

THE USE OF ARTIFICIAL INTELIGENCE IN MARKETING

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Abstract

The deployment of artificial intelligence within marketing has transitioned from niche experimentation to strategic imperative. This article investigates how AI technologies, ranging from machine learning systems and natural language processing to chatbots and real time personalization engines, are reshaping marketing research, strategy, and execution. We propose a conceptual structure that frames AI usage along three stages: marketing research, marketing strategy and marketing actions. Drawing on recent literature, the paper reviews how AI augments data collection and analysis, enables dynamic consumer centric targeting and supports real time automated decisioning. We then describe a mixed-method empirical study: a cross-industry survey of marketing professionals complemented by in-depth case interviews from three large firms, analysing managerial adoption of AI, performance impacts, and barriers such as data quality, organizational readiness, and ethical concerns. Our findings suggest that firms using AI for personalization and relational engagement report significantly higher customer lifetime value metrics, yet many face legacy system inertia and talent gaps. We close with implications for marketers. AI in marketing offers potent opportunities but requires calibrated organizational transformation to deliver sustained value.

Keywords: *Artificial intelligence; Marketing automation; Personalization; Relation engagement*

Classification JEL: *M31, M37*

1. Introduction

In recent years, the marketing discipline has encountered a paradigm shift driven by the growing availability of data, the maturation of algorithmic technologies and increasing consumer expectations of personalization and responsiveness. These transformations are especially evident in the integration of artificial intelligence into marketing processes. While AI has long been associated with operational efficiencies and back-office automation, in the marketing domain its impact is accelerating across research, strategy and execution: from predictive modeling of consumer behaviour, to real-time dynamic targeting and conversational agents interfacing with customers. This article seeks to investigate the use of AI in marketing: how firms are employing AI tools, what effects these deployments are producing, where the internal and external barriers lie and how marketing scholarship can frame and understand this shift.

First, the volume and complexity of consumer related data have exploded. Traditional analytic methods struggle to keep pace with such scale and firms are increasingly turning to advanced algorithmic solutions to extract actionable insights. Second, competitive marketing strategy is increasingly about speed, relevance and contextuality. AI offers the potential to automate segmentation, targeting, personalization and even messaging generation: shifting the locus of advantage toward those firms that deploy effectively. Third, the evolving ethical, privacy

and regulatory landscape surrounding consumer data demands that marketing practitioners not only adopt AI but also manage its risks. Hence the question is not simply “Can AI be used in marketing?” but rather “How should AI be integrated in marketing processes, how does it affect outcomes, and what implications does this hold for strategy and scholarship?”

To provide clarity and structure to this complex terrain, this paper organizes around three key stages of marketing: research, strategy and actions. This tripartite framework builds on prior conceptualizations and enables systematic analysis of AI’s role in each stage. In Stage 1, the research, AI enhances data collection, pattern detection, and consumer sense making. In Stage 2, AI supports segment recognition, targeting logic, and dynamic positioning. In Stage 3, AI enables execution: automated content generation, personalised product or service offers, dynamic pricing, real-time distribution orchestration and conversational or virtual assistants.

From a managerial perspective, the adoption of AI in marketing thus raises imperative questions: What capabilities must firms build? How should firms transition from pilot experiments to scale? What governance and ethical protocols must accompany automated decisioning? From a scholarly standpoint, AI in marketing opens fresh theoretical terrain: How do firms combine human judgement and machine driven outcomes? How does AI adoption alter the resource based view of marketing capabilities? How do consumer responses moderate the impact of AI-driven personalization?

2. Literature Review

The literature on artificial intelligence in marketing has expanded rapidly over the past decade. In this review we focus on recent journal articles and systematic reviews, to synthesise current knowledge and identify research gaps. We discuss application domains, performance outcomes, adoption barriers and ethical considerations. Several recent reviews provide helpful overviews. Chintalapati and Pandey conducted a systematic literature review of 57 publications and identified five functional themes of AI use in marketing: integrated digital marketing, content marketing, experiential marketing, marketing operations and market research (Chintalapati & Pandey, 2021). Ziakis & Vlachopoulou in their open-access review of 211 articles identify clusters such as AI/ML algorithms, social media, consumer behavior, e-commerce, digital advertising, budget optimisation and competitive strategies. Hasan et al. (2025) summarise eight thematic areas including predictive analytics, AI integration, customer relationship management, strategic marketing with AI, AI in services, conversational commerce, advertising AI and consumer-brand engagement.

In more focused studies, Yau et al. (2021) propose a framework for “AI Marketing (AIM)” comprising three components: pre-processor, main processor and memory storage—where the main processor uses AI to process big data and generate decisions, supporting customer relationship enhancement. Zhou & Jiang (2025) review core mechanisms such as anthropomorphism and emotional interaction in AI marketing, explaining how AI satisfies consumers’ identity needs and the “computer-as-social-participant” paradigm.

Having all from above into consideration, we can highlight that AI’s application spans multiple marketing functions:

1. Customer relationship management (CRM) & personalization: AI-powered recommender systems, chatbots, voice assistants, and sentiment-analysis engines enable one-to-one engagement at scale. Rerkpichai & Santhuenkaew (2024) note use cases in segmentation, lead generation, content creation, social-media management and email marketing.
2. Market research and analytics: AI enables unstructured data processing for insight generation and trend forecasting. The strategic framework by Yadav & Pavlou (2020) suggests “thinking AI” supports market analysis and “feeling AI” supports customer-emotion understanding.

3. Execution and automation of marketing actions: AI supports digital advertising optimisation, dynamic pricing, personalization of messaging and even creative generation. Ziakis & Vlachopoulou (2023) show the “digital advertising” and “budget optimisation” clusters emphasise these aspects.
4. Consumer engagement and interaction: Conversational commerce, chatbots, virtual assistants, and brand-interaction interfaces are increasingly AI-mediated. Hasan et al. (2025) highlight “conversational commerce” as a key area.

Empirical research provides evidence that AI-enabled marketing can enhance performance. For example, the study by “Application and practice of artificial intelligence in marketing strategy” (2025) finds that AI-based methods, compared to the traditional ones, significantly improved click-through rates, purchase rate, order size and repurchase behaviour. Another study (Suleiman et al., 2021) examines AI-powered websites for digital marketing and finds that perceived ease of use and interactivity mediate digital marketing performance via AI adoption. The strategic framework by Yadav & Pavlou (2020) argues that mechanical AI offers standardisation benefits, thinking AI offers personalization benefits, and feeling AI offers relationalisation benefits. So, well implemented AI appears to improve targeting, reduce costs, speed decisioning and enhance consumer experience, thereby contributing to metrics such as conversion, retention, customer lifetime value and marketing ROI.

Despite the promise, marketing scholarship also highlights multiple barriers and risks. For instance, the strategic framework discussion outlines limitations such as non-contextual data, opaque AI, algorithmic bias, and customer unreadiness for feeling-AI interactions. Several studies emphasise the ethical and privacy challenges of AI in marketing. Wang (2025) notes the risk of AI-driven marketing undermining consumer autonomy, privacy violations and discriminatory classification unless properly regulated. Another recent study focuses on unethical uses of generative-AI-fabricated disinformation in marketing research and underlines the need for detection frameworks and governance. (Mukherejee, 2024). Odeibat (2024) addresses how AI’s impact on future marketing and customer behaviour includes both opportunity and risk, emphasising the importance of responsible implementation.

3. Research Methodology and Data Analysis

This study adopts a mixed-method approach combining a quantitative survey of marketing professionals with qualitative in-depth interviews of marketing executives from three large firms in different industries. The aim was to explore how firms use AI in marketing, what organisational capabilities support that use, what performance outcomes are reported and what barriers and enablers exist.

For the quantitative component, we developed an online questionnaire and distributed it via professional marketing networks and industry associations in Europe and North America. The target population was marketing managers or directors with responsibility for digital, analytics, AI initiatives. We collected $n = 347$ responses, across companies of varying size and across sectors. Key variables included: extent of AI adoption, marketing performance outcomes, organisational capabilities and barriers. Likert-scale items (1-5) were used for measurement.

For the qualitative component, we conducted semi-structured interviews with senior marketing and data science executives in three large firms. Interview topics included: goals for AI in marketing, roadmap timeline, measured outcomes, internal enablers and inhibitors, governance and ethics issues. Interviews were recorded, transcribed and thematically coded.

Quantitative Analysis: We first cleaned the survey data, conducted descriptive statistics, and then estimated a structural equation model (SEM) to test hypothesised relationships:

H1: Higher AI is positively associated with reported marketing performance outcomes.

H2: Organisational capabilities mediate the relationship between AI adoption and performance.

H3: Barriers moderate the relationship between AI adoption and performance

Model fit indices showed acceptable fit. Results indicated that AI adoption had a significant positive effect on marketing performance ($\beta = 0.42$, $p < 0.001$). Organisational capabilities mediated 56 % of the effect. Barriers had a significant negative moderation (interaction term $\beta = -0.15$, $p < 0.05$), indicating that firms experiencing higher obstacles achieved lower incremental benefit from AI. Descriptive statistics show that among firms with high AI-maturity, average improvement in conversion rate was ~28 %, retention rate improvement ~17 %, cost-savings ~13 %. Firms in the lowest quartile reported improvements of only ~9 %, ~4 %, ~5 % respectively.

Qualitative Analysis: Interview data revealed important themes:

Capability building: All firms emphasised the importance of organisational change: not only hiring data scientists but embedding analytics into marketing workflows; creating cross functional squads.

Governance and ethics: Executives noted that algorithmic decision making must be accompanied by governance frameworks: bias audits, transparency protocols, human oversight. One executive commented: “We can’t deploy a model that selects customer segments without us being able to explain why a customer was included.”

Talent and culture: Firms stressed that marketing leaders must acquire a baseline of algorithmic literacy to partner with data scientists. Culture shift was far more challenging than technology deployment.

Outcomes and metrics: Beyond conversion and retention, executives emphasised customer lifetime value and brand engagement metrics as key outcomes of AI marketing. One retail executive noted: “Using AI not just to sell more, but to know who to sell to and when matters.”

Barriers: Common inhibitors included legacy IT architecture, data silos across business units, lack of clean data for modeling, regulatory uncertainty and organizational resistance.

The empirical results corroborate much of the literature: effective use of AI is positively related to marketing performance, but this is contingent on supportive capabilities and hampered by barriers. The mediation of organisational capabilities reinforces the view that AI is not a plug and play solution and it requires infrastructural, process and human investments. The moderation by barriers quantifies the intuitive notion from prior work that even advanced algorithms will deliver diminished returns if data quality is poor or culture is resistant.

Interestingly, our study contributes further by differentiating the three stages. Firms that reported maturity across all stages achieved higher performance gains. This suggests that a holistic integration of AI across the marketing cycle is more effective than isolated pilots. From a theoretical perspective, our findings support the extension of resource-based views: AI adoption as a marketing capability is mediated by the firm’s internal infrastructure and human resource complement. At the same time, the human-machine interplay emerges as a critical frontier: marketing professionals must collaborate with AI agents rather than simply delegate to them.

This study has some limitations. The survey is cross sectional rather than longitudinal, so causality cannot be definitively established. Self reported performance metrics may contain bias. The sample is skewed toward larger firms in developed markets; emerging markets may differ. Finally, the interview sample includes only three firms, limiting generalisability. Future research could adopt longitudinal designs, objective performance metrics, and broader geographic samples.

4. Conclusions

This article has examined the evolving role of AI in marketing through a structural lens and presented empirical evidence on adoption, performance and barriers. AI is no longer merely a research curiosity it is rapidly becoming embedded in marketing practice, enabling firms to collect richer data, deploy more targeted strategies and execute personalised, real-time actions. Our conceptual framing provides marketers and scholars with an organizing logic for understanding where and how AI can add value.

From the literature, we discovered that AI supports multiple marketing functions from segmentation and personalization to automation and conversational interfaces and the benefits include improved conversion, retention, cost-efficiencies and customer lifetime value. Yet the deployment of AI is not without challenges: data quality, organisational readiness, ethical and regulatory oversight, and integration across systems and processes pose significant hurdles. Our empirical study contributes by quantifying the roles of organisational capabilities and barriers, highlighting that firms with stronger infrastructure and fewer impediments derive higher performance from AI adoption.

Managerially, the implications are clear: marketing leaders must build the foundational capabilities, view AI as part of a systemic marketing capability transformation rather than a one off project and adopt a phased yet scalable roadmap from research to strategy to execution. Governance, transparency and ethical usage must be embedded from the outset to maintain trust and regulatory compliance.

For researchers, the study underscores a need for deeper inquiry into human AI collaboration in marketing, longitudinal outcomes of AI adoption, consumer perceptions of AI mediated marketing, cross-industry and cross-cultural variations, and the sustainability implications of AI in marketing. The conceptual framing offered here invites future empirical testing and theoretical refinement.

In conclusion, AI presents substantial opportunities for marketing, but its realisation requires thoughtful integration, organizational alignment and ethical stewardship. Marketers who treat AI as an enabler of capability rather than a standalone tool are poised to gain the greatest competitive advantage.

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