products, and services to align with evolving market demands and changing customer preferences. Supporting this finding, the marketing executive of a consultation company said:

[Company name] reconfigured and streamlined many operation and marketing processes by AI. For example, automated workflows can quickly adjust marketing strategies based on AI insights, much like a personal assistant streamlining your daily tasks. (R11)

Talent development focuses on nurturing a workforce equipped with the necessary skills and competencies to proficiently utilize AI in response to changing market demands. Through investments in employee training, and upskilling and reskilling initiatives, organizations can cultivate a versatile workforce capable of catalyzing innovation and driving growth through AI. This highlights the importance of not only acquiring AI talent but also fostering AI literacy and a culture of continuous learning, thus empowering organizations to adapt and thrive in dynamic markets (Beauchene et al., 2023). Echoing this finding, the product manager of a healthcare company said:

We bring together talent and technology to drive our approach. Considering how pivotal AI is in today's market, we focus on building our team's skills and expertise. We are committed to training our team to make the most of the AI tools at their disposal. Beyond individual growth, we regularly host workshops to keep everyone up to date with the latest advancements in technology. (R10)

Our findings on the transforming component of AI-DC, such as AI-driven digital transformation and talent development, are consistent with the findings of Davenport and Ronanki (2018), who emphasize that AI facilitates organizational transformation by driving innovation and improving operational efficiency. This supports the notion that AI integration requires not only technological upgrades but also significant changes in organizational capabilities and culture.

According to our data analysis, collaborative ecosystem building comprises fostering three types of collaboration: cross-functional, external, and human–AI collaboration. Human–AI collaboration is central to this ecosystem, as it merges human expertise with AI capabilities in decision-making processes, leading to enhanced innovation and performance. Organizations that align AI use with work routines, performance measures, and leader support can facilitate successful human–AI collaboration (Bankins et al., 2023). This collaboration fosters synergy, enabling the accomplishment of tasks that neither humans nor AI can achieve alone (Sowa et al., 2021). Moreover, integrating human and machine intelligence is crucial for optimal outcomes, emphasizing the importance of keeping human organizations in the loop (Herrmann & Pfeiffer, 2023). A manager at a fintech company highlighted this finding, stating:

While the benefits [of AI implementation] are substantial, it is important for fintech firms to have a keen eye on human-AI collaboration and the delicate balance between human oversight and machine capabilities. (R23)

Cross-functional collaboration plays a critical role in innovative problem-solving in response to market changes (Bryson et al., 2015). By facilitating communication and cooperation across different departments, organizations can leverage diverse expertise to drive successful AI integration initiatives (Tiwana & McLean, 2005). Although challenges may arise in implementing cross-functional communications and problem-solving (Gemser & Leenders, 2011), such as governance issues and a lack of clarity and shared understanding, the benefits of enhanced collaboration and knowledge sharing, as our respondents asserted, outweigh these difficulties.

Furthermore, AI-driven transformation extends beyond organizational boundaries. External collaboration is also essential for transforming organizations for AI use, as it involves forming and maintaining strategic partnerships and alliances within the broader ecosystem. This collaboration facilitates the exchange of data, knowledge, and resources through AI platforms, fostering synergies and driving mutual growth (Adner & Kapoor, 2010; Tehrani et al., 2024). This dimension underscores the role of AI in facilitating ecosystem orchestration, thus enabling seamless integration and collaboration across diverse stakeholders, including customers, suppliers, and industry partners, to drive collective value creation and sustainable growth.

The dimensions of AI-driven digital transformation, talent development, and collaborative ecosystem building collectively influence the three phases of AI-RM. For example, digital transformation initiatives ensure that customer interactions are streamlined and efficient, while talent development ensures employees are skilled in leveraging AI for superior customer support. Additionally, fostering collaborative ecosystems, both internally and externally, enhances the ability to maintain long-term customer relationships through improved communication and support mechanisms.

4.2. AI-enabled relationship marketing

The development of AI presents a transformative opportunity in the realm of RM, paving the way for the emergence of AI-RM as a contemporary paradigm. AI-RM leverages AI technologies to navigate through three interconnected phases of RM: (1) establishing, (2) developing, and (3) maintaining relationships with customers. Through the analysis of qualitative data, we have uncovered key dimensions within each of these phases of RM, providing crucial insights into its operational mechanisms and implications for marketing practice and the customer journey. It is important to note that while these phases are outlined sequentially, firms may fluidly move back and forth between them in practice, thus emphasizing the dynamic nature of AI-RM.

4.2.1. Establishing relationships with customers

The foundation of any successful marketing endeavor lies in establishing authentic and enduring connections with customers (Palmatier & Steinhoff, 2019; Steinhoff et al., 2019). In this initial phase, AI acts as a catalyst, enabling organizations to identify potential leads, segment audiences, and initiate personalized interactions. Through predictive analytics and ML, firms can pinpoint the prospects most likely to engage and tailor their outreach accordingly (Davenport, 2014). Within this phase, two key dimensions emerged from our analysis, namely, “AI-powered customer outreach” and “prospect engagement,” each highlighting unique aspects of leveraging AI for RM in the initial stages of the customer journey.

AI-powered customer outreach involves harnessing the capabilities of AI and ML to identify and reach potential customers, expand outreach efforts, and enhance customer acquisition strategies. Through the analysis of vast datasets, AI algorithms can identify patterns and behaviors indicative of potential customers, enabling firms to target their marketing efforts with precision, in the awareness and consideration stages of the customer journey (Schweidel et al., 2022). Moreover, AI-driven predictive analytics can forecast customer preferences and behaviors, allowing marketers to tailor their outreach strategies accordingly (Davenport & Harris, 2017). For instance, AI-powered lead-scoring models can prioritize leads based on their likelihood of conversion, enabling marketers to allocate resources more efficiently and focus on prospects with the highest potential value (Moradi & Dass, 2022). A respondent from the power tools manufacturing industry explained:

We post content on LinkedIn and Instagram as well, and our AI analyze our content engagement in real time. So, whenever the right audience, or the right hashtag general, that we are looking for appears, we help them

out. Our chatbot analytics show an increase in first-time customer engagement overtime. (R4)

Additionally, AI chatbots integrated into websites and social media platforms can engage with visitors in real-time, thus providing personalized assistance and gathering valuable insights into customer needs and preferences (Huang & Rust, 2018). These chatbots use NLP to understand and respond to queries, guiding customers through the sales funnel and providing relevant information based on their interactions that can support their transition through the stages of the customer journey and avoid them falling off the cycle. Moreover, AI can help in crafting personalized email marketing campaigns by analyzing customer data to determine the optimal time, content, and frequency of emails, thereby increasing click-to-open and click-through rates. Whether through personalized email campaigns, chatbots on websites, or social media interactions, AI casts a wider net, connecting with prospects across channels, and thereby laying the groundwork for enduring relationships. Echoing this finding, a marketing executive of a consulting company mentioned:

Utilizing the AI functionalities of the User Pilot program, we excel at identifying prospective customers across varied networks, such as Google and LinkedIn. (R3)

The role of AI in establishing relationships through targeted marketing efforts in the initial stages of the customer journey is echoed in the work of Huang and Rust (2018), who found that AI enhances customer acquisition by enabling personalized marketing and improved customer targeting. This corroborates our findings that AI-powered customer outreach and segmentation are critical in the initial phase of RM.

AI-DC plays a critical role in this phase. For instance, the sensing component of AI-DC, through analytical expertise and market intelligence, enables precise customer targeting and outreach, leading to effective engagement strategies. By leveraging real-time data and predictive analytics, organizations can identify and connect with potential customers more effectively, thereby laying a strong foundation for future relationship development.

Prospect engagement within AI-RM involves fostering meaningful interactions with potential customers through targeted communication, providing comprehensive information, and localizing communication efforts using AI technologies. Through the use of AI-driven recommendation engines, firms can curate personalized product recommendations and content suggestions, enhancing the relevance and value of their communications to targeted individual prospects (Polcarpo et al., 2021). An example of AI-powered prospect management is Salesforce Einstein, which analyzes customer data to provide insights and predictions, helping sales teams to prioritize leads and automate follow-up actions. Moreover, AI-powered tools enable firms to deliver relevant content and information to prospects based on their preferences, behaviors, and demographics (Kumar & Reinartz, 2018). Echoing this point, a manager of an automotive company said:

When it comes to the automotive industry, we have segments of luxury vehicles, utility vehicles, two-wheelers, four-wheelers, commercial vehicles and so on. So, if we provide content which is tailored for the two-wheelers, but it is provided to the four-wheeler customers, that is not going to be effective nor engaging. However, we are good at using AI for analyzing customers' interests, online behaviors, and tailoring contents and offerings that can be interesting to them. (R39)

Further, as our respondents asserted, AI-powered localization techniques enable firms to tailor their messaging and offerings to resonate with the cultural and linguistic preferences of diverse customer segments. For example, AI-enabled content optimization platforms can dynamically adjust messaging and imagery based on geographic location, ensuring that communications are culturally sensitive and contextually relevant. Highlighting this point, the founder of an Indian e-

commerce company stated:

We can now create marketing campaigns for different regions based on local trends and preferences. Imagine offering winterizing tools in northern India while promoting gardening equipment in the south, all thanks to AI insights. (R61)

Also, AI chatbots equipped with NLP capabilities can engage prospects in interactive dialogues, addressing inquiries and providing information in real time, thereby fostering a sense of trust and responsiveness (Chui & Francisco, 2017). By leveraging AI technologies for prospect engagement, firms can deliver personalized, timely, and contextually relevant communications, enhancing the likelihood of establishing meaningful relationships with potential customers.

4.2.2. Developing relationships with customers

Once relationships are established, the focus shifts towards developing and strengthening these nascent relationships. The development phase of AI-RM involves strategies and initiatives aimed at nurturing existing relationships, tailoring experiences, and delivering value that resonates with individual preferences and needs using AI. Two key dimensions have emerged within this phase: "exclusive relationship building" and "tailored customer experience."

Exclusive relationship building represents a fundamental dimension of AI-RM, emphasizing the cultivation of intimate and personalized connections with customers. In the AI age, organizations leverage advanced analytics and ML algorithms to gain deep insights into customers' preferences, behaviors, and lifestyles (Ameen et al., 2021). By harnessing AI-driven data analytics, companies can develop a nuanced understanding of each customer's unique characteristics, enabling them to tailor offerings and experiences that resonate on a personal level (Chen et al., 2023). Moreover, AI facilitates the creation of a sense of exclusivity for customers by offering personalized incentives, rewards, and experiences based on their individual preferences and past interactions (Vlačić et al., 2021). Recommendation engines powered by AI algorithms suggest curated product selections or exclusive offers tailored to each customer's preferences and purchase history, fostering a sense of appreciation and belonging (Vlačić et al., 2021), which can support the entire customer journey, from customer awareness to the decision-making and retention stages of the customer journey. Echoing this, the marketing manager of a European company in the food industry said:

Our AI-powered loyalty program meticulously tracks customers' behaviors and preferences and offers personalized rewards and early access to new products, creating a sense of exclusivity and driving greater customer engagement. (R14)

Highlighting this point, the product manager of an IT and ICT company stated:ing this point, the product manager of an IT and ICT company stated:

There is the whole personalization game in place. AI-driven algorithms help us send personalized recommendations and offers to customers. It is like knowing what they want before they even know it themselves! Plus, we use chatbots for customer service. These are not regular bots; they are smart and can learn from past interactions to provide quicker, more accurate, and more personalized responses. It is all about making the customer feel exclusively heard and valued. (R50)

Tailored customer experience represents another pivotal dimension of developing relationships with customers. In today's hyperconnected world, customers expect personalized and relevant interactions across all touchpoints (Bolton et al., 2022). AI technologies empower organizations to deliver timely and relevant solutions by analyzing vast troves of data to discern patterns, preferences, and sentiments among customers (Mustak et al., 2021). Also, by leveraging AI-driven chatbots and virtual assistants, companies can provide timely and relevant solutions to customer inquiries, complaints, and feedback, as stated by the marketing executive in a fintech firm:

Our AI will understand contextual cues, and consequently delivers relevant content to consumers at the right moment in their buying journey. (R43)

Through sentiment analysis and NLP algorithms, organizations can gauge customers' emotions, opinions, and attitudes in real time, enabling them to adapt their messaging and offerings accordingly (Huang & Rust, 2018). Elaborating on the adaptation of offerings, the product manager of an advertising company stated:

Sentiment analysis algorithms help us interpret changing consumer sentiments and preferences, whether communicated directly with us or indirectly through social media. This capability allows us to adapt our product offerings accordingly. (R25)

Moreover, AI facilitates the seamless integration of customer data across various touchpoints throughout the customer journey, enabling organizations to deliver consistent and coherent experiences (Calvo et al., 2023). By orchestrating personalized interactions across multiple platforms, including websites, mobile apps, social media, and physical stores, organizations can enhance their relationships with customers. The importance of AI in developing customer relationships, particularly through personalized experiences and interaction, is supported by the findings of Kumar et al. (2021), who highlight AI's ability to tailor customer interactions and enhance customer experience.

The seizing component of AI-DC is integral to developing customer relationships. AI-driven decision agility allows firms to swiftly adapt and personalize customer experiences, while resource optimization ensures that these personalized interactions are delivered efficiently and effectively. This alignment between dynamic capabilities and RM ensures that organizations can nurture deeper, more meaningful customer connections.

4.2.3. Maintaining relationship with customers

Within AI-RM, the maintenance of customer relationships is crucial for sustaining long-term engagement and maximizing customer lifetime value. This phase involves strategies and initiatives aimed at building customer loyalty, preventing customer churn, and resolving any probable customer dissatisfaction. We identified two key dimensions within this phase: "loyalty initiatives" and "customer support excellence."

Loyalty initiatives represent a cornerstone of AI-RM, focusing on fostering a sense of commitment and affinity among customers towards the brand. Organizations leverage advanced analytics and ML algorithms to design and implement innovative loyalty programs tailored to individual preferences and behaviors (Aluri et al., 2019). AI can analyze customer data to tailor loyalty rewards and incentives, ultimately enhancing customer retention by strengthening the bond between customers and the brand through various touchpoints (Filipe et al., 2017; Mittal & Maity, 2022). A senior consultant of a fintech organization highlighted this point:

Following a change in customer spending patterns, AI-driven analytics enable our bank to adjust its loyalty program. Then we offer personalized rewards that resonate with the evolving preferences of our customer base. (R40)

Moreover, by analyzing customer data and purchase history, AI algorithms can identify patterns indicative of potential churn, thus enabling organizations to intervene proactively with targeted retention efforts (Du et al., 2021). Highlighting AI implementation for churn analysis, the marketing executive of a fintech company stated:

By identifying clients who were likely to leave, we were able to implement retention and preventive measures, which resulted in a 10 % decrease in turnover. (R43)

In addition, AI facilitates the creation of online communities and social platforms where customers can engage with the brand throughout the customer journey, share experiences, and participate in exclusive

events or promotions (Cheng & Jiang, 2022). By fostering a sense of belonging and camaraderie, these initiatives deepen customer loyalty and advocacy, driving positive word-of-mouth and brand affinity (Tyrväinen et al., 2023).

Customer support excellence constitutes another critical dimension of maintaining relationships with customers in the context of AI-RM. Our data analysis indicates that to enhance customer retention and uphold long-term relationships with customers, organizations must prioritize streamlined communication, the proactive resolution of issues, and comprehensive support services. AI plays a pivotal role in optimizing customer support processes by automating routine inquiries, facilitating self-service options, and providing timely, round-the-clock assistance (Buhalis & Moldavska, 2022). Chatbots powered by NLP algorithms can address common customer queries, troubleshoot issues, and guide users through complex tasks in real time, streamlining communication and enhancing convenience, as one of our respondents mentioned:

AI streamlines communication with our customers like a reliable virtual assistant. Like how web searches provide information before you give it a full description, AI swiftly delivers relevant data. This is a convenience that aligns perfectly with our customers' expectations. (R11)

Moreover, AI enables organizations to analyze customer feedback and sentiment data from various sources, including social media, surveys, and online reviews, to identify areas for improvement and address emerging issues (Perez-Vega et al., 2021). By leveraging sentiment analysis and text mining techniques, companies can gain actionable insights into customers' perceptions, preferences, and pain points, enabling them to refine products, services, and support processes accordingly (Perez-Vega et al., 2021).

AI-DC, particularly those related to digital transformation and collaborative ecosystem building, are essential for maintaining long-term customer relationships. These capabilities facilitate consistent, high-quality customer support and proactive engagement, which are critical for sustaining relationships with customers.

Fig. 2 depicts a framework including the dimensions of AI-DC and AI-RM, facilitators of and barriers to utilizing AI for dynamic market response and RM, and the outcomes of AI-RM at firm level and customer level. As explained above and as shown in Fig. 2, AI-DC positively impacts the success of AI-RM initiatives. This relationship was confirmed by almost all our interviewees (64 respondents). As a case in point, the marketing executive of an insurance company said:

AI has totally transformed how we connect with our customers. It's not just about deploying cutting-edge technology; it's about how agile we are in utilizing it to meet the changing customers' expectations and preferences. Our ability to adapt quickly to shifts in customer preferences assists us to create a strong and lasting relationship with them. (R33)

Based on the above discussion, we propose the following:

Proposition 1. *The development of AI-DC enhances AI-enabled RM practices. Specifically, firms with advanced AI-DC, such as AI-enabled market sensing, seizing, and transforming capabilities, are more likely to effectively implement AI-RM strategies to establish, develop, and maintain customer relationships.*

4.3. AI-Enabled relationship marketing (AI-RM) outcomes

AI-RM yields several outcomes at the firm level. One significant outcome is *cost reduction*, as AI technologies streamline marketing processes and automate repetitive customer communication, leading to greater operational efficiency and reduced overhead costs (Huang & Rust, 2018). This is particularly relevant in the context of emerging economies, where unique challenges often impede business operations and AI can emerge as a distinctive opportunity to bolster their efficiency, cut costs, and streamline firms' operations (Amankwah-Amoah & Lu, 2024; Moharrak et al., 2024). For instance, during the awareness and

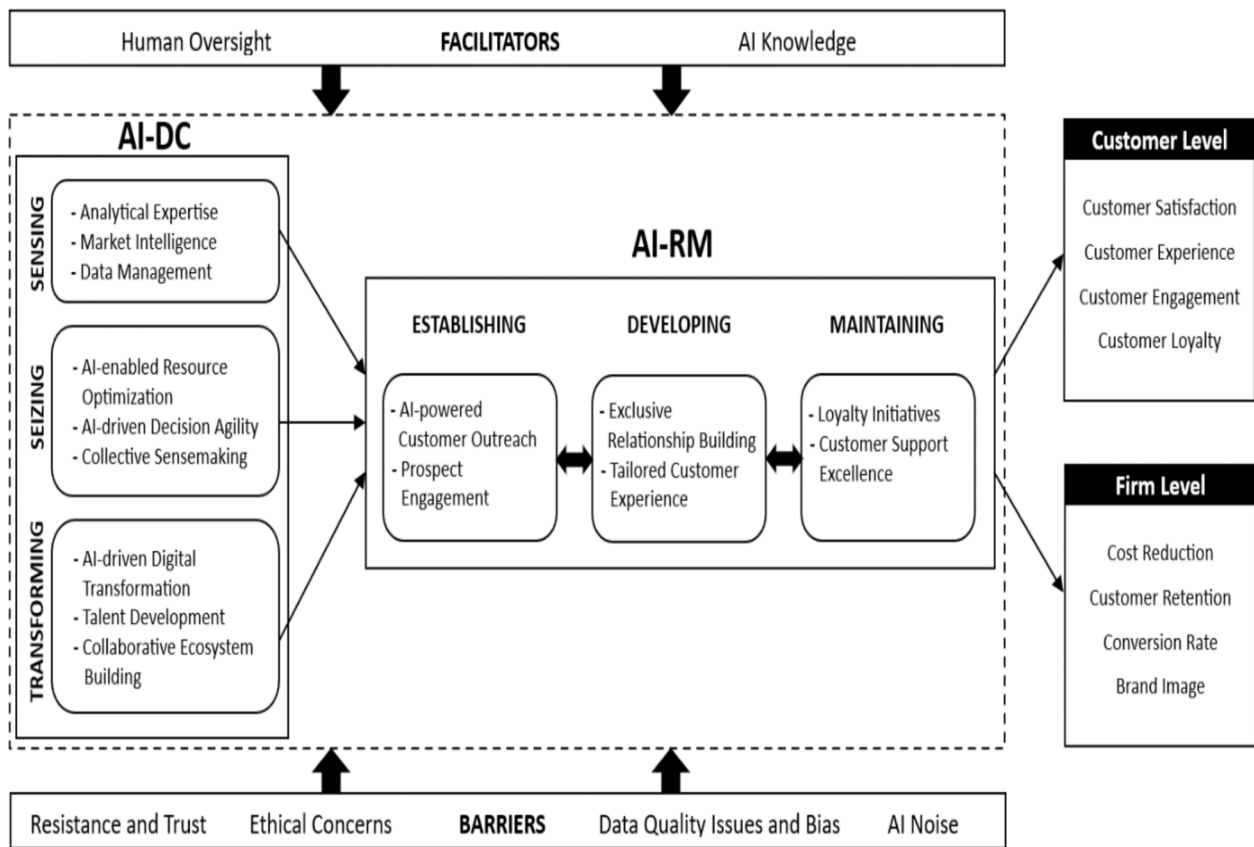


Fig. 2. Research framework: Relationship between AI-Enabled Dynamic Capabilities and AI-Enabled Relationship Marketing.

consideration stages of the customer journey, by leveraging AI-driven analytics and predictive modeling, firms can identify cost-effective strategies for customer acquisition, retention, and engagement, optimizing marketing spend and maximizing return on investment (Kumar & Venkatesan, 2021).

Additionally, AI-RM contributes to enhancing *brand image* and reputation by delivering consistent, high-quality interactions, personalized experiences, and proactive support. Furthermore, AI technologies enhance *conversion rates* by enabling targeted, timely, and relevant communication with customers, leveraging insights derived from data analytics to optimize messaging and offers for maximum impact. These outcomes can support the consideration and decision-making stages of the customer journey.

Moreover, AI-RM facilitates improved *customer retention*, as organizations can leverage predictive analytics to anticipate customer needs and tailor offerings; and use automated processes to deliver personalized experiences that foster loyalty and long-term relationships. Customer retention stands as a quintessential outcome of RM (Palmatier & Steinhoff, 2019) and an important stage of the customer journey. Table 3 demonstrates a list of quotes from our participants regarding AI-RM outcomes as well as facilitators and barriers.

Another notable outcome of AI-RM is improved *customer satisfaction and engagement*, as AI-RM increases personalized recommendations, proactive support, and streamlined experiences that address individual needs and preferences, enhancing overall satisfaction levels (Perez-Vega et al., 2021; Shen, 2014). Moreover, AI-RM enhances *customer experience* by providing seamless, intuitive interactions across multiple touchpoints throughout the customer journey, leveraging chatbots, virtual assistants, and recommendation engines to deliver relevant information, assistance, and guidance in real time (Ameen et al., 2021). Further, AI-RM fosters *customer loyalty* by building emotional connections, providing value-added services, and rewarding loyalty through personalized

incentives and rewards programs, as explained above. Based on the above discussion, we propose the following:

Proposition 2. *The implementation of AI-RM positively affects firm-level outcomes, such as cost reduction, customer retention, conversion rate, and brand image; and customer-level outcomes, such as enhanced customer satisfaction, experience, engagement, and loyalty.*

4.4. Facilitators and barriers

Human oversight, coupled with *AI knowledge*, serves as a crucial facilitator in harnessing the potential of AI in AI-DC and AI-RM. Human employees play a significant role in guiding the utilization of AI, providing critical oversight to ensure AI's effectiveness, reliability, and ethical integrity. By actively monitoring AI systems and interpreting results within the context of organizational goals, human oversight ensures that AI-driven processes align with strategic objectives and deliver meaningful outcomes (Kitsios & Kamariotou, 2021). Jarrahi (2018) discussed the crucial role of human-AI collaboration in leveraging AI's potential while mitigating its risks. This is particularly important in technologically emerging economies like India, where human resources play an essential role in shaping the different types of AI adoption and the value, they can offer to firms within a dynamic business environment (Roy et al., 2025). We add to this finding by highlighting the importance of humans monitoring AI functions. Moreover, possessing comprehensive knowledge about AI functionalities and limitations empowers organizations to make informed decisions regarding AI adoption, implementation, and integration. By leveraging human expertise alongside AI capabilities, organizations can navigate complexities and mitigate risks concerning AI implementation for DC and RM (see Table 3).

Despite the potential benefits, several barriers impede the effective implementation of AI for realizing AI-DC and AI-RM. *AI noise*,

Table 3
List of exemplary quotes for facilitators, barriers, and outcomes.

Dimensions	Quote
Facilitators	
Human oversight	When AI is not able to handle a task, human intervention is necessary, while, generally, AI manages the processes (R32).
AI knowledge	The initial AI integration posed difficulties for the engineers due to its novelty, especially in the context of marketing. The prior knowledge of staff and engineers about AI is a huge help (R3).
Barriers	
AI noise	I think the only pain point in the first place is that every day there is a new tool coming out, right? [The question is] which one is a better one in the market? That is something which makes it hard to make a good decision (R40).
Data quality issues and bias	Data quality issues can be hurdles; similar to unexpected challenges during a climb (R11).
Ethical concerns	Company needs to incur substantial costs for maintaining data security and complying with the ethical AI norms. If you cannot resolve ethical concerns, using AI in customer relationships will lead to more costs than benefits (R58).
Resistance and trust	Our biggest hurdle is [our] reliance on traditional, offline retail. Collecting data becomes tricky when most customers are not shopping online. Most of [B2B company name]'s customers are reluctant to share their information through our digital platforms (R25).
Customer Level Outcomes	
Customer engagement	... for example, our AI-powered loyalty program offers personalized rewards and early access to new products; that creates a sense of exclusivity and drives greater customer engagement (R14).
Customer experience	Through AI systems, we personalize marketing campaigns and drug information based on individual patient needs, which ensure greater relevance and impact, and also improve patients' overall experience (R12).
Customer satisfaction	Personalized interactions and relevant content build trust that leads to happier customers who stick with [company name] for a long time (R1).
Customer loyalty	It's not just about flashy technology; it's about building deeper connections with our customers, ultimately driving loyalty and influencing their repeated purchasing decisions (R59).
Firm Level Outcomes	
Cost reduction	This shift [AI implementation for RM] not only increases CTR [click-through rate] by presenting users with more relevant content and advertisements but also makes the process more cost-effective and efficient, requiring less manpower and financial resources (R61).
Customer retention	Through the delivery of tailored solutions and efficient support, we have observed a notable surge in customer retention rates (R10).
Conversion rate	We had a very good experience using it [AI] for campaign design and management. This approach resulted in a significant uptick in conversion rate for targeted campaigns (R36).
Brand image	Just like we did, businesses have a fantastic potential to create a more human-like and relatable brand image that can really foster client interactions thanks to the flexibility and subtlety of AI technology (R44).

characterized by the proliferation of AI tools across diverse categories and the constant influx of new technologies, leads to confusion, complexity, and inefficiency. Organizations struggle to navigate through the myriad of AI solutions, facing challenges in selecting the most suitable tools for their specific needs and managing interoperability issues (Ångström et al., 2023). Additionally, *ethical concerns* surrounding AI, including compliance with regulations, safeguarding customer privacy, and addressing data security, pose significant challenges for organizations seeking to leverage AI technologies for marketing purposes. Similarly, Mittelstadt et al. (2016) explored ethical concerns associated

with AI, underscoring the importance of addressing these issues to ensure responsible AI integration. Moreover, *data quality issues and biases* inherent in AI algorithms further hinder the effectiveness of AI-DC and AI-RM. These issues contribute to decision inaccuracies and ultimately undermine relationships with customers (Shrestha et al., 2019). The other barrier is related to *resistance and trust*. Resistance to AI adoption, lack of trust in AI systems (from both customers' and employees' sides), and over-reliance on existing technologies emerged in our data analysis as formidable barriers, impeding organizational efforts to harness AI-driven dynamic capabilities and optimize customer relationships for sustained success. Understanding the facilitators and barriers is crucial, as they directly influence the effectiveness of AI-DC and AI-RM. Facilitators like human oversight and AI knowledge enhance the integration and application of AI across dynamic capabilities and RM phases. Conversely, barriers such as AI noise and ethical concerns can disrupt the synergy between AI-DC and AI-RM, highlighting the need for strategic oversight and robust governance frameworks. Based on the above discussion, we propose the following:

Proposition 3a. *The relationship between AI-DC and AI-RM is moderated by facilitators and barriers, such that the positive effect of AI-DC on AI-RM is strengthened by the presence of facilitators (i.e., human oversight and AI knowledge) and weakened by the presence of barriers (i.e., AI noise, ethical concerns, data quality issues, bias, and resistance).*

Proposition 3b. *The relationship between AI-RM and firm- and customer-level outcomes is moderated by facilitators and barriers, such that the positive effect of AI-RM on outcomes is strengthened by facilitators (i.e., human oversight and AI knowledge) and weakened by barriers (i.e., AI noise, ethical concerns, data quality issues, bias, and resistance).*

5. Discussion

In this study, we have employed the Gioia methodology to analyze interview data pertaining to dynamic capabilities and RM facilitated by AI within firms. Although our data originate from interviews with managers in Indian organizations, we argue that our findings are generalizable beyond the contextual and cultural boundaries of a single country, as the development of the AI-enabled RM model, along with AI-DC (sensing, seizing, transforming), provides a comprehensive framework for understanding the integration of AI technologies into marketing strategies that is applicable in the context of different markets and countries. For instance, our findings reveal three phases of AI-RM and three components of AI-DC, each comprising distinct dimensions that highlight the multifaceted nature of AI-driven marketing initiatives. Additionally, we identify facilitators and barriers that influence firms' ability to leverage effectively AI technologies throughout the customer journey, from efforts to enhance customer awareness to supporting strategies aimed at improving customer retention. Although, arguably, some of these barriers and enablers of AI can be considered geographically and culturally specific to our Indian context (e.g., data quality, ethical concerns, AI knowledge), we argue that our findings capture a representative image of digital transformation and technology adoption in emerging economies and are aligned with earlier studies in this area (Ma & Zhu, 2022; Malik et al., 2022). Therefore, through this research, we offer several theoretical and practical contributions by presenting a nuanced understanding of the interplay between AI, dynamic capabilities, and RM, shedding light on the mechanisms through which organizations can harness AI to enhance customer relationships and drive sustainable success.

5.1. Theoretical Contribution

The identification of the dual role of AI and the development of the AI-RM and AI-DC frameworks represents two key theoretical contributions to the literature on marketing and organizational strategy. Firstly, the AI-RM model integrates insights from RM theory with advancements

in AI, offering a comprehensive framework for understanding how firms can leverage AI technologies to enhance customer relationships throughout the entire customer journey. This contributes to the existing literature on AI applications, which has paid insufficient attention to how organizations can harness the technological capabilities of AI, not on a firm level but focusing on specific processes and strategies within the organization. By delineating the components of establishing, developing, and maintaining relationships with customers using AI, the model provides a nuanced understanding of the mechanisms through which AI influences RM strategies. This integration also contributes to the literature on applications of AI in times of market volatility and change, as it underscores the evolving nature of RM in the digital age, where AI-driven analytics, automation, and personalization play increasingly prominent roles in shaping customer interactions (Palmatier & Steinhoff, 2019). Moreover, identifying dimensions such as AI-powered customer outreach and tailored customer experience helps set the scene for a more academic exploration of AI-RM using quantitative methods.

Second, the AI-DC framework extends the theoretical understanding of organizational capabilities by incorporating AI as a key enabler of dynamic capabilities. Building upon the dynamic capabilities literature (Teece, 2007) – which emphasizes firms' ability to sense, seize, and reconfigure resources in response to changing environments – the AI-DC framework highlights the role of AI technologies in enhancing organizational agility, adaptability, and innovation in dynamic markets. By conceptualizing AI as a distinct capability that enables firms to harness data-driven insights, automate decision-making processes, and facilitate organizational learning, the framework expands the scope of dynamic capabilities theory to include the transformative impact of AI on organizational processes and outcomes (Abou-Foul et al., 2023; Teece et al., 2016). Moreover, by delineating AI-DC dimensions (such as collective sensemaking and collaborative ecosystem building), the AI-DC framework offers a structured understanding for the strategic development of AI capabilities. We have also identified the facilitators and barriers of AI deployment for DC and RM (such as human oversight and AI knowledge), which can provide insights into the boundary conditions of using AI for strategic marketing purposes.

5.2. Managerial implications

The findings of this study provide several managerial implications. For organizations seeking to leverage AI in their marketing strategies, our findings can enable them to improve their organizational processes and avoid the competency trap that studies associate with technology adoption and investment in emerging technologies (e.g., Mu & Jiang, 2024). First, the AI-DC framework provides guidance for organizational leaders seeking to allocate resources and deploy AI technologies more strategically to hold a competitive edge by being responsive to market changes. Our findings suggest that organizations can use AI to (a) identify opportunities in the market (e.g., data management and market intelligence for sales forecasting and sentiment analysis), and (b) seize these opportunities (e.g., through resource optimization and decision agility to support customer segmentation, content customization, and personalized product recommendations) to transform resources and assets (e.g., AI-driven digital transformation and talent development to support cost reduction, improve conversion rate, and enhance customer experience and retention). Therefore, managers can leverage insights from the AI-DC framework to develop strategic initiatives for integrating AI into organizational processes to increase organizational responsiveness, thus fostering a culture of innovation and collaboration and driving competitive advantage. Also, using the AI-DC framework, managers can enhance their adaptability in response to evolving consumer preferences, which enables them to develop and maintain sustained relationships with their customers over time.

Moreover, the AI-RM model offers meaningful insights for managers, as it identifies specific dimensions that marketers can utilize to develop

targeted strategies to establish (e.g., through personalized content and lead nurturing), engage (e.g., through automated email marketing campaigns and virtual assistants), and retain (e.g., through personalized rewards and loyalty programs, customized customer support, and automated surveys and feedback) customer relations using AI. Although existing studies have highlighted the important role that AI applications can play in marketing, the current study offers more strategic and actionable insights, as it proposes a more holistic approach to leveraging AI technologies throughout the customer journey by delivering personalized interactions, proactive support, and anticipatory offerings, thus helping organizations to enhance customer satisfaction, loyalty, and lifetime value. This holistic approach can involve using AI to identify and connect with potential customers in the initial awareness stage of the customer journey (AI-powered customer outreach), or to curate targeted communication and personalized product recommendations to support the transition from the consideration to the decision-making stage (AI-supported prospect engagement). Similarly, AI adoption can support customer retention and advocacy efforts through personalized loyalty initiatives and excellent customer support. Finally, our model explains how AI-RM can be implemented to support smooth customer transition from one stage of the customer journey to the next, reducing customers falling off the customer journey “cycle”, by harnessing AI-driven data analytics and ML algorithms to gain deep insights into customers' preferences, behaviors, and lifestyles, which can support not only a tailored customer experience, but also relationship-building at different stages of the journey.

5.3. Limitations and future research

This study has several limitations that open avenues for future research. First, the research focused primarily on qualitative data from interviews with managers in Indian organizations. Although our findings and contributions are to an extent generalizable beyond the Indian context, we understand that our propositions may primarily apply to (economically and technologically) emerging countries and the relevance and application of our model might differ for more technologically advanced markets. Future research could employ a more cross-cultural, quantitative approach, utilizing data from different countries, to empirically validate our findings and to strengthen the robustness of the AI-RM and AI-DC frameworks. Additionally, the study primarily examined the perspectives of firms utilizing AI technologies in marketing and organizational processes. Future research could explore the perceptions and experiences of customers interacting with AI-powered initiatives, providing a more comprehensive understanding of the impact of AI-RM on customer outcomes.

Further, the study did not deeply explore the ethical, legal, and societal implications of AI implementation in RM. Future research could explore the ethical dilemmas surrounding AI-driven decision-making, the implications of algorithmic biases on customer perceptions and behaviors, and the regulatory challenges associated with AI-enabled marketing practices. Moreover, given the rapid pace of technological innovation and evolving consumer preferences, ongoing research is needed to explore emerging trends and developments in AI-RM, such as the specific impact of generative AI in RM (Chaturvedi et al., 2024).

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CRediT authorship contribution statement

Sanjit K. Roy: Writing – original draft, Visualization, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Ali N. Tehrani:** Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Ameet Pandit:** Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Chrysostomos Apostolidis:** Writing

– original draft, Validation, Methodology, Investigation. **Subhasis Ray:** Writing – original draft, Supervision, Investigation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jbusres.2025.115309>.

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