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Artificial Intelligence (AI): Revolutionizing Digital Marketing

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Abstract

Artificial intelligence (AI)-enabled digital marketing is revolutionizing the way organizations create content for campaigns, generate leads, reduce customer acquisition costs, manage customer experiences, market themselves to prospective employees, and convert their reachable consumer base via social media. Real-world examples of organizations who are using AI in digital marketing abound. For example, Red Balloon and Harley Davidson used AI to automate their digital advertising campaigns. However, we are early in the process of both the practical application of AI by firms broadly and by their marketing functions in particular. One could argue that we are even earlier in the research process of conceptualizing, theorizing, and researching the use and impact of AI. Importantly, as with most technologies of significant potential, the application of AI in marketing engenders not just practical considerations but ethical questions as well. The ability of AI to automate activities, that in the past people did, also raises the issue of whether marketing professionals will embrace AI as a means to free them from more mundane tasks to spend time on higher value activities, or will they view AI as a threat to their employment? Given the nascent nature of research on AI at this point, the full capabilities and limitations of AI in marketing are unknown. This special edition takes an important step in illuminating both what we know and what we yet need to research.

Keywords

artificial intelligence, digital marketing, AI in digital marketing, marketing, AI in marketing

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The Intelligence of Artificial Intelligence

Artificial intelligence (AI) is defined as a technology-enabled system for evaluating real-time service scenarios using data collected from digital and/or physical sources to provide personalized recommendations, alternatives, and solutions to customers' enquiries or problems, even very complex ones (Xu et al., 2020). As firms deploy AI in digital marketing to help their customers know more about products and service offerings, to more efficiently and effectively navigate among choices, those same AI-enabled tools can also help firms better understand how their customers perceive and engage with their product and service offerings (De Bruyn et al., 2020). This, in turn, has the potential to help providers elevate future offerings. Thus, AI has the potential for amplifying virtuous interaction cycles between providers and customers.

The deployment of AI in marketing activities can be broad or narrow. From a broad perspective, firms can deploy AI by seeking to have it perform any human cognitive task. This requires artificial super intelligence, where AI becomes self-aware and surpasses the capacity of human intelligence. This level of intelligence and application presents both intriguing prospects and disturbing risks (Narain et al., 2019). For example, AI might be able to create deepfake videos that catch the attention and influence the actions of customers more efficiently and effectively than traditionally produced commercials but leave customers believing that the videos are real when in fact they were artificially generated. While such advertisements might be effective, would they be ethical? In contrast, the application of AI could be constrained to narrow or tightly defined tasks (i.e., artificial narrow intelligence or ANI). Popular examples include DeepMind's AlphaGo, or IBM's DeepBlue (Wirth, 2018). Even constrained, AI in these domains can surpass the efficiency and often effectiveness of humans (Krafft et al., 2020).

Much of the broad or narrow potential of AI in marketing will be achieved via machine learning, where AI is put to work in either supervised environments (e.g., AI comprehends data points that are labeled or classified and comprehends patterns and/or similarities that give expected output results) or unsupervised environments (e.g., AI identifies patterns in data sets where data points are not labeled or classified; Ma & Sun, 2020). On the positive side, allowing AI to learn can provide significant marketing benefits to firms that employ the technology. For example, Red Balloon allowed unsupervised learning of their AI system, Albert, and saw a major decrease in customer acquisition costs, overall marketing spend, plus a major uplift in return on ad spend and overall marketing results (Huang & Rust, 2021). In contrast, Facebook allowed unsupervised learning, and its AI system created its own language (illegible to humans) and posted hate speech toward minorities (Wilkins, 2018). Similarly, just

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16 hours after being launched, Twitters' chatbot, Tay, started posting inflammatory comments, as well as drug-related tweets (Neff, 2016). Finally, Amazon created an AI-enabled recruiting tool to market the firm to prospective employees and recommend those who would best succeed at the company. As there were already gender biases in the Amazon hiring and promotion system, the AI tool soon learned those biases and started to discriminate against women candidates, especially those who graduated from all women colleges. The discrimination was so blatant that Amazon shut the tool down (Black & van Esch, 2020; van Esch and Black, 2019; van Esch et al., 2019).

The application of AI in marketing seems to be relevant across both B2B and B2C markets (Hanssens, 2020; Paschen et al., 2020). In both cases, to the extent that data and its analysis provides insights into customer preferences, perceptions, and actions, marketers can use AI to better predict customer needs, wants, and preferences and then to hyper-personalize value propositions. This has the potential to reduce margin sapping outcomes such as customer churn or shopping cart abandonment and increase margin enhancing outcomes such as higher customer loyalty or positive word-of-mouth (Cui et al., 2021; Libai et al., 2020; van Esch et al., 2021).

Although there is much yet to learn about the application of AI in marketing, there has been sufficient research and knowledge generated to motivate this special issue "*Artificial Intelligence (AI): Revolutionizing Digital Marketing*" in *Australasian Marketing Journal*. Consequently, in this special issue, we have bought together both conceptual and empirical research to elevate our understanding of AI in digital marketing to date, as well as guide future lines of inquiry.

Revolutionizing Digital Marketing

What is real?

The increase in transmission speed, capacity, and the drop in costs portends an increased richness in exposure for consumers to digital ads (Maeng et al., 2020). Enhanced visual fidelity, augmented viewing, and even artificial realities will likely enable advertising to be harder to distinguish from reality and to be more interactive. Moreover, customers' individual data will likely be collected quicker, which will enable real-time ads to be more personalized (Tong et al., 2020). For example, in the not too distant future, a shopping app may allow a store to pin-point so precisely where a customer is in the store that a personalized ad about a product that is directly in front of the customer can be displayed on a high-definition small screen with such richness as to make it nearly impossible for the customer to ignore it.

The increase capabilities of AI and the accompanying lower costs provide the needed context for deepfakes. In general, deepfakes (i.e., digital content and imagery created via machine learning) have been negatively portrayed in the media (Kietzmann et al., 2020). For example, a Belgian political party, Socialistische Partij Anders, created and posted a deepfake video of Donald Trump instructing Belgians to withdraw from the Paris climate agreement. The video generated so much reaction that the creators soon had to withdraw the video and publicize that it was not real—Trump had never made such statements. However, deepfakes can also be used for good (Whittaker et al., 2020). For example, the painter Salvador Dali has been bought back to life at the Dali Museum in St. Petersburg, Florida. The Dali deepfake tells unique stories about his life and his artwork and at the end of the experience, gives visitors the opportunity to take a selfie with the life-sized artist.

In the lead paper of this special issue, Whittaker et al. (2021) introduce deepfakes into the marketing literature and highlight the opportunities for benefit or deviance. The authors argue for balance and propose a typology, conceptual framework, and associated research agenda, to guide the future investigation of deepfakes within the marketing domain.

Reading between the lines

The digitalization of product information has meant that customers can access more product information than ever before (Verhoef et al., 2017). Today customers can easily access not just information on a given product but see side-by-side product comparisons. The onslaught of product information has caused customers to seek information not just about the product but about how other customers have experienced the product (i.e., customer reviews). Digitalization has made it easier and more convenient for customers to provide those reviews (Plotkina & Munzel, 2016). Although customers use product reviews to inform their own purchases, providers can use product reviews to gain insights into the experience of their customers (Steward et al., 2018).

The article titled "*Reading Between the Lines: Understanding Customer Experience with Disruptive Technology Through Online Reviews*" (Robertson et al., 2021) explores how customer experience plays an important role as an antecedent to brand engagement, brand adoption, and eventual brand loyalty as portrayed through emotional tone and word choice in online reviews. Specifically because COVID forced many people to interact virtually rather than in-person (Black, 2020), the authors examined how the customer experience was portrayed through emotional tone and word choice in online reviews for the video conference platform Zoom. The research used computerized text analysis of the emotional tone and word choice in customer reviews as a means of gaining greater insight into customer experience beyond the numerical ratings customers provided. The research found key differences in the emotionality expressed for low- and high-rated reviews. The results from this study suggested that online customer reviews with a high rating express a higher level of expertise and confidence than low-rated reviews. Given the potential dissemination and impact, digital marketers may be well advised to first and foremost respond to online reviews that are high in emotional tone.

Marketing the firm not just its products

In today's hyper-competitive environment, companies need to not only market their products and services to customers but themselves to prospective employees (Black & van Esch, 2021). The more companies compete on intangibles such as customer service and innovation, the more their success depends on effectively marketing themselves to, attracting, and hiring the right talent.

In this vein, Van Esch, Black, et al. (2021) examine how firms can use AI to reach, identify, attract, and select human capital. The article explores factors that can influence a job candidate's intent to complete AI-enabled recruiting processes, especially the influence of a firm's use of biometrics in that process. Providing insights from marketers for managers, the authors show that social media can increase technology use motivation in an Al-enabled recruiting context and that trendiness and biometrics act as fist-stage and second-stage boundary conditions, respectively.

Greater connectivity and responsive automation

Increased connectivity and digitalization of content creates the potential for more channels of communication. AI provides the potential of using data to determine which messages are best sent to which

customers via which specific channels (Campbell et al., 2020). The level of personalization and mass-customization of advertising and customer outreach that this might provide is intriguing at the least and irresistible at the most (Camilleri, 2018). However, not all customers have access to the systems, services, and technologies required to capture this potential.

Mogaji et al. (2021) examine the challenges of digital marketing financial services to vulnerable customers or those who have limited access to financial systems, services, or technologies. They contend that Al-enabled digital marketing is not as simple as collecting big data and using analytical algorithms; the technology may not always help businesses target their customers more effectively. They highlight the importance of human connection for optimal customer experience and engagement with financial services providers. Understanding ethical implications, as well as data and modeling challenges, is necessary for the successful deployment of AI.

Taking a different approach, the article by Paschen et al. (2021) examines the activities, actors, and resources of AI and value co-creation in B2B sales. Using Service-Dominant Logic (S-DL) as a lens, the authors suggest that Al-enabled value co-creation processes are complex interactions between human and non-human actors who perform any of six different roles either jointly or independently. Providing a deeper understanding of the activities (the "how"), the actors (the "who"), and the resources (the "what") in AI-enabled value co-creation.

AI application in marketing

The breadth and depth of AI application in marketing is significant, potentially even staggering. For example, AI has the potential to analyze target customers, communicate content, and deliver it via customized marketing campaigns (Stone et al., 2020). In addition, AI has the potential to reduce the time and cost of creating such campaigns, as well as increasing their effectiveness (Roggeveen & Sethuraman, 2020). From a research standpoint, however, knowing where we are and where we might yet go is daunting. The potential breadth and depth are of such magnitude that it is hard to make sense of it all. Consequently, in an effort to organize and understand past research, Feng et al. (2021) used the VOS Viewer data visualizer to determine the major authors in the field and to identify themes and concepts emanating from prior research.

Uncaptured value chain efficiencies

Even if a business has a product or service that customers want, that business will not survive, let alone succeed, unless it has an effective and efficient value chain to get its products or services to customers. The added challenge today is that companies cannot just set up their value chain and then leave them in place. In today's changing environment, value chains must be configured, reconfigured, shortened, simplified, sped up, and constantly adjusted. These changes can extend from the simple to the more complex. At the simpler, but still important, end of the continuum, changes such as acquisitions, can require companies to find and replace logos, mascots, and branding messages all along the chain. Often this must happen quickly and as accurately as possible, across multiple countries and languages. Doing this manually takes time and is subject to human errors. AI-enabled find-and-replace technology can make instantaneous changes/updates across all design files (Floridi, 2020). Recognizing and ensuring that all pieces of content are the latest version mitigates against human error and brand deterioration. AI's find-and-replace capability extends to the identification of slow, discontinued, and/or obsolete products (Sharp et al., 2018). AI can significantly enhance the speed and accuracy of these find-and-replace activities (Reinartz et al., 2019).

However, AI capabilities potentially could be extended to more complex aspects of company value chains. Oosthuizen et al. (2021) consider how the traditional value chain drives inefficiencies and how going direct to customers can shorten the chain. As new retailers in particular make these changes, it leaves traditional retailers vulnerable to disruption. In their paper, the authors suggest that AI may be the most transformative of the new technologies that could impact the retail industry value chain.

The Future of AI in Digital Marketing

The scope of AI in marketing that warrants future investigation certainly exceeds what could be captured in this special issue. Nonetheless, the collective curiosity of the contributing authors, informed by their recent research on AI in digital marketing, has led us to offer a list of topics for future research, summarized below. To us, it is clear that there is a slew of interesting research areas that remain unexplored within the important domain of AI in digital marketing.

Research Themes on AI in Digital Marketing

Ethical questions

- As AI-enabled tools increasingly scan social media, IoT, and other digital profiles in an effort to create hyper-personalized campaigns, where should the line be drawn relative to invasion of consumer privacy and the associated negative consumer response?
- Will AI-enabled tools need to be taught how to self-monitor or will humans always be required to monitor AI-enabled learning?
- To what extent will or should marketers be required to disclose the use of AI in generating and creating content?

Application questions

- Will AI-enabled biometric tools and technology be utilized in marketing to assess consumer profiles and generate advertising to influence consumer behavior?
- To what extent will AI-enabled tools be used to monitor/evaluate/influence consumers' physiological state "before-during-after" the shopping/purchase experience?
- How might AI be used to both detect and defuse participation behavior in online digital firestorms?
- Does the balance of power between consumers, retailers, and product manufacturers change due to AI-enabled marketing?

Strategic questions

- How might CMO's and marketing practitioners work alongside AI to increase the firm's strategic capability?
- Does sequencing AI in the customer journey reduce attribution levels and keep customers in the funnel?
- Will AI-enabled geo-locating, digital tattoos, and wearables lead to precise advertising, right up until the point-of-sale (POS), increasing consumer dwell time, shopping task efficiency, and basket size?

General Research Questions

- With AI-enabled marketing, how will the marketing function of organizations change?
- Under what conditions should the ethics of AI be (non)acclimatized and (mis)adjusted?
- In marketing, how should human intelligence and AI work alongside each other?
- How will conversational AI disrupt the way consumers are directed toward and engage with particular brands/products?
- How will consumer personas, created by AI, impact how consumers are segmented and/or targeted?
- What role will AI play in the collection, analysis, and utilization of biometrics in consumer behavior?
- How much control and autonomy should consumers have in relation to AI-enabled advertising and marketing—for example, "in-the-loop," "on-the-loop," or "out-of-the-loop".

Thank You to Our Reviewers

Clearly, there are many areas worthy of investigation under the general dome of AI in digital marketing. We believe this special issue provides an important push toward answering some of these open questions. However, this issue would not have been possible without the generous contributions of time and thought by the reviewers. To them, we extend our thanks for their vital contributions to the publication of this issue of the *Australasian Marketing Journal*.

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