

Taxonomy of Generative Artificial Intelligence (Gen-AI) Use in Marketing

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Abstract: Generative Artificial Intelligence (AI) is reshaping marketing by enabling hyper-personalized content, real-time consumer engagement, and the automation of marketing processes. While it unlocks substantial opportunities for innovation and efficiency, it also presents challenges related to consumer trust, ethical governance, and organizational preparedness. This entry offers a comprehensive examination of generative Artificial Intelligence in marketing, distinguishing it from broader Artificial Intelligence applications and analyzing its implications for strategy,

creativity, and operations. To structure this rapidly evolving field, a taxonomy of generative Artificial Intelligence applications is proposed, distinguishing between consumer-facing and business-facing domains and encompassing key areas such as shopping personalization, consumption experience, decision support, and financial optimization. The entry concludes by identifying key avenues for future research, with particular attention to organizational, ethical, and cultural dimensions that are likely to shape the trajectory of generative Artificial Intelligence in marketing.

1. Introduction

Artificial Intelligence (AI) has profoundly reshaped numerous industries, restructuring business processes, activities and interaction (Sestino & De Mauro, 2022) and, in the marketing field continuously emerging as a key domain where its applications are rapidly expanding (Verma et al., 2021; Vlačić et al., 2021). Among the various AI subfields, Generative Artificial Intelligence represents a revolutionary advancement, leveraging deep learning models to create new content, including text, images, audio, and even video (Ooi et al., 2025). Rooted in broader AI methodologies such as machine learning and natural language processing, generative AI has transitioned from a theoretical construct to a widely adopted technological asset (De Mauro et al., 2022; Herhausen et al., 2024). Coherently Ronge et colleagues (2025) recently propose a clear definition of Generative Artificial Intelligence (hereafter, Generative AI), refers to AI systems capable of producing text, images, or other media in response to prompts; These systems utilize generative models that learn patterns and structures from input data, enabling them to create new content that resembles the training data while introducing a degree of novelty.

With no surprises, the Generative AI market size is expected to show an annual growth rate (CAGR 2025-2030) of 41.52%, resulting in a market volume of US\$356.05bn by 2030 (Statista, 2025). Today, businesses utilize generative AI for content generation (Ramesh et al., 2024; Verma et al., 2021), consumers engagement (Kumar et al., 2025), personalized digital advertising (Baek, 2024), and marketing automation (Das et al., 2024), thus fundamentally altering traditional marketing practices. However, its increasing adoption – and democratization (Chen et al., 2024) is mainly driven by the ability to enhance efficiency of marketing activities, optimize consumers interactions, and finally generate creative and personalized solutions at scale. Nonetheless, by 2028, the market for AI in marketing is predicted to reach \$107.5 billion (Forbes, 2024). However, as generative AI proliferates, a growing body of knowledge emerges in a fragmented and disorganized manner, posing challenges for both practitioners and scholars in identifying best practices, ethical concerns, and strategic implementations. The lack of a structured framework limits the ability to systematically assess and apply generative AI in marketing contexts. This chapter addresses this gap by proposing a taxonomy that classifies generative AI applications in marketing, providing a structured understanding of its roles, functionalities, and strategic implications. By offering a fresh and methodical categorization, this work aims to facilitate knowledge consolidation, guide academic inquiry, and support industry practitioners in leveraging generative AI effectively within marketing ecosystems.

2. Artificial Intelligence vs. Generative Artificial Intelligence: What matters?

The terms Artificial Intelligence (AI) and Generative Artificial Intelligence (Gen AI) are still used ambiguously, leading to frequent misunderstandings, especially among non-professionals, and thus by considering consumers and users in general. With the rapid rise and widespread adoption of Generative AI, it is often mistakenly equated with broader artificial intelligence. However, while Generative AI focuses on creating new content, such as text, images, and music, contents, based on learned patterns, general AI encompasses a much wider range of capabilities, including reasoning, problem-solving, and autonomous decision-making. To date, the Artificial Intelligence (AI) has its origins in the 1950s, when pioneers like Alan Turing and John McCarthy laid the foundations for machine intelligence: Such system, where mainly focused on rule-based systems and symbolic reasoning, but progress was slow due to computational limitations (McCarthy, 1987; Rojas, 2024). In the 1980s and 1990s, machine learning and neural networks revived AI, leading to practical applications (Aggarwal, 2018; Schmidhuber, 2020). Finally, the 21st century welcomed an explosion in AI capabilities, driven by big data, deep learning, and increased computing power, enabling modern breakthroughs in automation, decision-making, and creative problem-solving (Liu et al., 2018).

Formally, Artificial Intelligence (AI) is a multidisciplinary field that focuses on creating systems capable of performing tasks that typically require human intelligence, such as reasoning, learning, problem-solving, perception, and language understanding (see Das et al., 2015; Oke, 2008). Recent literature highlight that this kind of “intelligent” digital tool, integrating mathematical, statistical, and optimization techniques to develop intelligent environments, may deeply transform organizational structures, processes, and services, positively impacting on both decision-making, managerial and marketing choices (De Mauro et al., 2022; Sestino & De Mauro, 2022). Nonetheless, such an integration of AI into business processes facilitates predictive analytics and automation tools, supporting the development of intelligent systems that can adapt and respond to complex scenarios, enabling marketing automation approaches as well (Guercini et al., 2023; Yau et al., 2021). On the other hand, first of all, the generative AI “derives” from Artificial Intelligence applications: Thus, Generative AI formally refers to a type of artificial intelligence that may create and generate, when properly instructed, new contents (e.g., as for text, images, music, code), by leveraging (and learning) from large datasets (Feuerriegel et al., 2024; Sengar et al., 2024). However, unlike traditional AI, which classifies or predicts based on input data, Generative AI produces original outputs by identifying and replicating patterns, by relying on deep learning models like GANs and transformers, enabling human-like creativity in automation (Jo et al., 2023). However, Generative AI is not exempt from limitations, as it can produce biased, inaccurate, or misleading outputs due to the quality of its training data and inherent model constraints (Bender et al., 2021; Jo et al., 2023); Indeed, Generative AI software providers acknowledge that such errors may occur as well, emphasizing the need for human oversight and critical evaluation of AI-generated content. For instance, as for Chat GPT the company has stated “sometimes writes plausible-sounding but incorrect or nonsensical answers.” (OpenAI, 2022). Such phenomenon, interestingly known as “hallucination” is common among large language model, also asking (and remind) users the importance of human oversight and critical evaluation when using AI-generated content to mitigate potential errors. However, despite few limitations, this technology is widely used in content generation,

design, marketing, and personalized user experiences, and due its potentialities is currently subverting and reshaping the marketing landscape (Hartmann et al., 2024).

3. Discussion

The taxonomy of generative AI applications proposed in this chapter highlights the increasing complexity and pervasiveness of AI-driven technologies within marketing ecosystems. Rather than being confined to a set of operational tools, generative AI is emerging as a deeply transformative capability that cuts across strategy, innovation, customer engagement, and ethical governance. Understanding the implications of this technology requires a dual lens: one that recognizes its concrete utility across marketing practices, and another that positions it within broader theoretical debates on organizational resources, capabilities, and digital transformation.

At a strategic level, the deployment of generative AI reshapes the way firms conceptualize and implement marketing activities. Traditional marketing models often emphasized human creativity, sequential campaign planning, and fixed content strategies. Generative AI disrupts this paradigm by enabling real-time content creation, adaptive personalization, and automated dialogue with consumers. However, the mere adoption of such tools is not sufficient to generate competitive advantage. Firms must embed generative AI within coherent strategic frameworks, ensuring that the technology complements and amplifies their existing brand identity, customer experience objectives, and market positioning.

The Resource-Based-View provides a foundational lens for understanding the strategic role of generative AI, but recent extensions of this theory offer a more complex interpretation. While the classical Resource-Based-View suggests that competitive advantage arises from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991), newer perspectives emphasize the combinatorial nature of resources (Amit & Han, 2017; El Sawy et al., 2016; Volberta & Karali, 2015). Generative AI, in this sense, should not be treated as a standalone resource but as a component of a larger, interconnected resource system that encompasses human expertise, data assets, technical infrastructure, and established organizational routines. Its strategic value does not stem solely from access to the technology itself, which is increasingly commoditized and accessible through off-the-shelf platforms, but from the firm's unique ability to embed and orchestrate it within its broader ecosystem of complementary resources and capabilities.

The effectiveness of generative AI, therefore, depends on how it is selectively combined with and adapted to existing internal capabilities such as marketing analytics, customer relationship management systems, content strategy, and creative direction. For instance, while many organizations may use generative AI to automate content production, only those that align this automation with deep consumer insight, a well-defined brand tone, and iterative A/B testing capabilities are likely to generate meaningful differentiation in market outcomes. This integration requires not only technical alignment but also organizational alignment, ensuring that generative outputs are governed by established protocols, ethical guidelines, and performance metrics tailored to brand identity and strategic intent.

Moreover, this layered integration opens the door to a feedback loop between AI-generated insights and human decision-making. Marketing teams must learn how to refine prompts, evaluate AI-generated options, and adapt campaign strategies based on real-time consumer responses. In doing so, firms evolve their own dynamic routines and learning mechanisms, turning generative AI into a strategic enabler of agility and adaptive marketing. This

capacity for orchestration and real-time learning is particularly critical in volatile market environments, where responsiveness and relevance can become decisive competitive advantages.

Ultimately, what distinguishes leading adopters of generative AI is not their access to more powerful models, but their ability to continuously reshape and reconfigure the relationship between machine outputs and human judgment, balancing automation with intentionality, efficiency with authenticity, and scale with strategic focus. In this view, generative AI becomes a relational asset rather than a technological end in itself, and its value is inseparable from the surrounding organizational context that activates, constrains, and refines its use.

This ability to embed generative AI within a firm's unique resource architecture highlights not only its role as a configurational asset, but also the importance of continuous adaptation and renewal. While the Resource-Based-View emphasizes the uniqueness and inimitability of resource combinations, it is the firm's ability to dynamically reconfigure those combinations in response to changing technological and market conditions that determines long-term competitiveness. In this regard, the Dynamic Capabilities framework provides critical insight into how firms can sense, seize, and transform opportunities presented by generative AI. Teece et al. (2016) argue that in rapidly changing environments, firms must develop dynamic capabilities to adapt their resource base and decision-making processes. Generative AI exemplifies this dynamic context: its models evolve quickly, user expectations shift rapidly, and ethical standards are still in flux. As such, firms must continuously invest in AI literacy, governance mechanisms, and cross-functional collaboration to ensure that they remain agile in deploying generative tools. Recent contributions to the dynamic capabilities literature (Akter et al., 2023; Jackson et al., 2024; Teece, 2023) underscore the importance of organizational learning loops and real-time feedback, both of which are particularly salient in environments mediated by generative AI where content performance and audience reactions can be monitored and adjusted continuously.

This need for agility and continuous reconfiguration underscores the relevance of dynamic capabilities, particularly in managing the fast-paced evolution of generative AI. However, dynamic capabilities alone do not fully explain the varied patterns of AI adoption observed across firms and industries. The ability to reconfigure internal competencies must also be understood within the broader ecosystem in which firms operate. In this regard, the Technology-Organization-Environment framework (Tornatzky & Fleischer, 1990) offers a complementary perspective by highlighting the external and internal contingencies that shape the adoption of generative AI. While many large enterprises have the infrastructure, budget, and personnel to experiment with and scale AI applications, small and medium-sized enterprises often face significant barriers (Rajaram & Tinguely, 2024). These barriers often manifest in different and compounding ways. Limited technical expertise can inhibit firms from selecting, customizing, or even evaluating the appropriate generative AI tools for their needs, making them dependent on external vendors or generic applications that may not align with their strategic goals. This technical gap is particularly pronounced in small and medium-sized enterprises, where lean teams and limited access to AI-trained professionals constrain experimentation and implementation. In parallel, concerns about content quality and brand control present another critical challenge. While generative AI can accelerate content production, it can also produce outputs that deviate from brand guidelines, lack contextual appropriateness, or contain factual inaccuracies, particularly when models operate on generic prompts without integration into firm-specific data or creative workflows. As such, marketing leaders remain cautious about delegating core elements of brand voice and visual identity to AI systems, especially in sectors where tone, trust, and differentiation are crucial for customer engagement.

Adding further complexity is the uncertainty surrounding regulatory compliance. As global and regional policies on artificial intelligence begin to take shape, such as the European Union's AI Act or evolving standards around data protection, transparency, and explainability, firms must continuously monitor legal developments and adapt their practices to remain compliant. This challenge is particularly burdensome for firms without dedicated legal or compliance teams, raising the risk of reputational or financial penalties stemming from unintended misuse of generative systems.

These structural and organizational barriers illustrate why the success of digital transformation initiatives, and generative AI adoption in particular, is not simply a function of technological readiness. Rather, as recent studies emphasize (Vial, 2021; Dwivedi et al., 2021), it hinges on the interplay between internal organizational factors and external institutional forces. Internally, the presence of an agile, learning-oriented culture and a leadership team with a clear digital vision can significantly influence how generative AI is perceived, implemented, and scaled. Firms that foster psychological safety, encourage experimentation, and align digital projects with broader strategic objectives are more likely to overcome early setbacks and integrate AI systems effectively. Externally, industry norms, competitive dynamics, and consumer expectations create both pressures and incentives that shape how quickly and confidently firms act. For example, in industries where digital content cycles are short and competitors are already adopting AI, firms may feel compelled to follow suit, even if they have unresolved concerns. Conversely, in highly regulated or conservative sectors, early adoption may be constrained by risk aversion and reputational sensitivity.

In the case of generative AI, this interaction between organizational context and environmental turbulence is particularly acute. The external environment is evolving rapidly, not only in terms of technical capabilities, but also with regard to public discourse, consumer sentiment, and ethical norms. Generative AI's ability to produce human-like outputs raises fundamental questions about authenticity, authorship, and manipulation. As these debates become more visible in the media and among policymakers, firms must adjust their AI strategies accordingly. At the same time, consumers are becoming more attuned to the presence of AI in digital experiences. While some segments welcome personalization and efficiency, others may perceive AI-generated content as impersonal or even deceptive, especially if its use is not disclosed transparently. This underscores the importance of maintaining consumer trust and ensuring that generative AI applications are designed and communicated in ways that reflect values such as transparency, inclusivity, and fairness.

Thus, navigating the adoption of generative AI requires firms to develop not only technical capabilities, but also institutional sensitivity and a capacity for continuous environmental scanning. Success in this context is not defined merely by how advanced the tools are, but by how well the organization understands and adapts to the evolving expectations of its stakeholders, employees, customers, regulators, and society at large.

From a practical perspective, the taxonomy illuminates how generative AI supports a shift toward hyper-personalization at scale, allowing firms to deliver individualized messages, offers, and experiences in real-time. This personalization, however, must be carefully managed to avoid the perception of surveillance or manipulation. Research on algorithmic transparency and consumer privacy (Benlian et al., 2022; Selvakumar, 2025; Soni, 2024) suggests that while consumers appreciate relevance and convenience, they are also increasingly aware of the trade-offs involved in data-driven interactions. Marketers therefore face a delicate balancing act: leveraging generative AI to enhance customer value while maintaining trust, privacy, and ethical standards.

An important strategic implication that emerges from the literature is the need to redefine organizational capabilities and roles. The integration of generative AI into marketing workflows demands not only new technologies but also new mindsets and skillsets. The rise of hybrid roles, such as prompt engineers, AI content supervisors, and digital ethicists, reflects the necessity of bridging creative judgment with technical understanding. In addition, the success of generative AI initiatives depends on interdisciplinary collaboration, where marketing teams, data scientists, designers, and legal experts must co-create guidelines, performance metrics, and safeguards. The implementation of generative AI also opens up novel avenues for marketing innovation, extending beyond process optimization to new forms of value creation. Firms are increasingly experimenting with AI-driven storytelling, interactive experiences, and co-creative platforms that allow consumers to contribute to brand narratives. These developments suggest a paradigm shift from linear content delivery to participatory, adaptive ecosystems. In this light, generative AI becomes a catalyst for innovation not only in communication but also in product development, service personalization, and community engagement.

Despite its promise, the widespread use of generative AI raises ethical and governance challenges that must be addressed. Issues of content authenticity, algorithmic bias, misinformation, and intellectual property are at the forefront of public and academic debate. Recent scholarship emphasizes the importance of AI ethics frameworks that are proactive, context-specific, and responsive to stakeholder concerns (Lescrauwaet et al., 2022; Mittelstadt, 2019). Marketing leaders must therefore engage not only with technological and economic considerations but also with broader social responsibilities, ensuring that generative AI supports inclusive, respectful, and equitable communication practices.

In light of these dynamics, several directions for future research can be identified. First, there is a need for empirical studies that examine the organizational conditions under which generative AI adoption leads to positive performance outcomes. These studies should consider both short-term efficiency gains and long-term brand equity effects, as well as potential trade-offs in creativity, consumer perception, and organizational control. Second, future research should explore the co-evolution of human and machine creativity, investigating how marketing professionals adapt their roles, workflows, and judgments in response to AI augmentation. This line of inquiry aligns with emerging interest in human-AI collaboration and hybrid intelligence models (Peeters et al., 2021; Xiong et al., 2025). Third, cross-cultural research is warranted to understand how different markets and cultural contexts respond to AI-generated content, especially in terms of perceived authenticity, trust, and engagement. Fourth, further investigation is needed into the regulatory and ethical implications of generative AI in marketing, particularly as legislation around AI transparency, data usage, and consumer protection becomes more prominent. Finally, there is a significant opportunity to develop new conceptual models that bridge strategic marketing theory with AI systems design. Such models should integrate insights from information systems, organizational behavior, and ethics, enabling a more holistic understanding of how generative AI is reshaping the logic, structure, and value propositions of modern marketing.

4. A Taxonomy of Generative AI Applications in Marketing

Building upon the general taxonomy of AI in marketing proposed by De Mauro, Sestino and Bacconi (2022), we present a structured hierarchy to describe generative AI applications in marketing. Such a taxonomy can be

organized into with two primary domains: consumer-facing and business-facing. Each domain encompasses two key categories reflecting distinct marketing objectives, yielding four principal categories in total. This taxonomy, illustrated in Figure 1, provides a top-level split based on the target stakeholder (consumers vs. the business) and a second-level division into conceptual groupings, with each grouping containing specific generative AI use cases. The aim is to delineate how generative AI tools serve different facets of marketing, from enhancing customer experiences to optimizing internal decision processes. Below, each category is described in detail along with its constituent applications, highlighting the roles of generative AI in each.

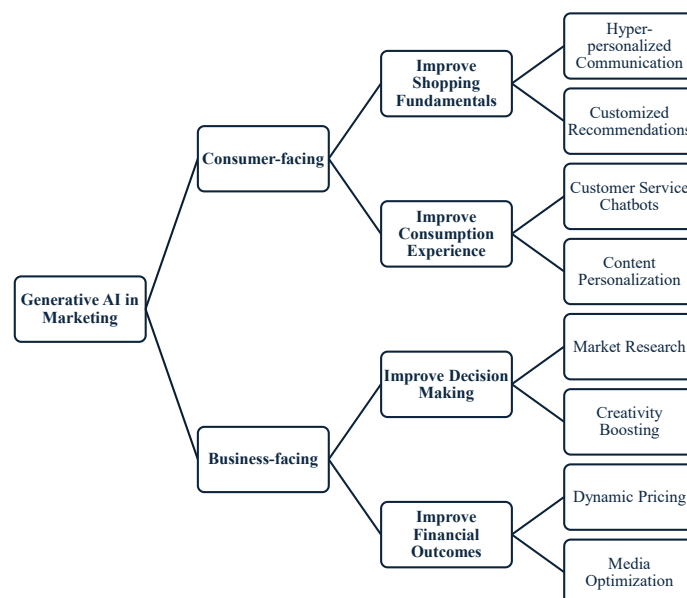


Figure 1. The proposed taxonomy of Generative AI applications in marketing.

4.1 Improve Shopping Fundamentals

This category involves generative AI augmenting the core shopping and purchase experience through personalization and tailored content delivery. Generative models enable hyper-personalized marketing communications by producing individual-level offers, product descriptions, and advertisements derived from customer data and preferences. For example, large language models can automatically generate customized email campaigns or product recommendations, allowing firms to engage each consumer with uniquely relevant messaging at scale (Das et al., 2024). Such AI-driven personalization of promotions and recommendations aims to increase customer satisfaction and conversion rates by aligning marketing stimuli with each shopper’s needs and context. Generative AI thus serves as a catalyst for one-to-one marketing, dynamically adapting content to enhance the effectiveness of digital merchandising and outreach efforts (Sengar et al., 2024).

4.2 Improve Consumption Experience

Generative AI also plays a critical role in enriching the customer’s experience during product usage and service consumption. Applications in this category focus on post-purchase engagement, support, and relationship management. A prominent example is the use of generative AI in customer service chatbots and virtual assistants that interact with consumers in natural language, providing real-time support and personalized guidance (Kumar et al., 2025). By leveraging advanced language models, these AI agents can resolve inquiries, offer usage tips, or even cross-sell complementary products during the consumption phase, all while mimicking human-like conversational style to heighten user engagement. Generative AI can further enable interactive experiences such as AI-driven content personalization within products (for instance, dynamically adjusting in-app content or

entertainment based on user behavior). In sum, by intelligently generating responses, content, or recommendations in context, generative systems enhance the consumption experience—deepening satisfaction and strengthening the consumer–brand relationship through ongoing, tailored value delivery.

4.3 Improve Decision Making

On the business-facing side, generative AI supports marketing managers and analysts in making more informed and creative decisions. This category includes applications that transform how firms generate insights and devise strategy. Generative AI can efficiently analyze large volumes of unstructured data (such as social media posts or customer reviews) and produce succinct narratives or reports, thereby augmenting market research and trend analysis efforts (Herhausen et al., 2024). For example, language models may summarize consumer sentiments or competitor activities into actionable intelligence for marketing planners. In addition, generative systems can aid in ideation processes: tools like generative adversarial networks and transformer-based models are capable of generating new product concepts, campaign slogans, or visual designs, functioning as a creative partner to human teams (Hartmann et al., 2024), boosting creative activities. By providing data-driven suggestions and novel content, generative AI expands the solution space for marketing problems and accelerates decision cycles. The result is a form of hybrid intelligence in organizational decision-making, where human judgment is amplified by AI-generated insights and options (Sengar et al., 2024). This generative decision support helps firms to anticipate market shifts, personalize strategies to consumer segments, and make more agile, evidence-based marketing decisions.

4.4 Improve Financial Outcomes

The final category involves generative AI contributing to financially oriented marketing tasks—optimizing pricing, budget allocation, and return on investment. In the realm of dynamic pricing, AI techniques (often based on machine learning and automation) adjust prices or promotions in real time according to demand, inventory, and customer segments, thereby maximizing revenue or market share (De Mauro et al., 2022). While dynamic pricing traditionally relies on predictive analytics rather than content generation, generative AI can supplement these systems by simulating market scenarios or generating synthetic data to test pricing strategies. More directly, generative AI is making a significant impact in marketing communications optimization, sometimes referred to as “media optimization” (De Mauro et al., 2022). Here, generative models create a multitude of advertising creatives and marketing content variations that can be deployed and refined on the fly. For instance, generative AI can automatically produce multiple versions of an ad copy or banner image tailored to different audience micro-segments, which are then A/B tested and optimized for performance (Baek, 2023). This automation of content generation dramatically increases the scope of experimentation in digital advertising, leading to more efficient allocation of media spend and higher conversion rates. Early studies indicate that AI-generated visuals and text can engage customers effectively, in some cases even rivaling human-crafted content (Hartmann et al., 2024). By integrating generative content creation with real-time analytics, marketers can continually refine campaign elements—selecting creatives and messages that yield the best financial outcomes. In summary, generative AI in this category enhances the financial efficiency of marketing initiatives by both improving top-line growth (through better-targeted, more persuasive content) and reducing costs via automation of creative and analytical processes (Das et al., 2024).

5. Conclusions and Future Research

The rise of generative AI is transforming marketing strategies and operations, creating new opportunities and challenges. A key trend is the move toward hyper-personalization at scale, where generative AI enables real-time, individualized customer interactions. This shift toward a “segment of one” requires careful management to maintain consumer trust and avoid privacy concerns. Research highlights the tension between relevance and consumer fears of manipulation and data misuse (Benlian et al., 2022; Selvakumar, 2025; Soni, 2024). Marketers must balance AI-driven personalization with transparency, consent, and fairness.

Generative AI also reshapes organizational capabilities. It demands not only new technologies but also new skills, leadership, and supportive cultures, in line with broader digital transformation literature (Vial, 2021; Dwivedi et al., 2021; De Mauro & Pacifico, 2024). Sustainable advantage comes from embedding generative AI within a clear strategy and robust governance.

Furthermore, generative AI is expanding marketing creativity. Brands are experimenting with AI-powered storytelling, interactive experiences, and co-creation platforms that invite consumer participation. These approaches signal a shift from one-way messaging to AI-augmented, adaptive dialogues. While promising for customer engagement, success depends on ensuring these experiences align with authentic brand values.

Finally, ethical and governance challenges are central. As AI-generated content grows, concerns about authenticity, bias, misinformation, and intellectual property intensify. Trustworthy marketing requires clear disclosure of AI use and mechanisms to monitor, audit, and mitigate risks. Recent studies call for strong, context-specific AI ethics frameworks to guide this evolution (Lescrauwaet et al., 2022; Mittelstadt, 2019). Marketing leaders must proactively address these responsibilities and ensure compliance with emerging AI regulations.

In light of these dynamics, several avenues for future research stand out. First, there is a need for empirical studies that examine the organizational and market conditions under which generative AI adoption leads to positive outcomes. While early evidence points to efficiency gains and enhanced creativity, systematic research should assess both short-term performance metrics (like campaign ROI or customer engagement lift) and long-term effects on brand equity, customer trust, and loyalty. Such studies can also explore potential trade-offs—for instance, whether an over-reliance on AI-generated content might impact consumer perceptions of authenticity or creativity. Second, further research should explore the co-evolution of human and AI creativity in marketing teams. As generative AI systems take on greater creative and analytical tasks, understanding how human marketers adjust their roles, decision-making processes, and skill development is crucial (Peeters et al., 2021; Xiong et al., 2025). This line of inquiry into human–AI collaboration and augmented creativity will inform how organizations can design workflows and training programs to maximize the complementary strengths of AI and human insight. Collectively, these research directions will help scholars and practitioners navigate the transformative impact of generative AI on marketing strategy and practice

References

Aggarwal, C. C. (2018). *Neural networks and deep learning*. Cham: Springer.

Akter, S., Hossain, M. A., Sajib, S., Sultana, S., Rahman, M., Vrontis, D., & McCarthy, G. (2023). A framework for AI-powered service innovation capability: Review and agenda for future research. *Technovation*, 125, 102768.

Amit, R., & Han, X. (2017). Value creation through novel resource configurations in a digitally enabled world. *Strategic Entrepreneurship Journal*, 11(3), 228–242.

Baek, T. H. (2023). Digital advertising in the age of generative AI. *Journal of Current Issues & Research in Advertising*, 44(3), 249–251.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610–623).

Benlian, A., Wiener, M., Cram, W. A., Krasnova, H., Maedche, A., Möhlmann, M., ... & Remus, U. (2022). Algorithmic management: bright and dark sides, practical implications, and research opportunities. *Business & Information Systems Engineering*, 64(6), 825–839.

Chen, A., Liu, L., & Zhu, T. (2024). Advancing the democratization of generative artificial intelligence in healthcare: a narrative review. *Journal of Hospital Management and Health Policy*, 8, 1–11.

Das, S., Dey, A., Pal, A., & Roy, N. (2015). Applications of artificial intelligence in machine learning: review and prospect. *International Journal of Computer Applications*, 115(9), 31–41.

Das, S., Rath, J. P., Patro, U. S., Panda, T., & Gopinath, G. (2024). Investigating generative AI innovative strategies for customer engagement in marketing automations in the digital era. *International Journal of Applied Science and Engineering*, 12(1), 47–57.

De Mauro, A., & Pacifico, M. (2024). *The Financial Times Guide to Data-Driven Transformation*. Pearson UK.

De Mauro, A., Sestino, A., & Bacconi, A. (2022). Machine learning and artificial intelligence use in marketing: a general taxonomy. *Italian Journal of Marketing*, 2022(4), 439–457.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... & Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, 101994.

El Sawy, O. A., Kræmmergaard, P., Amsinck, H., & Vinther, A. L. (2020). How LEGO built the foundations and enterprise capabilities for digital leadership. In *Strategic Information Management* (pp. 174–201). Routledge.

Feuerriegel, S., Hartmann, J., Janiesch, C., & Zschech, P. (2024). Generative AI: a primer on technology, use cases, and research opportunities. *Business & Information Systems Engineering*, 66(1), 111–126.

Forbes (2024). Generative AI for content creation: How marketers can use it. Retrieved March 9, 2025, from <https://www.forbes.com/councils/theyec/2023/08/17/generative-ai-for-content-creation-how-marketers-can-use-it>

Guercini, S. (2023). Marketing automation and the scope of marketers' heuristics. *Management Decision*, 61(13), 295–320.

Hartmann, J., Exner, Y., & Domdey, S. (2024). The power of generative marketing: Can generative AI create superhuman visual marketing content? *International Journal of Research in Marketing*. (Forthcoming).

Herhausen, D., Bernritter, S. F., Ngai, E. W., Kumar, A., & Delen, D. (2024). Machine learning in marketing: recent progress and future research directions. *Journal of Business Research*, 170, 114254.

Jackson, I., Ivanov, D., Dolgui, A., & Namdar, J. (2024). Generative artificial intelligence in supply chain and operations management: a capability-based framework for analysis and implementation. *International Journal of Production Research*, 62(17), 6120–6145.

Jo, A. (2023). The promise and peril of generative AI. *Nature*, 614(1), 214–216.

Kumar, A., Shankar, A., Behl, A., Chakraborty, D., & Gundala, R. R. (2025). Anthropomorphic generative AI chatbots for enhancing customer engagement, experience and recommendation. *Journal of Consumer Marketing*. (In press).

Lescrauwaet, L., Wagner, H., Yoon, C., & Shukla, S. (2022). Adaptive legal frameworks and economic dynamics in emerging technologies: navigating the intersection for responsible innovation. *Law and Economics*, 16(3), 202–220.

Liu, J., Kong, X., Xia, F., Bai, X., Wang, L., Qing, Q., & Lee, I. (2018). Artificial intelligence in the 21st century. *IEEE Access*, 6, 34403–34421.

McCarthy, J. (1987). Generality in artificial intelligence. *Communications of the ACM*, 30(12), 1030–1035.

Mittelstadt, B. (2019). Principles alone cannot guarantee ethical AI. *Nature Machine Intelligence*, 1(11), 501–507.

Oke, S. A. (2008). A literature review on artificial intelligence. *International Journal of Information and Management Sciences*, 19(4), 535–570.

Ooi, K. B., Tan, G. W. H., Al-Emran, M., Al-Sharafi, M. A., Capatina, A., Chakraborty, A., & Wong, L. W. (2025). The potential of generative artificial intelligence across disciplines: perspectives and future directions. *Journal of Computer Information Systems*, 65(1), 76–107.

OpenAI (2022). Introducing ChatGPT. Retrieved December 1, 2022, from <https://openai.com/blog/chatgpt>

Peeters, M. M., Van Diggelen, J., Van Den Bosch, K., Bronkhorst, A., Neerincx, M. A., Schraagen, J. M., &

Raaijmakers, S. (2021). Hybrid collective intelligence in a human–AI society. *AI & Society*, 36, 217–238.

Rajaram, K., & Tinguely, P. N. (2024). Generative artificial intelligence in small and medium enterprises: navigating its promises and challenges. *Business Horizons*, 67(5), 629–648.

Ramesh, J. V. N., Singh, S. S., Vora, A., Vikram, G., Gorkhe, M., & Raj, I. I. (2024). Harnessing generative AI for business growth and opportunities. In *2024 International Conference on Artificial Intelligence and Quantum Computation-Based Sensor Application (ICAIQSA)* (pp. 1–6). IEEE.

Rojas, R. V. B. (2024). Artificial intelligence: genesis, development, and future. In *Revolutionizing Communication* (pp. 1–15). CRC Press.

Ronge, R., Maier, M., & Rathgeber, B. (2025). Towards a definition of generative artificial intelligence. *Philosophy & Technology*, 38(1), 31.

Schmidhuber, J. (2020). Deep learning: our miraculous year 1990–1991. *arXiv preprint arXiv:2005.05744*.

Selvakumar, P., Sudheer, P., & Kannan, N. (2025). Balancing innovation and privacy: understanding AI in the digital world. In *Digital Citizenship and the Future of AI Engagement, Ethics, and Privacy* (pp. 279–304). IGI Global.

Sengar, S. S., Hasan, A. B., Kumar, S., & Carroll, F. (2024). Generative artificial intelligence: a systematic review and its applications. *Multimedia Tools and Applications*, 83(3), 22089–22128.

Sestino, A., & De Mauro, A. (2022). Leveraging artificial intelligence in business: implications, applications and methods. *Technology Analysis & Strategic Management*, 34(1), 16–29.

Soni, V. (2024). AI and the personalization–privacy paradox: balancing customized marketing with consumer data protection. *International Journal of Computer Trends and Technology*, 72(9), 24–31.

Statista (2025). Generative AI – worldwide. Retrieved March 9, 2025, from <https://www.statista.com/outlook/tmo/artificial-intelligence/generative-ai/worldwide>

Teece, D. J. (2023). The evolution of the dynamic capabilities framework. In *Artificiality and Sustainability in Entrepreneurship* (pp. 1–13).

Teece, D. J., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: risk, uncertainty, and strategy in the innovation economy. *California Management Review*, 58(4), 13–35.

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation*. Lexington Books.

Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: systematic review and future research direction. *International Journal of Information Management Data Insights*, 1(1), 100002.

Vial, G. (2021). Understanding digital transformation: a review and a research agenda. In *Managing Digital Transformation* (pp. 13–66).

Vlačić, B., Corbo, L., e Silva, S. C., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: a review and research agenda. *Journal of Business Research*, 128, 187–203.

Volberda, H. W., & Karali, E. (2015). Reframing the compositional capability: a resource-based view on “a composition-based view of firm growth.” *Management and Organization Review*, 11(3), 419–426.

Xiong, F., Yu, X., Leong, H. W., & Ma, A. (2025). AI-driven research ecosystem: unifying human–AI collaboration models and new research thinking paradigms. *Journal of Educational Technology and Innovation*, 7(1), 15–28.

Yau, K. L. A., Saad, N. M., & Chong, Y. W. (2021). Artificial intelligence marketing (AIM) for enhancing customer relationships. *Applied Sciences*, 11(18), 8562.