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AI IN MARKETING EDUCATION: CAPABILITIES REQUIRED OF MARKETERS TODAY

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AI IN MARKETING EDUCATION

Capabilities required of marketers today

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ABSTRACT:

This research explores the transformative impact of Artificial Intelligence (AI) on marketing education. The study emphasizes the necessity for marketing students to acquire skills that enable them to effectively utilize AI throughout the marketing management process. By synthesizing insights from theoretical models and empirical research, the paper identifies key competencies required for future marketers, including analytical, technological, and strategic efficiency capabilities. The authors argue that integrating AI into marketing education is essential for preparing students to navigate the rapidly evolving landscape of digital marketing. The paper concludes with recommendations for educators on how to incorporate AI tools and concepts into their curricula to enhance students' readiness for AI-driven marketing roles.

KEYWORDS:

AI in Marketing, Marketing Education, Generative AI in Marketing

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Introduction

Artificial Intelligence (AI) has profoundly transformed marketing, offering tools and methodologies that improve decision-making, enhance operational efficiency, and provide actionable insights. Employers see digital skills as the most important ones for entry level positions, which will even become more inevitable for future hiring (Bhatti et al., 2023).

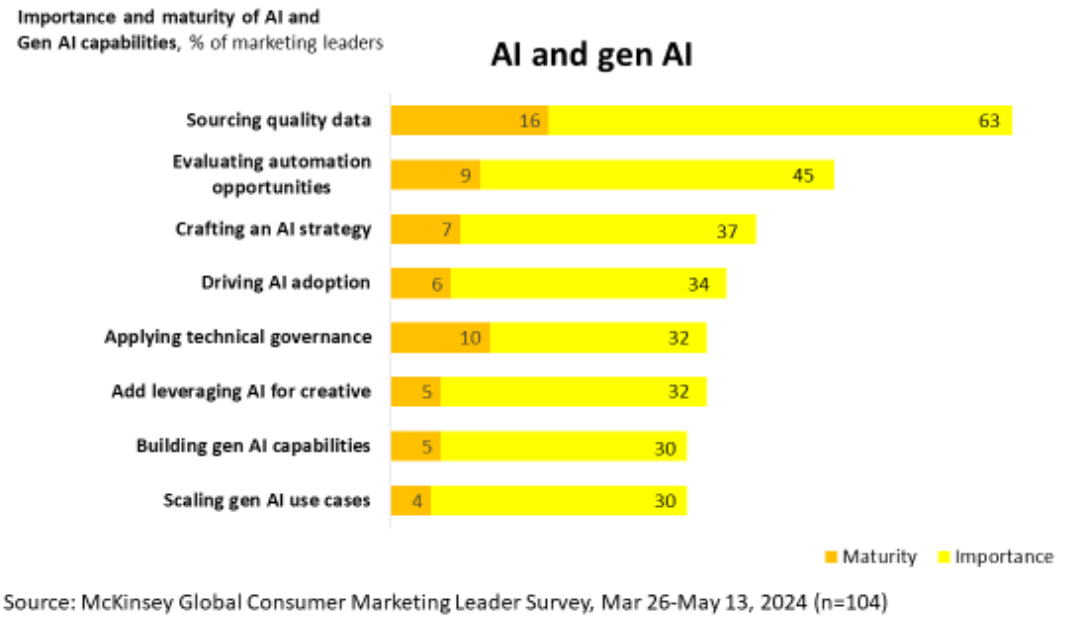
The study "Künstliche Intelligenz – die Zukunft des Marketings 2023" among 170 marketing managers in Germany conducted by SHR Berlin University of Applied Science (2023) revealed that around 86% of marketers are convinced that the importance of AI for marketing will continue to increase in the future (Bünte, 2023b, p. 20). They predict a more intensive use along the entire marketing management process (consumer insights, strategy, marketing mix and performance management). 77% of marketing managers who already work with AI in marketing state that AI is at least one factor for success and that it will become even more important in the future (Bünte, 2023b, p. 44). As a result, the study shows that the human factor is crucial in order to exploit the full potential: more knowledge, more training and more experience can help to use AI for corporate success (Bünte, 2023b, p. 5).

In its study "Connecting for growth: A makeover for your marketing operating model", the management consulting firm McKinsey outlines that marketing capabilities in companies are becoming increasingly demanding for Chief Marketing Officers (CMOs) (Cvetanoski et al., 2024). In addition to responsibility for traditional marketing (e.g. brand, creation and consumer insights) and digital channels (e.g. performance marketing, social media marketing), marketing managers will increasingly be faced with new tasks in the future, particularly in relation to (analytical) AI and generative AI (Gen AI) (Cvetanoski et al., 2024, p. 3). At the same time, there is a huge gap identified between the communicated importance of AI skills and those available in the companies yet (Figure 1).

But what do these developments exactly mean for educators in higher education? As stated by Khandelwal et al. (2024, p. 359) AI will have a big effect on the job market, particularly on marketing jobs. It is eminent that for educators, these advancements necessitate equipping students with the skills and knowledge to utilise AI effectively across various facets of marketing as this is still one of the major challenges across many industries (Babashahi et al., 2024).

This paper aims to address the question of which skills students need to develop to succeed in AI-driven marketing roles based on the latest implementations of AI in different marketing areas along the marketing management process.

Figure 1: Marketing leaders believe it's important to use analytical and generative AI to drive growth



Source: Cvetanoski et al., 2024, p. 6

To identify the competencies needed for marketing management students, it's crucial to understand AI applications in marketing as well as the current state of marketing education and derive the required skills from these insights.

Methodology

This study adopts a narrative literature review methodology to collect, synthesize, and critically analyze existing research, thereby advancing the understanding of the research domain. A literature review is a structured inquiry that gathers and integrates prior research (Theile & Beall, 2024a).

Narrative literature review, specifically, is defined as an analysis conducted on a specific topic, based on the author's ability to evaluate existing research concerning appropriateness, quality, methodology, results, and interpretation of findings (Theile & Beall, 2024b, p. 79).This approach further allows the researcher to include their individual perspective on both the topic and the existing research (Jacobsen, 2020).

In their research Kumar et al. emphasize that narrative reviews not only enhance comprehension but also serve as a foundation for outlining future research directions (Kumar et al., 2021). Research suggests that narrative literature reviews are particularly suitable for examining complex and rapidly evolving fields, such as AI in marketing, due to their comprehensive and flexible nature (Bekkestad & Solvang, 2023). They enable the synthesis of diverse sources, including academic journals, industry reports, and emerging research, which is crucial for capturing the multifaceted applications of AI across various marketing functions (Wong, 2013, p. 5). Additionally, narrative reviews accommodate interdisciplinary perspectives and emerging topics that lack extensive empirical research, essential for understanding dynamic domains like AI technologies in marketing (Sukhera, 2022).

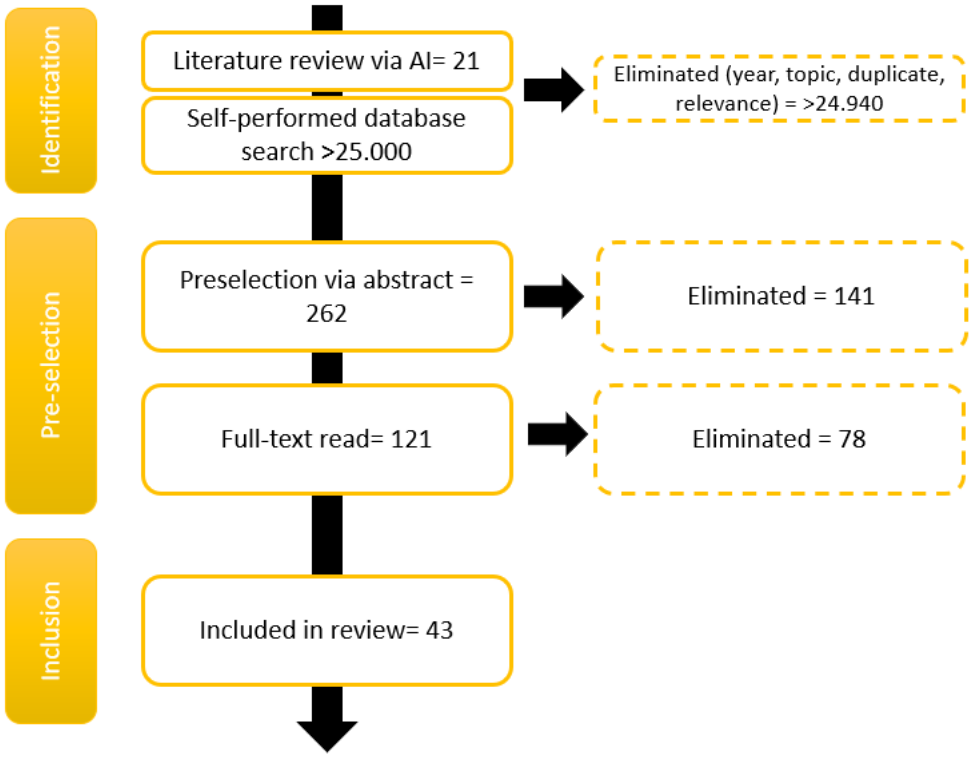
By employing a narrative literature review, researchers can go beyond mere description, offering interpretive insights and contextual understanding. This methodology facilitates a holistic examination of AI's ethical implications and potential benefits in marketing (Bekkestad & Solvang, 2023). The flexibility of narrative literature reviews is valuable for addressing complex research questions and integrating insights from various disciplines, such as the intersection of AI, marketing, and business strategy and synthesize the existing knowledge into new concepts (Paré & Kitsiou, 2017).

To ensure a more focused and in-depth discussion in this paper, we have opted not to address all references but instead concentrate on those most relevant to our specific research questions. This approach aims to strike a balance between depth and breadth, providing detailed insights into key themes and trends while maintaining a representative overview of broader literature.

RESEARCH STRATEGY

This study employs a two-step methodology for conducting a comprehensive review of existing literature on the application of AI in marketing. The dual approach integrates the use of AI-driven chatbots for exploratory research with a Boolean search for systematic refinement and validation.

Figure 2: Research strategy narrative literature review



Step 1: Search via AI-based Chatbots

The used AI applications scan and select potential sources based on pre-defined criteria, such as relevance to key themes in AI and marketing, citation impact, and topic alignment. ChatGPT4.o, Perplexity, Gemini, CoPilot and DeepSeek were used as AI tools. The initial prompt was "*You are a professor at a university, writing a paper on AI in marketing education. Please state the most important*

sources, publications and other research. It must be peer reviewed and not older than from 2021." Long dialogs with the Chatbots were conducted based on the AI's answers until some relevant sources were found.

All prompts that were employed in this research were following the CLEAR prompting paradigm:

The CLEAR prompting paradigm stands for **Concise, Logical, Explicit, Adaptive, and Reflective**, and it is designed to optimize interactions with AI models (Australian Catholic University, 2025):

- **Concise**: Prompts should use only essential words to avoid unnecessary complexity and ambiguity.
- **Logical**: Prompts must be structured in a clear, intentional order to help the AI understand relationships and context.
- **Explicit**: Instructions should be precise and detailed to guide the AI toward generating accurate and relevant outputs.
- **Adaptive**: Prompts should evolve iteratively based on feedback from the AI's responses to refine results.
- **Reflective**: Users should critically evaluate outputs to identify areas for improvement and adjust prompts accordingly

Unfortunately, the coverage was very low, Perplexity and Copilot themselves pointed out to search for journal articles in university libraries. ChatGPT listed articles on "AI in marketing", which, after further inquiries, were assessed as non-existent, other articles could not be found in any dataset.

To ensure the reliability and validity of the AI-selected publications, a manual validation step is subsequently conducted using established research databases, such as EBSCO and Google Scholar. This dual-stage process, combining AI-driven automation with expert human oversight, enhances the robustness and transparency of the review by minimizing biases and improving the precision of the final dataset (Ge et al., 2024).

Step 2: Boolean search (EBSOHOST, Google Scholar, Springer) and search engine (Google)

As the use of the AI applications did not yield any more classifying results, the researchers initiated the second step of the research strategy, the narrative literature review.

To generate the body of literature for this review, the researchers conducted a conventional database search. A Boolean search was employed using EBSCOHOST, Google Scholar and Springer. The following search terms were used:

- "AI in marketing"
- "AI in marketing strategy" OR "AI in marketing process" OR "AI in marketing research"
- in German "KI im Marketing", "KI im Marketingprozess", "KI im strategischen Marketing", "KI in der Marketingforschung", "KI in der Marketingkonzeption"

To focus on contemporary academic literature, the search results were restricted to journal articles and books published in English and German between 2019 and 2024. The search was carried out between October 2024 and February 2025 and yielded 262 unique results. Consideration was exclusively given to scientific publications that illustrate the holistic marketing process in general. Both researchers

reviewed the results, excluding manuscripts deemed unsuitable. The screening process resulted in a final selection of 121 relevant manuscripts for review, out of which 43 were the most relevant to include in this research. In addition, the separate search of both authors leads to the same relevant sources, so that the intercoder reliability is given (Lombard et al., 2010).

Finally, two theoretical frameworks (Huang & Rust, 2021; Kumar et al., 2024) were identified as the basis for this research. Additional literature has been employed to verify the practical use of AI in marketing such as stated in the theoretical concepts.

Table 1 provides an overview of the scientific publications, and their AI fields included in the narrative literature review.

Table 1: AI in Marketing

Publication	AI in Marketing (operations)	Ethics in AI	AI Social Media	Customer Behaviour / Consumer Experience through AI
Aljabri et al. (2023)	x	x		
Andezion (2024)	x	x		x
Behera et al. (2024)		x		x
Bünte (2023a)	x			
Chang & Fan (2023)	x			
Chen et al. (2021)	x			
Cutler & Culotta (2019)	x		x	
Dahm & Vogler (2024)	x			x
Davenport (2020)	x			
Dwivedi et. Al. (2023)	x			
Euch & Said (2024)	x			
Ferrer et al. (2021)		x		
Fink (2020)	x			x
Grewal et al. (2024)	x			x
Harwardt & Köhler (2023)				x
Hicham et al. (2023)	x			x
Jatmika et al. (2024)	x			
Khandelwal et al. (2024)	x	x		x
Kreutzer (2023)	x	x		
Labib (2024)	x	x		
Lark & Bonfrer (2022)	x			x

Liu-Thompkins et. al. (2022)	x			
Mariani et. al (2022)	x			
McGrow (2019)		x		
Moldt et al. (2024)		x		
Olan et al. (2021)	x			x
Perakakis et al. (2019)	x			x
Sabharwal et al. (2022)	x			
Scheier & Held (2024)	x			
Şenyapar (2024)	x			x
Seiler et al. (2019)	x			x
Stahl & Wright (2018)		x		
Stone et al. (2020)	x			
Trivedi et. al. (2022)	x			
Wecke (2024)	x			
Wirtz et al. (2022)	x	x		
Zewe (2022)		x		
Ziakis & Vlachopoulou (2023)	x		x	
Zweigle (2024)	x	x		

As can be seen in Table 1: AI in Marketing, the publications that were analysed were mostly concerned with the use of AI in marketing and its operations, the use of AI in social media (marketing), ethical considerations in AI and customer behaviour respective customer experience through AI.

AI in marketing – conceptual and theoretical frameworks

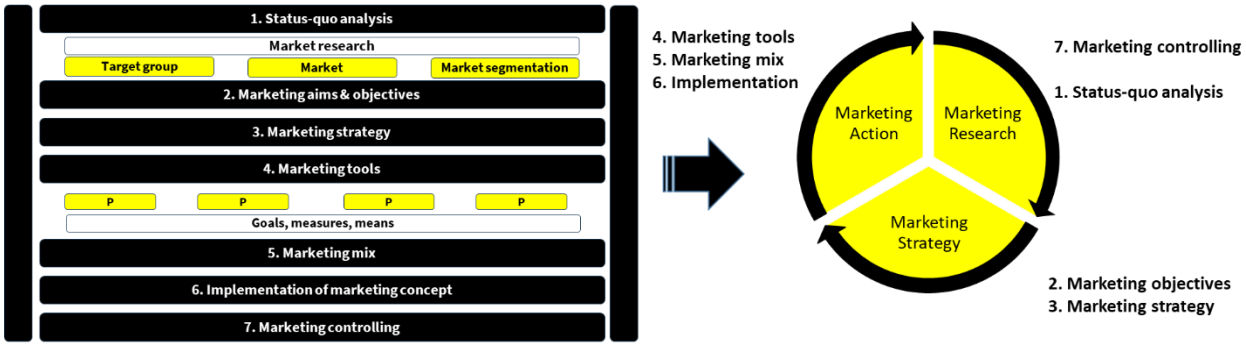
TRADITIONAL STRATEGIC FRAMEWORKS IN MARKETING EDUCATION

Marketing as a management philosophy focuses on meeting customer needs (Becker, 2019, p. 3). The marketing concept should guide companies and coordinate market- and customer-related activities. This practical orientation makes it valuable for marketing theory, as detailed in Becker's book “Marketing-Konzeption” (2019).

Students tackle marketing problems through a problem-solving process. They simulate the entire marketing process, from analysing the initial situation to developing and controlling marketing strategies and measures.

The marketing management process typically taught at universities can be shown in seven steps, as illustrated in Figure 3.

Figure 3: Marketing management cycle including the seven steps of the marketing management process



Source: Adopted from Thommen et al. (2017) & Huang & Rust (2021)

This marketing management process can be interpreted as a cycle over time, because marketing controlling represents the analysis of the initial situation for future marketing. Based on Huang & Rust (2021), the marketing management process shown in Figure 3 (left) can also be represented as a cycle (right).

In the context of marketing education, there arises a pertinent question regarding the extent to which AI will be implemented by corporations within the marketing management process (Becker, 2019; Thommen et al., 2017), particularly in relation to the three-stage strategic marketing planning cycle (Huang & Rust, 2021, p. 32).

IMPLICATIONS OF AI ON MARKETING CONCEPTION

To understand the impact of AI on marketing academia and teaching, it is essential to first discuss the general implications of AI in marketing. This research synthesizes insights from two often citied theoretical models to provide a clear understanding of how AI is currently utilized in marketing.

Model 1: The strategic framework for AI in marketing by Huang & Rust (2021)

This framework is grounded in Deming's (1986), plan-do-check-act cycle, which Huang and Rust later expanded to incorporate the role of strategy. This refinement resulted in a three-stage process for AI application in marketing: marketing research, marketing strategy, and marketing action. Additionally, the model introduces three tiers of marketing intelligence, as illustrated in Figure 4.

Every stage of the process can leverage marketing intelligences of three different kinds: mechanical AI, thinking AI and feeling AI. Whereas mechanical AI is designed for tasks that are repetitive, automatable and rather technical; thinking AI is for data processing and analysis, machine learning etc; and feeling AI is designed for interactions involving humans and/or for analysing human interactions and/or feelings (Huang & Rust, 2021, p. 31).

The marketing research stage benefits from leveraging mechanical AI for data collection, thinking AI for market analysis and feeling AI for understanding customers.

Marketing strategy leverages mechanical AI for segmentation, thinking AI for targeting and feeling AI for positioning and the marketing action phase can make use of mechanical AI for standardisation of tasks, thinking AI for personalization of e.g. communication and the feeling AI of relationalisation, e.g. chatbots tailoring communication based on reactions and emotional preferences (Huang & Rust, 2021, p. 34). It is important to note that Huang & Rust discuss the application of analytical AI within their framework. With the democratization of generative AI at the end of 2022, the application domains of mechanical, thinking, and feeling AI are expected to expand to include generative AI.

In their research Grewal et al (2024) indicated that Huang & Rust (2021) divided analytical AI into mechanical AI, thinking AI and feeling AI, which provides a useful framework for conceptually categorizing the different types of AI and their applications. In their comments, they noted that the output of Gen AI reflects all three areas and can be used to perform mechanical, thinking and sentient tasks. Nevertheless, they critically stated that it is important to check whether Huang & Rust's classification, which assumes that mechanical AI is the easiest for firms to implement and feeling AI the most difficult, is valid for Gen AI (Grewal et al., 2024).

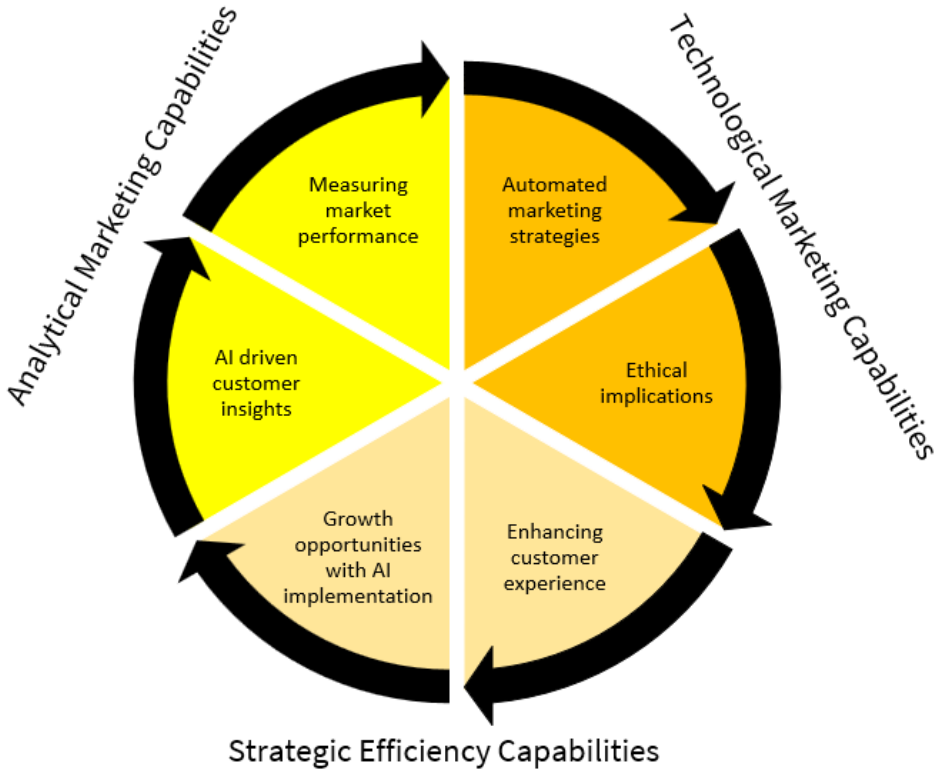
Figure 4: AI in strategic marketing decisions

Source: Adapted from Huang & Rust, 2021, p. 32

Model 2: Marketing areas where AI can bring about transformative effects by Kumar et al. (2024)

As can be seen in Figure 5 this model presents AI usage in marketing as a process divided into three stages: analytical marketing capabilities, technological marketing capabilities, and strategic efficiency capabilities. Each stage is further subdivided into two themes. Analytical marketing capabilities encompass AI-driven customer insights and the measurement of marketing performance. Technological marketing capabilities address automated marketing strategies and their ethical implications. Strategic efficiency capabilities focus on leveraging AI for growth opportunities and enhancing customer experience.

Figure 5: Marketing areas where AI can bring about transformative effects.



Source: Adopted from Kumar et al. (2024, p. 4)

DISCUSSION- Synthesis of two theoretical frameworks

Both conceptual frameworks cover roughly the same areas where an AI can be employed in marketing just from a different angle. Taking Huang and Rust as the basis and the “groundwork” on the topic, Kumar’s et al. three fields and six themes are blending into distinct fields of the initial framework.

Analytical marketing capabilities:

Beginning with analytical marketing capabilities, the theme of "AI-driven customer insights" focuses on enhancing CRM processes through data analysis and predictive analytics. This includes both the generation of actionable insights and the practical application of customer segmentation and personalization strategies (Kumar et al., 2024, p. 6; Mariani et al., 2022). When it comes to measuring marketing performance, Kumar (2024) states that the focus shifts to two key applications of AI: utilising AI-powered analytics tools to execute marketing initiatives and employing real-time performance tracking to facilitate agile, data-driven decision-making. Summarising, as can be seen in Table 2 that means that using AI in “Analytical marketing capabilities” as stated by Kumar has implications on marketing research, strategy as well as action in two of the three AI intelligences, excluding the feeling AI component.

Table 2: Synthesis Huang & Rust x Kumar - Analytical Marketing Capabilities

	Analytical Marketing Capabilities
Marketing Research	Enhancing CRM processes (**mechanical**)
	Generation of actionable insights (**thinking**)
	Real-time performance tracking and analysis (**mechanical, thinking**)
Marketing Strategy	AI helping in segmentation (**mechanical**)
	Data driven decision making (**thinking**) in segmentation, targeting and positioning
Marketing Action	Personalization strategies (**thinking**)
	AI-Tools to execute marketing initiatives (**mechanical**)
	Optimisation of marketing campaigns through ongoing analysis and adjustment based on real-time data (**mechanical**)

Source: Adapted from Huang & Rust (2021) and Kumar et al. (2024)

Technological marketing capabilities:

In the next stage, automated marketing strategies emphasize the transformative role of AI technologies in streamlining and enhancing processes such as customer service and ad placements, including key aspects of AI-driven marketing automation such as programmatic advertising, chatbots, and virtual assistants (Chen et al., 2021; Kumar et al., 2024) as can be seen in Table 3. Kumar et al. also identified one main field of concern in his review of existing literature which they included into their own framework: ethical implications, particularly in the realm of data privacy and security and the integrity and confidentiality of information (Stahl & Wright, 2018). Additionally, this theme addresses issues of algorithmic bias and discrimination, emphasizing how algorithms can inadvertently perpetuate prejudices, resulting in unfair or even harmful outcomes for certain groups (Ferrer et al., 2021; Kumar et al., 2024). Those implications concern all of the three areas: marketing research due to bias that may occur in data gathering as well as data security in its analysis and customer understanding, marketing strategy in its whole, due to potential bias in the initial data that the strategies are then based on (Zewe, 2022) as well as marketing action, as highly automated marketing campaigns may be prone to data security issues (Wirtz et al., 2022).

As the technological area mainly encompasses operational advantages through AI, the marketing research field is only included when discussing the ethical implications of AI driven data collection and market analysis, mainly regarding data protections infringements.

Table 3: Synthesis Huang & Rust x Kumar Technological Marketing Capabilities

	Technological Marketing Capabilities
Marketing Research	Ethical implications in performance tracking and analysis (**mechanical, thinking**)
	Use of AI technologies to automate data collection and processing in market research (**mechanical**)
Marketing Strategy	Ethical implications in automated segmentation (**mechanical**)
	Implementation of AI-supported tools for the personalization of marketing campaigns (**thinking**)
Marketing Action	Streamlining and enhancing processes (**mechanical**)
	Customer service: Use of chatbots and virtual assistants for direct customer interaction and automation of service requests (**thinking, feeling**)
	Programmatic advertising (**thinking**)

Source: Adapted from Huang & Rust (2021) and Kumar et al. (2024)

Strategic efficiency capabilities:

The third area shown in Table 4, strategic efficiency capabilities, encompasses also two key themes: enhancing customer experience and leveraging growth opportunities through AI implementation. The first theme highlights AI as a powerful tool not only for streamlining operations—typically associated with the mechanical AI aspects across all three stages in Huang & Rusts model —but also for enabling real-time customer interaction. As noted by Kumar (2024, p. 13), the analysis of individual behaviors and interactions in both physical and extended realities bridge the gap between the tangible and virtual worlds. This integration aligns seamlessly with Huang and Rust's framework, particularly within the stages of marketing strategy and marketing action. It incorporates both "thinking AI" processes, such as customer data analysis and standardized communication, and "feeling AI," which facilitates direct engagement in virtual environments and real-time customer support. These capabilities extend beyond chatbots to encompass problem-solving solutions powered by natural language processing (NLP), cognitive computing (CC), and machine learning (ML) (Behera et al., 2024). Therefore, as can be seen in Table 4, the theme "enhancing customer experience" can be found in all levels of marketing action (mechanical, thinking, feeling) and mechanical and thinking in the theme of strategic efficiency.

This paper does not elaborate further on the theme "growth opportunities with AI implementation", which addresses early adoption of AI and the resulting competitive advantages. While these dynamics are undeniably significant, they are not unique to marketing and instead pertain to broader business strategy and organizational competitiveness. As such, their implications extend beyond the marketing discipline and do not provide additional marketing-specific insights relevant to this research. Consequently, further exploration of this theme falls outside the scope of this study, which focuses exclusively on the distinct applications and impacts of AI within the marketing domain.

Table 4: Synthesis Huang & Rust x Kumar - Strategic Efficiency Capabilities

	Strategic Efficiency Capabilities
Marketing Research	Streamlined operations in research (**mechanical**)
	Customer data analysis (**thinking**)
Marketing Strategy	Streamlined operations in creation of marketing strategy to maximise efficiency ROI (**mechanical**)
Marketing Action	Streamlined operations in marketing actions to improve efficiency in marketing, e.g. automated workflows (**mechanical**)
	Real-time customer interaction (**thinking**)
	Analysis of individual behaviours (**thinking**)
	Direct engagement, e.g. using emotional AI (**feeling**)
	Standardized communication (**mechanical**)

Source: Adapted from Huang & Rust (2021) and Kumar et al. (2024)

After examining the theoretical frameworks underlying this research, the literature review analysed how these frameworks define their domains and assessed whether their practical application in existing scholarly work supports these frameworks in empirical contexts.

1. Enhancing Analytical Capabilities and Market Intelligence

AI's capability to analyse vast amounts of data with precision has redefined market intelligence and consumer behaviour analysis. Starting with the very basics, Dahm and Vogler (2024, p. 11) discuss the capability of AI in visualisation and organization of complex data. Naz et al. (2024) introduced an AI model that predicts user personalities through social media activity, significantly enhancing both research depth and strategic decision-making. This aligns with the findings of Cutler and Culotta (2019) who explored AI's potential in analysing social media data, underscoring its role in uncovering actionable insights for marketing research.

Building on this foundation, Perakakis et al. (2019) highlighted AI's ability to deliver "unparalleled insights" into customer behaviour by refining social media monitoring tools (Ziakis & Vlachopoulou, 2023, p. 16). Similarly, Davenport (2020) emphasized the use of predictive analytics to forecast sales and customer behaviours, leveraging data from platforms like social media.

Seiler (2019, p. 69) further discusses the use of AI in prospect and customer lead scorings, as it can predict when and if a customer is about to purchase – taking off a great amount of work that still nowadays is done manually.

Bünte states that AI enables the real-time analysis of customer usage data. As a result, marketers need to analyse this data daily to adjust their strategies based on the findings (2023a, p.253).

Not related to marketing alone but generally a basic requirement regardless of the field is the general understanding of how AI works (McGrow, 2019; Moldt et al., 2024).

2. Personalization and Customer Experience Optimization

A cornerstone of AI's application in marketing lies in its ability to drive personalization at scale. Jatmika et al. (2024, p. 1088) defined Artificial Intelligence Marketing (AIM) as the deployment of AI to automate data collection and analysis across the marketing mix. AIM facilitates highly personalized marketing, tailoring campaigns to individual customer preferences. Unlike traditional marketing, AIM encompasses the entire customer lifecycle, including acquisition, consumption, and disposal, delivering insights that enhance engagement and satisfaction. Fink (2020) also shows the added value of AI within the customer life cycle in the six steps discovery, explore, use, ask and engage (2023, p. 11-27). Andezion (2024) focuses on customer retention along the customer journey: generating attention (phase 1), purchase decision (phase 2), buying process (phase 3), AI-supported strategies to increase customer retention (phase 4) and application of AI techniques to strengthen customer loyalty (2024, p. 76-89).

Also Khandewal et al. (2024, p. 359) emphasized the use of marketing in the customer experience context, throughout the entire customer lifecycle: by looking at customer preferences, demographics and customer behaviour, online efforts can be optimized to reach the customer basis, whilst chatbots and virtual assistants are helpful in customer engagement, and predictive analytics helps business to understand how customers will act in the future. Further Seiler (2019) highlights the growing role of chatbots and virtual assistants but also states context creation as a helpful task in personalization and customer experience enhancement. An interesting example of this is dynamic content delivery on websites and landing pages based on personalized interests gathered beforehand (Seiler et al., 2019, p. 69) or dynamic pricing (Seiler et al., 2019, p. 70).

Harwardt and Köhler (2023, pp. 31–40) outline the application of AI throughout the customer journey: In the pre-purchase phase, AI enhances the customer experience through real-time personalized content generation and AI-based media planning. During the purchase phase, pattern recognition identifies new customers, dynamic pricing aligns with customer expectations, and purchase advice is delivered by advanced bots. In the post-purchase phase, chatbots gather customer feedback and analyse it in real time.

Advantages of AI in marketing, sales and customer service are also described by Kreutzer (2023, pp. 229–345). They address the advantages of various technologies ranging from basic chatbots to digital assistants. Additionally, he explores the design elements of voice marketing and the incorporation of AI in the marketing mix, including AI-supported communication design, dynamic pricing, and AI-assisted product development.

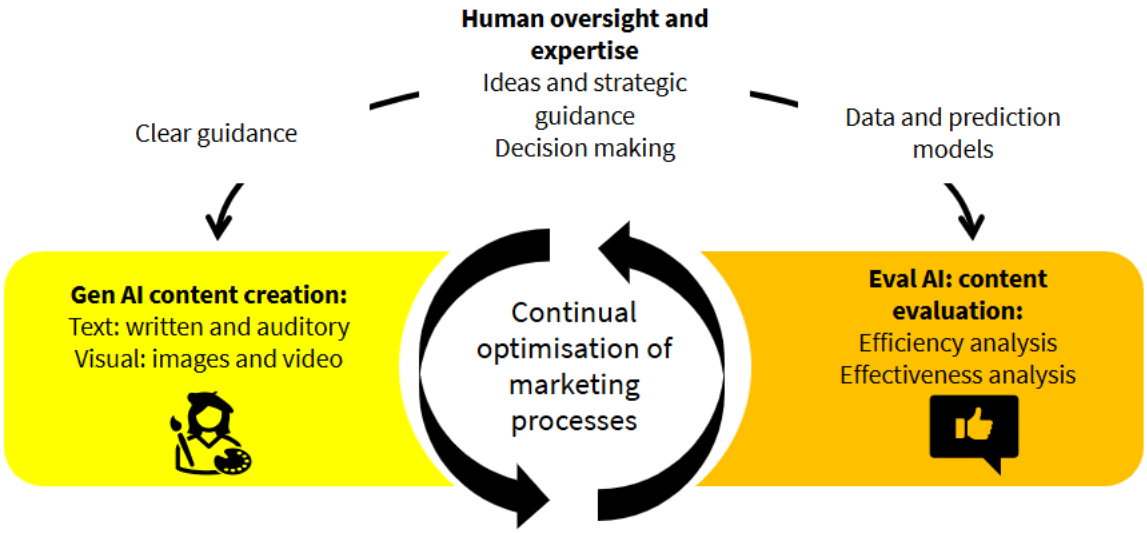
Further advancing this narrative, Liu-Thompkins et al. (2022) introduced the concept of "artificial empathy," bridging the gap between human and AI interactions by integrating the "feeling AI" framework (Huang & Rust, 2021) This evolution enhances customer interactions, creating deeper emotional connections.

The use of feeling AI is highlighted in Dahm & Vogler (2024, pp. 11–12) as they describe the creation of generative software simulation human behaviour – from making breakfast to reflecting their past actions.

The interaction between humans and machines is becoming increasingly seamless. Leveraging highly trained language models (LLMs), researchers are utilizing AI to generate survey data from unstructured data sources. This resulting synthetic data, referred to as "silicon sample," can partially substitute for interviews conducted by human respondents (Zweigle, 2024, p. 322).

In their publication “Double Impact: Harnessing Generative and Evaluative AIs for Effective Marketing Decisions” Held & Scheier mirror the framework by stating that the process of successful marketing remains unchanged: target audience insights, differentiating strategy followed by a creative and brand-cohesive execution. But also adding that this process has been subject to human oversight, whereas now the interplay of generative and evaluative AI can be a decisive factor (Scheier & Held, 2024, p. 37 ff.) as can be seen in Figure 6.

Figure 6: The interplay of generative and evaluative AI



Source: Adapted from Held & Scheier (2024)

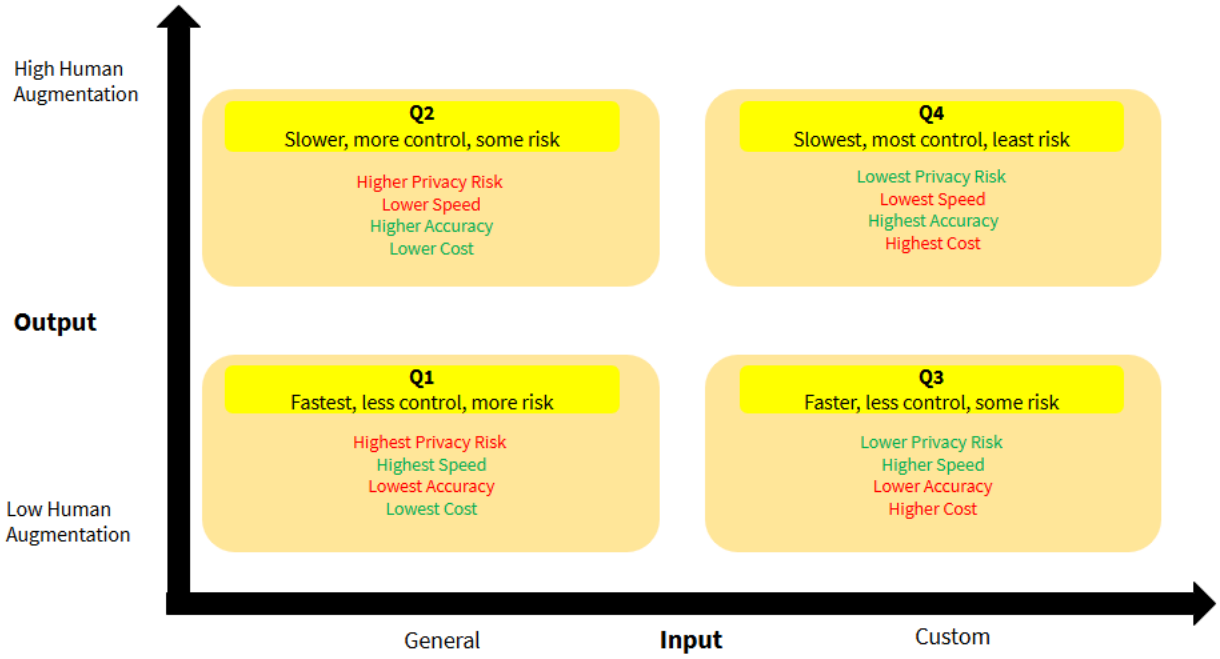
Scheier & Held (2024, p. 39) emphasize that while AI can enhance many aspects of marketing, the formulation of strategy remains an irreplaceable human element. Without proper guidelines and a clear starting point set by humans, AI risks generating generic and uncontrolled outputs. The publication also introduces a novel perspective on the interplay between generative and evaluative (respective analytical) AI. Generative AI may produce plausible yet inaccurate outputs, whereas evaluative AI ensures accuracy by analysing large datasets. For instance, in brand positioning, evaluative AI can refine the outputs of generative AI to align with a company’s brand policy (Scheier & Held, 2024, p. 39 ff).

A new approach to the interplay between generative and evaluative AI is stated further in their publication: whereas Gen AI can produce plausible output, evaluative AI is capable of delivering actually accurate of information by analysing large datasets. For example, in brand positioning evaluative AI can support generative AI in only delivering assets that resonate with the company’s brand policy (Scheier & Held, 2024, p. 39ff). In summary, integrating both generative and evaluative AI at every stage of the

marketing process aligns with the frameworks proposed by Huang and Rust, as well as Kumar et al., demonstrating how AI can be effectively utilised in marketing for research, strategy, and action. This approach not only offers a significant competitive advantage but also enhances value for customers.

Grewal et al. (2024) are convinced that analytical AI will continue to have a significant impact on all business functions, while at the same time showing that Gen AI will shape the future of marketing. Over the next ten years, Gen AI will have a huge impact on the way marketers interact and communicate with customers, help create and deliver marketing content (text, images and video) and influence the methods used to research and develop new products and services. To this end, they developed a four-quadrant framework (Figure 7) that divides the outcome into a continuum of low to high human augmentation (Y-axis) and the type of input (X-axis) into "general" (little internal data, e.g. for social media posts) and "custom" (company-specific information). This framework provides marketers with guidance for the selection and implementation of Gen AI tools.

Figure 7: Impact of AI on Marketing according to Grewal et al.



When applying the four-quadrant model to the foundational framework proposed by Huang & Rust (2021), it can be observed that lower levels of human augmentation correspond to the utilization of mechanical AI. Conversely, as one moves upward along the Y-axis, AI applications transition toward cognitive functions, eventually reaching high human augmentation, which Huang & Rust characterise as feeling AI.

3. Strategic Applications and Ethical Considerations

AI's strategic value extends to market segmentation and targeting, as evidenced by Chang and Fan (2023) who demonstrated how AI algorithms outperform human decision-making in identifying precise market segments. Similarly, Euch & Said (2024, p. 539), drawing on Huang & Rust's framework, identified AI's role in refining product positioning, customer engagement, and message alignment with consumer emotions. Following Hicham et al. (2023, p. 144) AI further can not only assess a customer lifetime value and decision support systems but is also capable of the production of value for customers overall. Also adding to strategic capabilities of AI in marketing.

In another strategic perspective, Sabharwal et al. (2022, p. 47) emphasised AI's role in crafting successful marketing strategies, while Stone et al. (Stone et al., 2020) underscored the need for further exploration of AI's implications in strategic decision-making. These applications are complemented by the technical focus of Dwivedi et al. (2023) on generative AI, such as ChatGPT, to enhance productivity in marketing workflows.

In their publication "Hybrid marketing is here to stay: preparing the marketing operation environment", Lark & Bonfrer (2022, p. 20 ff) analyse the use of AI in marketing by employing 4 areas of impact:

1. Intelligent Automation: AI is highlighted as a key component in intelligent automation, which is essential for enhancing hybrid marketing operations
2. Data and Analytics: The combination of AI, machine learning (ML), and natural language processing (NLP) allows marketers to view real-time data to understand both customers and employees better. This includes analysing customer conversations in real-time to gauge sentiment and intent
3. Predictive Analytics: AI, NLP, and ML are used to enrich predictive analytics by converting conversations into data, providing minute-by-minute signs of intent and experience
4. Customer Interaction: AI tools enable marketers to analyse customer conversations, alert managers to potential conflicts, suggest different scripts for operators, and gather impactful topics and themes from meetings

When transferring this in our existing theoretical frameworks, point 1. would cover technological capabilities in marketing action and research, point 2. and 3. would cover analytical and technological marketing capabilities in research, strategy and action, point and point 4 accounts for technological marketing capabilities and strategic efficiency capabilities in all three fields of research, strategy and action.

However, ethical concerns remain. Aljabri et al. (2023) highlighted issues like click fraud, emphasizing the need for regulatory frameworks to mitigate potential misuse. This underscores the dual-edged nature of AI in marketing, necessitating balanced approaches to harness its benefits responsibly. Further, Labib discusses the need of eliminating any kind of prejudices in algorithmic and data driven processes – demanding for openness, as well as diversity and responsibility in the AI in marketing practice (2024, p. 9). Khandelwal et al. (2024, p. 360) emphasized the academics burden to look more into and address potential ethical issues like bias, privacy as well as data security.

AI can be used in marketing in a very comprehensive and “world-changing” way. There are (almost) no technical limits to the potential areas of AI application. The limits should therefore be defined by ethical standards (Kreutzer & Sirrenberg, 2023, p. 68).

Marketers will increasingly focus on utilizing and managing AI tools. AI will serve as an assistant in marketing tasks. Human intelligence (HI) involves the marketer's responsibility to define the target, determine the processing method, distribute it to relevant tools, monitor the results, and take necessary countermeasures (Bünte 2023a, p.254). AI tools are expected to play a significant role in shaping the entire marketing process (Wecke, 2024, p. 24).

4. Innovations in Consumer Insights and Behaviour Modelling

AI's ability to model and predict consumer behaviour has been transformative. Trivedi et al. (2022, p. 45) explored machine learning's role in predicting purchase intentions, enhancing targeting and positioning strategies. Olan et al. (2021) provided a comprehensive analysis of AI's dynamic learning capabilities, highlighting its ability to derive insights from consumer knowledge sharing within digital communities, thereby improving customer experiences and attitudes.

These findings converge with those of Guerreiro et al. (2022) who investigated the acceptance of AI-powered smart speakers as advertising channels, further illustrating AI's adaptability in emerging marketing avenues. Also, Senyapar (2024, p. 4) highlights the enablement through AI to “move beyond simple segmentation” towards a deeper understanding of customer behaviour enabling deep personalisation.

Summary

AI has fundamentally transformed marketing by enabling precise data analysis, advanced consumer behaviour modelling, and highly personalised customer experiences. Its applications span the entire customer lifecycle, from acquisition to retention, and include innovations such as predictive analytics, chatbots, and dynamic content delivery. Generative AI further enhances creativity and efficiency, producing marketing assets while evaluative AI ensures accuracy and alignment with brand strategies. However, the transformative power of AI requires ethical safeguards and human oversight to address concerns like bias, privacy, and data security. By balancing innovation with responsibility, AI continues to redefine marketing practices, delivering both competitive advantages and greater value to customers.

The evolving integration of AI into marketing has revolutionised traditional practices, offering innovative frameworks and applications that enhance analysis, strategy and execution. This narrative literature review consolidates existing research to delineate AI’s pivotal role in advancing marketing methodologies and outcomes.

Figure 8: Results of literature review

	Analytical Marketing Capabilities	Technological Marketing Capabilities	Strategic Efficiency Capabilities
Marketing Research	Perakakis et al. (2019)	Lark & Bonfrer, A. (2022)	Lark & Bonfrer (2022)
		Harwardt & Köhler (2023)	
	Cutler & Culotta (2019)	Andezion (2024)	Hicham (2023)
	Villegas-Ch et al. (2022)	Jatmika et al. (2024)	Andezion (2024)
	Lark & Bonfrer (2022)	Scheier & Held (2024)	Fink (2023)
	Bünte (2023b)	Zweigle (2024)	Scheier & Held (2024)
	Fink (2023)		Jatmika et al. (2024)
	Jatmika et al. (2024)		
	Scheier & Held (2024)		
	Zweigle (2024)		
Marketing Strategy	Lark & Bonfrer (2022)	Seiler et al. (2019)	Seiler et al. (2019)
	Villegas-Ch et. Al. (2022)	Stone et al. (2020)	Olan et al. (2021)
	Bünte (2023b)	Lark & Bonfrer (2022)	Lark & Bonfrer (2022)
	Fink (2023)	Trivedi et. al. (2022)	Sabharwal et al. (2022)
	Harwardt & Köhler (2023)	Chang & Fan (2023)	Trivedi et. al. (2022)
	Andezion (2024)	Harwardt & Köhler (2023)	Andezion, A (2024)
	Euch & Said (2024)	Fink (2023)	Grewal et al. (2024)
	Jatmika et al. (2024)	Euch & Said (2024)	Jatmika et al. (2024)
	Scheier & Held (2024)	Grewal et al. (2024)	Scheier & Held (2024)
	Grewal et al. (2024)	Jatmika et al. (2024)	Şenyapar (2024)
	Naz et al. (2024)	Labib (2024)	Wecke (2024)
	Şenyapar (2024)	Scheier & Held (2024)	
	Khandelwal et al. (2024)		
Marketing Action	Lark & Bonfrer (2022)	Seiler et al. (2019)	Lark & Bonfrer (2022)
	Bünte C. (2023b)	Guerreiro et. al. (2022)	Fink (2023)
	Fink (2023)	Lark & Bonfrer (2022)	Andezion, A (2024)
	Andezion, A (2024)	Harwardt & Köhler (2023)	Grewal et al. (2024)
	Harwardt & Köhler (2023)	Liu-Thompkins et. al. (2022)	Jatmika et al. (2024)
	Euch & Said (2024)	Aljabri et al. (2023)	Scheier & Held (2024)
	Dahm & Vogler (2024)	Dwivedi et. al.(2023)	Dahm & Vogler (2024)
	Jatmika et al. (2024)	Fink (2023)	Wecke, B. (2024)
	Scheier & Held (2024)	Hicham (2023)	
		Euch & Said (2024)	

		Grewal et al. (2024)	
		Jatmika et al. (2024)	
		Khandelwal et al. (2024)	
		Scheier & Held (2024)	
		Zweigle (2024)	

Furthermore, the synthesis explores how AI enhances customer experience and leverages growth opportunities through real-time customer interaction and problem-solving solutions powered by natural language processing, cognitive computing, and machine learning. The discussion concludes by emphasizing the importance of integrating both generative and analytical AI at every stage of the marketing process to align with the frameworks proposed by Huang and Rust, as well as Kumar.

Broader implications and future directions

The reviewed studies collectively affirm AI's transformative impact on marketing across analytical, strategic, and operational dimensions. From enhancing customer engagement through personalization to streamlining marketing processes and refining decision-making frameworks, AI continues to shape the marketing landscape. However, its ethical implications, as well as the challenges of widespread adoption, call for ongoing research and dialogue to ensure sustainable integration into marketing practices.

Whilst it is important to analyse in which fields marketing can and will be enhanced by AI, it is important to mention that there are still some fields that AI is not able to cover (yet). One example is formulated by Scheier & Held (2024) and that is the formation of brand equity.

CONCLUSION & RECOMMENDATIONS

Following the analysis of the use of AI in marketing that was vastly supported by the literature review, the research yields in the following recommendations that can be given as to the needed skillset for future marketing managers:

Skillset	Analytical Marketing Capabilities	Technological Marketing Capabilities	Strategic Efficiency Capabilities
Marketing Research	Technical implementation of AI in CRM processes, "tech savviness" and general understanding of how AI works	Versatile management of potential biases in AI led marketing research	Streamlining ongoing processes and operations into AI led strategic creation
	Prompting for actionable insights	Vast knowledge on data protection and privacy policy	Analysis of which data needs to be analysed as well as output interpretation
	Implementation of AI based performance tracking	Data synthesis from unstructured sources	Consumer behaviour modelling & advanced segmentation
Marketing Strategy	Input of data and choice of AI to streamline segmentation along marketing strategies	Learning mechanisms to account for potential ethical biases	Digitalization of existing operations and processes
	Formulation of strategy based on output of data driven segmentation and positioning	Creative campaign and product ideation	Scenario planning for decision-making
Marketing & Action	Choice of right data for personalisation's strategies and personalised content creation	Digitalisation of current strategies so that they can be automated	Analyses of status-quo of processes in order to streamline
	Set-up of marketing initiatives to be executed	Teaching AI to fulfil certain standards for customer service	Creation of customer interaction database and know-how
		Target websites/ channels need to be digitised and set up to accommodate programmatic advertising	Analysis of outcome in order to implement in overall strategy
		AI driven customer interaction	Teaching the AI on direct engagement rules and fulfil company standards
		Workflow automation	Set-up library on standardised communication

In marketing education, students need to be trained to identify points in the marketing process where AI supports human actions or performs tasks independently. The interaction between AI and human intelligence is becoming increasingly important in this field. The classic marketing management process (see Figure 3: Marketing management cycle including the seven steps of the marketing management process) should be conceptually developed with students, explaining the use of AI at each step. This can be achieved through practical use of AI tools as part of the marketing concept and systematic application of real-world use cases. The integration of research, education, and practice is becoming crucial for modern marketing education at universities due to the rapid advancements in analytical and generative AI.

The objective of marketing education should be to equip students with the necessary skills to navigate the rapidly evolving landscape of marketing. This includes developing both analytical and generative AI competencies in relation to the following areas:

- AI-driven market and target group analysis,
- AI-assisted formulation of marketing concepts (objectives, strategy, and effective marketing activities),
- AI-supported execution of marketing activities (e.g., price optimization, product development, communication strategies, distribution enhancement) and
- AI-based marketing controlling.

The next generation of AI applications, the Gen AI agents, are already in the starting blocks and are currently dominating the discussion in the marketing and insights industry. A Gen AI agent is an application that attempts to achieve a goal by observing the means at its disposal and acting accordingly. They are autonomous and act independently of human intervention, especially if they are given appropriate goals to achieve. Agents can also act proactively to achieve their goals. Even in the absence of explicit instructions from humans, an agent can consider what it should do to achieve the end goal (Wiesinger et al., 2024, p. 5).

However, AI agents will not be able to carry out the entire marketing process from analysis (research) to strategy and action effectively and efficiently on their own. The current consensus is that AI absolutely requires human intelligence to ensure not only efficiency but also effectiveness. After all, humans define goals and provide examples or tools that the agent uses. The agent then takes over the planning, interaction with tools and independent execution, but humans remain responsible for monitoring and fine-tuning (Wiesinger et al., 2024). Teaching an understanding of this hybrid AI & HI approach to strategic marketing should be an essential task for university lecturers.

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