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A Systematic Literature Review Using PRISMA

The Use of AI as a Tool for Marketing Communication Campaigns: Applied Study of Barbie Selfie-Generator.

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ABSTRACT

This paper analyses the essential role of artificial intelligence (AI) in altering marketing communications and brand management through successful Barbie film promotion. Using the Barbie film promotion as an applied study, this paper conducts a systematic literature review using the PRISMA model to investigate the advancement of AI and its developing applications in marketing communications and brand management. To get a better understanding of how AI may be strategically applied to increase audience engagement and brand exposure, the study examines credible blogs, magazines, and scientific publications. Greta Gerwig's film, released in July 2023, surpassed $1 billion in global movie box office earnings and significantly boosted Barbie sales by 16%. The multi-channel marketing campaign effectively reinforced Barbie's iconic status and built strong viewer relationships by utilizing AI and virtual/augmented reality technologies to create captivating online experiences. The "Barbie Selfie Generator," an AI tool created in conjunction with PhotoRoom, was at the heart of this initiative, allowing users to create viral content by turning personal images into Barbie-themed character posters. To boost consumer engagement and brand loyalty, this study highlights the useful advantages of using AI into marketing strategies. This study highlights the significant influence of AI on audience engagement and brand management, and demonstrates how AI might be used to differentiate in crowded markets and achieve significant marketing success.

Keywords: Artificial Intelligence, Marketing Communications, Brand Management, PRISMA model, Barbie Campaign.

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1. INTRODUCTION

A historical analysis shows Barbie has had a long and lasting presence throughout the ages. Being a cultural icon, it has been relevant for decades, unlike other toys (Roberts, 2020).

The Barbie film marketing communications campaign launched by Warner Bros. on 23 May 2023 was a success. The film, written and directed by Greta Gerwig and starring Margot Robbie and Ryan Gosling, premiered in July 2023 and grossed over $1 billion at the global box office (Chance, 2023). At the same time, Barbie's sales have been on the rise, with Mattel's latest quarterly financial update revealing that sales of its best-selling doll were up 16% in the same period last year to $605m (£477m) - (Forsdick, 2024).

The complete, consistent, and multi-channel approach of Barbie's film marketing campaigns has ensured Barbie's presence in every form of media, which amplified its reach to unprecedented levels (Madhani, 2023). The marketing communications campaign of the film leveraged social media and created immersive online experiences for users, using technologies such as artificial intelligence (AI), virtual reality (VR), and augmented reality (AR).

On platforms such as TikTok and Instagram, the #BarbieChallenge was launched, allowing for a deeper connection between the brand and its audience, generating high engagement and brand loyalty (Aprile, 2023). There was a clear focus on unconventional channels and creative activations to stand out in a crowded marketplace and increase Barbie's brand visibility and relevance (Hawley, 2023).

To the best of our knowledge, no previous research has particularly explored this topic using the case of the Barbie movie marketing campaign. As a result, this paper aims to investigate the influence of AI on marketing communications. To attain this goal, the following research objective was developed; how can AI help brands increase brand awareness and engage audiences in the new technological era?

The Barbie film communications campaign and in particular the use of an AI tool called "Barbie Self Generator" will be used as a reference case. The AI tool, developed in partnership with PhotoRoom, an AI-based photo editing application, allowed users to upload their images, which

then generated character posters and editable text options. It turned out to be a user-generated content experience that instantly went viral among netizens (Ranjan, 2023).

To this end, the PRISMA was used, a model for a systematic literature review of existing scientific works i.e., books, journal articles, and other relevant sources such as magazines and blogs with credibility and authority to understand this particular phenomenon. This work will promote knowledge of the applicability of using AI to increase brand awareness and engage audiences in the new technological era. The next section provides a full explanation of the study methodology, including data gathering and analytic techniques.

2. METHODOLOGY

The paper follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Abelha et al., 2020; Haddaway et al., 2022). Published in 2009, the PRISMA statement was created to assist systematic reviewers in openly disclosing the purpose of the review, the actions taken by the authors, and the results obtained (Haddaway et al., 2022; Page et al., 2021). A review protocol outlining the search strategy, data extraction, data analysis, and article selection criteria was created.

We used two electronic databases, B-On and Scopus, to perform a thorough search for the context of our study on Barbie's marketing campaign. These databases are appropriate for finding peer-reviewed material relevant to our study because they were selected for their high credibility and significance to the international scientific community. In addition, we broadened our data collection to include reliable online sources including news articles, blogs, and opinion pieces. It is relevant to mention that articles from the web were selected for their quality, relevance and the credibility of the sources. The dearth of peer-reviewed research explicitly discussing AI-driven marketing initiatives, especially in relation to the Barbie movie's "Barbie Self Generator" project, made this decision necessary. Internet-based sources offered important insights into the creation, execution, and public reaction to the campaign because of the novelty of this phenomenon and its dependence on real-time user participation and digital trends. We were able to record viewpoints and background information not yet covered in scholarly literature thanks to reliable sources and knowledgeable discussion. This additional method fills the research gap and guarantees a more thorough comprehension of the phenomenon.

To make our analysis accessible and consistent, we only examined English-language publications from 2018 until 2024. Two researchers separately searched the databases, guaranteeing thoroughness and reducing bias. To find pertinent literature spanning titles, abstracts, and keywords, we utilized keywords like "AI* AND marketing* AND 'brand awareness'* AND Barbie movie."

In order to find any other pertinent sources that might have been missed in the original query, the reference lists of the articles found by the electronic search were also manually examined. We were able to compile a substantial body of literature for comprehending the function of AI tools, such the "Barbie Self Generator," in contemporary marketing campaigns thanks to this thorough methodology.

There were three rounds of article selection for the study. Two reviewers independently evaluated the indicated sources' applicability in the first round. Then we examined the shortlisted sources in the second round and combined the results into a coherent paper for the final round. Five sources were eliminated from the 33 that the search produced because they did not directly address the study issue (Figure 1). Regarding the methodologies of the revised studies, we found the predominance of conceptual papers and qualitative studies.

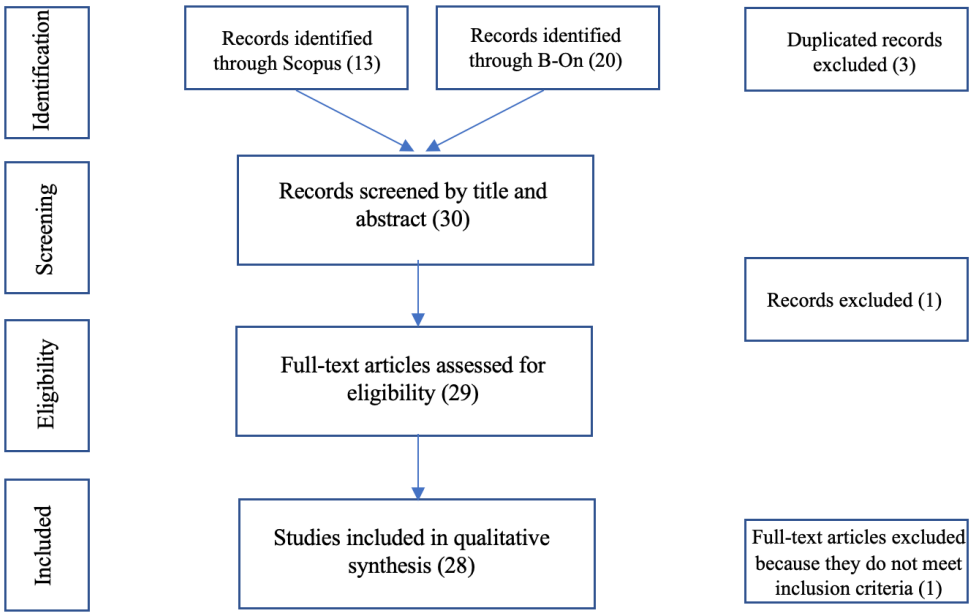

Figure 1. PRISMA flow diagram

3. HISTORY OF ARTIFICIAL INTELLIGENCE

AI is now one of the most innovative technological tools in the contemporary world and influences every aspect of modern life (Raton, 2022). AI refers to “programs, algorithms, systems, and machines that demonstrate intelligence” (Shankar et al., 2018, p. 6) and “machines that exhibit aspects of human intelligence mimicking intelligent human behavior” (Huang & Rust, 2018, p. 155 as cited in Davenport et al., 2019). AI is based on technologies such as machine learning, deep learning, neural networks, natural language processing, rule-based expert systems, and robotic automation. These technologies make it possible to automate repetitive tasks and perform them faster and more efficiently than humans. In addition, AI systems are able to analyze data, learn from patterns, and make automatic decisions in problem-solving (Davenport, 2018; Davenport et al., 2019; Raton, 2022). Since 1600, humans have been interested in automation and speed in doing things. As early as the late 1800s, many computer scientists believed that machines in the future would be equipped with knowledge that approached or even went beyond human knowledge. In the early 1900s, interest in automation and intelligent machines increased; the first robots date from those very years (Ilyas, 2022). John McCarthy first spoke about the concept of "Artificial intelligence” in 1956. This event, along with others, increased the interest of scientists in this area, leading to important developments like the usage of robots in industries or the development of AI-related programming languages (Ilyas, 2022). Since 2000, other relevant developments in the field of AI have been observed, from software capable of interacting with humans to virtual assistants (Ilyas, 2022). Autonomous vehicles, visual recognition, and the understanding and deep processing of natural language can also be mentioned. The evolution of AI has been possible due to many factors, including platforms such as the Internet of Things (IoT) that allow for the collection of huge amounts of data and the power of processing due to effective data storage mechanisms (Ilyas, 2022).

Adoseri et al. (2023) define AI as an electronic and independent entity that functions like a human expert. AI integrates numerous algorithms and computational models, which is why it cannot be defined as a single technology. The most common forms of AI include the following:

- Machine learning: This is the main computing tool that includes numerous algorithms and statistical models that are trained from large amounts of data. Through experience and learning, these algorithms make it possible to analyze data and use them for making predictions, drawing inferences, performing tasks without instructions, and improving performance in all fields

(Adoseri et al., 2023; Nitzberg & Zysman, 2022). There are three types of machine learning: supervised learning, unsupervised learning, and reinforcement learning. The first one involves classifying data to make models to analyze new data. In unsupervised learning, data are ordered according to differences and similarities but are not classified. Reinforcement learning, instead, involves feedback to the AI system after it acts; here, the data are not labeled (Adoseri et al., 2023; Nitzberg & Zysman, 2022).

- Deep learning is a type of machine learning that uses artificial neural networks. In deep learning, neural networks are designed to look like those in the human brain and are used to solve complex problems by processing abstract features. Among its capabilities are speech recognition, image recognition, and natural language processing (Adoseri et al., 2023).
- Natural Language Processor (NLP): AI can communicate with humans by speaking their language. NLP can process, translate, and interpret human language through machine learning. Among the various tasks of NLP, we can mention text translation, language recognition, and sentiment analysis. Spam detection is an example of NLP; program 11 analyzes the text of the e-mail and the subject line and then decides whether to classify it as spam (Van der Maas et al., 2020).
- Robotic: they are computer-based programmable machines that perform repetitive and monotonous functions but also tasks that are too difficult for humans. Machine learning is also used to build robots, and they are equipped with physical manipulators and sensors that enable them to perform different kinds of tasks, from analyzing and processing data to making decisions (Adoseri et al., 2023). Machine vision is used for recognition, analysis, and interpretation of visual inputs such as graphs, tables, photos, PDF documents, and videos, as well as texts. The basis of this method is always deep learning and pattern recognition. Some fields, such as R&D and healthcare, are developing through the application of machine vision (Van der Maas et al., 2020).

4. BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE

AI has numerous advantages such as transforming social, economic, and industrial dynamics. It automates repetitive and complex tasks, so humans can focus on more strategically important tasks, improving operational efficiency and productivity. This also makes it possible to reduce errors and thus improve production efficiency during production steps in industries as robots collaborate with human operators (Adoseri et al., 2023; Davenport et al., 2019; Rakha, 2023). In

marketing, the use of AI systems allows the personalization of the customer experience, making it more engaging and valuable (Davenport et al., 2019). Machine learning allows AI systems to continuously learn new data, fostering continuous adaptation of these systems to context and greater accuracy and efficiency in performing tasks (Nitzberg & Zysman, 2022). Finally, because of its ability to collect and analyze a lot of data in a short time, AI can use this data to make predictions about emerging trends (Davenport et al., 2019; Nitzberg & Zysman, 2022). Despite its many advantages, AI also presents some challenges that need to be considered, such as the processing and storage of a large amount of personal and sensitive data needed to train algorithms. Indeed, the first issue is about privacy and security in the use of this data and concern about possible cyber attacks. Therefore, there is a need for the development of workable privacy and security measures that ensure the protection and correct use of these data (Adoseri et al., 2023; Rakha, 2023; Saghiri et al., 2022). A second problem concerns the presence of bias; indeed, discriminatory results can be presented that result from the fact that the data used to train AI systems reflect social biases. To avoid this problem, regular monitoring and supervision by researchers is required to make sure that the data used are real and representative (Adoseri et al., 2023; Rakha, 2023). Another challenge regards the high costs of AI systems, leading to the creation of accessibility gaps, and finally, there is also a concern about technological unemployment. AI will lead to the replacement of some jobs, but, on the other hand, it can create new job opportunities in areas such as data analysis, management, and the development of AI software and systems (Rakha, 2023).

5. ARTIFICIAL INTELLIGENCE IN BRAND MANAGEMENT

AI has become a prominent priority in today's world, and the race to achieve artificial general intelligence (AGI) is leading to the creation of tools that possess flexibility and the ability to perform many tasks (Davenport et al., 2019). Thus, it is important to conduct a literature review on the topic to understand how brands are adapting to this new technology. By combining AI insights with human judgment, it can predict what customers want to buy, identify the right timing for launching promotions, allocate efficient advertising resources, and define the correct price to charge (Davenport et al., 2019). Brands cannot overlook the importance of integrating AI across their brand management operations, but this requires a careful strategy; if a company wants to be prominent using new technologies, it may have to build the marketing department from scratch

and, in more extreme cases, the entire company itself to use the tools to their full potential (Rivera-Pesquera et al., 2021). Companies use AI to gain a competitive advantage in their field of operations; to stay ahead, they must be "technologically opportunistic," embracing a proactive approach to technological changes since AI is constantly evolving. Having said that, companies must be agile and flexible to adapt to the challenges, regulatory requirements, and ethical considerations while adopting new technologies (Chen et al., 2023). In implementing AI technologies, the collaboration of top management is crucial, as it provides high investments in terms of finance and skilled people, ethical guidance, and reduces resistance, fostering a broad consensus inside the brand. Brands should evaluate the pros and cons, while keeping an eye on early adopter competitors, and integrate AI across a broad range of marketing activities instead of limiting the application to specific aspects and tasks (Chen et al., 2023).

Brands must use AI to increase the concept of "brand love", and to that end, communication must be aimed at moving people and getting them out of their routines, as the ultimate goal must be to emotionally engage the audience (Koo et al., 2023). In addition, studies suggest that brands should not stop at AI alone to manage a brand, but should also include AR and VR to strengthen the brand experience. The final goal must be to use those technologies to create a seamless ecosystem where customers can move from one platform to another without thinking (Rivera-Pesquera et al., 2021). In other words, they must create an omnichannel strategy that can connect and engage the audience. First, brands need to humanize themselves to improve brand attitude and online word-of-mouth, as having a strong brand personality allows them to better respond to any moment of crisis (Rivera-Pesquera et al., 2021). Among the specific tasks that brand managers need to perform, enhancing the online experience by using AI to improve audience evaluation of the brand is paramount. In doing so, word-of-mouth activities on social media should be monitored, and efforts should be made to encourage interactions in these environments. Finally, by creating a strong brand personality that connects with customers, it is also possible to resist the effect of negative word-of-mouth, incentivize purchase intentions, and thus keep revenue intact (Torres & Augusto, 2019).

Companies are adopting new technologies with data analytics to cope with ongoing margin pressures, shorter strategy cycles, and increased customer expectations (Ameen et al., 2021).

AI not only affects businesses and companies, but it also has an impact on customer perception over time. Nghiem-Phu (2023) revealed that customers valued the ability of AI to personalize the

items they needed and create new suggestions. The researchers also discovered that customers were somewhat bewildered about where the AI-generated information came from, although they were surprised, amazed, and entertained by it (Nghiem-Phu, 2023). Trawnih et al. (2022) emphasized that trust and perceived sacrifice played a significant role as mediators of the effects of AI-powered customer experience, convenience, personalization, and AI-powered service quality.

6. ARTIFICIAL INTELLIGENCE IN MARKETING COMMUNICATIONS

AI in marketing is growing in importance and use (Huang & Rust, 2021). Due to the abundance of data, companies are investing heavily in machine learning to improve their marketing capabilities (Ma & Sun, 2020).

Today, consumers spend much of their lives in digital environments where their behavior is tracked and recorded, providing relevant customer data. With the help of predictive algorithms, it is possible to predict future buying behavior and, at the same time, personalize customer interactions and touchpoints (Malthouse & Copulsky, 2023).

In advertising, for example, the use of AI to improve the effectiveness of marketing campaigns is becoming increasingly important (Marr, 2022).

The process of interaction between a marketer and AI consists of the following six components: planning, content, execution, users' data collection, data management, and data analysis (Nesterenko & Olefirenko 2023). The concept of 'big data' means that marketers have the ability to aggregate and segment huge amounts of data with minimal manual effort. By using this data, they can deliver the right message to the right person at the right time, through the channel of their choice (Dimitrieska et al., 2018).

With customer data, companies can make their offers more relevant and achieve competitive advantages: they can produce more consumer-oriented products; they can provide more consumer-oriented services; they can identify more accurately the target market, resulting in a higher conversion rate; they can fully meet the needs of their customers (Arsenijevic & Jovic, 2019). However, there is no agreed vision or consistent framework for how machine learning methods should be incorporated into marketing research.

Huang and Rust (2021) developed a three-stage framework for strategic marketing planning that incorporates multiple benefits of AI: mechanical AI for automating repetitive marketing functions

and activities, thinking AI for processing data to make decisions, and feeling AI for analyzing interactions and human emotions.

Marketing practices such as digital search and advertising, social media interaction, mobile tracking and engagement, online shopping, and in-store experiences are increasingly powered by scalable and intelligent algorithms, both by technology companies such as Google and Amazon and by many smaller MarTech (marketing technology) companies (Ma & Sun, 2020).

AI-based solutions are already being used by some of the world's most recognizable brands. For example, Amazon.com's Prime Air uses drones to automate shipping and delivery. Domino's Pizza is experimenting with autonomous cars and delivery robots to deliver pizza to the customer's door. RedBalloon uses Albert's AI marketing platform to discover and reach new customers. Macy's On Call uses natural language processing to provide an in-store personal assistant to customers. Lexus uses IBM Watson to write its TV commercial scripts, "Driven by Intuition." (Huang & Rust, 2021).

The chatbot, a software that performs automated tasks and engages in human conversations, is also a very well-known AI tool in marketing. One of the biggest advantages of using chatbots in marketing is the simple and quick delivery of information, but there is also a fear that respondents will get the wrong information from chatbots, which needs to be addressed in the future (Arsenijevic & Jovic, 2019).

But AI in marketing also brings challenges. AI models are more likely to cause unexpected, delayed, and hard-to-quantify consequences in comparison to traditional models. In targeted online advertising, for example, it has been shown that women are more expensive to target than men, so real-time bidding competition is fiercer. As a result, women are less likely to be targeted with less profitable ads, such as IT job vacancies, leading to gender bias in the advertising of job opportunities (Lambrecht & Tucker, 2019 as cited in De Bruyn et al., 2020). Algorithms often fail to perform as expected due to various data, model, and market biases. The sources of algorithmic bias in marketing offerings are often rooted in poor training datasets, weak mathematical models, or historical and social contexts (Akter et al, 2023).

Consumer expectations around data privacy are also accelerating (Malthouse & Copulsky, 2023). This fact may compel regulators to limit the types of consumer data collected and its uses. This may, in turn, shift the process by which brands achieve permission from consumers to collect and use their data. After the implementation of regulations such as the GDPR (General Data Protection

Regulation) and the CCPA (California Consumer Privacy Act) that mandate consent and anonymization in an effort to protect privacy, but also allow those who wish to receive more targeted messages to do so, it is possible to foresee other regulations in the future. The European Union recently adopted the AI Act, the world's first comprehensive AI law. It establishes safeguards for general-purpose AI. It limits the use of biometric identification systems, and bans social scoring and AI used to manipulate or exploit user vulnerabilities. It also establishes the right of consumers to lodge complaints and receive meaningful explanations. (EU AI Act, 2023).

7. THE BARBIE SELFIE-GENERATOR

Brands, the Internet, and AI are coming together in new, synergistic way to promote and represent products. There has always been a powerful partnership between advertising, marketing, and pop culture, but this partnership is now unfolding in new, algorithmically driven ways (Danesi, 2024). The latest Barbie film from Warner Bros. has broken many records: the biggest opening of 2023, the biggest opening weekend for a film directed by a woman, the first $1 billion film from a single female director, and one of the few films whose marketing spend exceeds its production budget: An estimated $150 million, according to rival studio Warner Bros (B., 2023).

The “Barbie Selfie Generator”, an AI-based photo editing app (Figure 2), launched by Warner Bros. in partnership with the French start-up company PhotoRoom (which flourished in the commercial photography sector), is also an official website that allows anyone to create a Barbie poster with their photo for free. The tool can be accessed from both a mobile phone and a computer (PR Newswire, 2023).

It was only one of the various marketing tactics the extremely popular "Barbie" movie employed, starring Margot Robbie and directed by Greta Gerwig (Cruz, 2023).

Soon after the images of Barbie posters were released ahead of the release of the Barbie movie, people on social networks began to recreate the pictures with their own photos, with a customized "This Barbie is..." tagline, feeling part of Barbie land, with these memes.

The filter works by using PhotoRoom's API to remove backgrounds from user-generated content and replace them with an image that replicates the film's promotional posters. In fact, one of the biggest challenges marketing teams face with user-generated campaigns is maintaining quality and protecting brand integrity, and in this case, it was possible (Taylor, 2023).

Figure 2. The Barbie Selfie Generator

Source: Taylor (2024) in https://tech.eu/2024/02/27/photoroom-raises-43m-in-series-b-round/

Millions were fascinated with seeing themselves or others transformed into a *Barbified* version of themselves.

Photoroom has developed the foundation model of this AI photo editor and believes it is the next step in empowering businesses to create amazing product photos without the need to be an expert at prompt engineering or photography (Macaulay, 2024).

Using state-of-the-art AI and machine learning algorithms, Background AI identifies the content in the user's uploaded image and replaces the background while maintaining the content's natural appearance.

The playful experience of "The Barbie Selfie Generator", released ahead of the film's debut, gained traction online and attracted the attention of celebrities like Rihanna and Pedro Pascal and many others. From its release on the 7th of April to the 27th of July 2023, the interactive Barbieselfie AI filter has been used more than 13 million times (Deyo, 2023).

The "Barbie Selfie Generator" became a viral trend on social media and led other brands to associate themselves with the trend (Marketing Interactive, 2023). Brands like Capitastar, HBO Asia, Julie's, Mercedes, and UOB capitalized on the trend, publishing fun posts on social media inspired by the Barbie Selfie Generator (Marketing Interactive, 2023).

Photoroom app has been downloaded more than 150 million times worldwide, ranked as the sixth most popular generative AI product as per data gathered in June 2023 ((Taylor, 2024). This French startup has raised a $43m round at a $ 500m valuation following the success of "The Barbie Selfie Generator"(Macaulay, 2024).

It seems clear that "The Barbie selfie generator" has opened the door to future marketing campaigns using generative AI (Cruz, 2023) and the potential of personalized experiences.

The fact is that AI-generated content was a success in the launch of the Barbie film, and a clear example of how humans and technology can work together to increase creativity, social media reach, and revenue for businesses.

8. CONCLUSION

The "Barbie Selfie Generator" case study demonstrates AI's transformational capability in modern marketing communications and brand management. Warner Bros. and its partner PhotoRoom used AI to create extremely engaging, personalized user experiences in the promotional campaign for the 2023 Barbie film. This campaign demonstrated not only how AI can increase customer connection and brand loyalty, but it also established a new standard for incorporating modern technology into marketing tactics. The success of the Barbie Selfie Generator emphasizes many crucial elements of AI's role in marketing. First, it emphasizes AI's capacity to improve consumer engagement through personalized and interactive content. By allowing users to create bespoke Barbie-themed posters, the campaign encouraged consumer engagement and enthusiasm, dramatically increasing its reach and effect. The viral nature of AI-generated content on social media platforms emphasizes AI's ability to develop appealing and shareable marketing materials.

Moreover, the case study demonstrates the strategic use of AI in controlling brand impression and visibility. The Barbie Selfie Generator not only preserved the quality and integrity of the brand's image, but it also fit with the film's overall concept, cementing Barbie's iconic stature in pop culture. This collaboration between AI technology and brand identity was critical to meeting the campaign's objectives and assuring its appeal to a wide audience.

Furthermore, the campaign's success reveals important insights regarding the future of marketing communications. As AI technology advances, its uses in marketing are expected to grow more complex, allowing firms to provide increasingly more personalized and immersive experiences. The Barbie Selfie Generator is a forerunner to future trends in which AI-driven marketing will

play a critical role in developing highly personalized consumer journeys and improving brand-customer interactions.

However, the use of AI in marketing poses several issues that must be addressed. Data privacy, algorithmic bias, and the ethical implications of AI use must all be carefully handled to guarantee that the advantages of AI are realized while preserving customer confidence and equity. To successfully traverse these hurdles, marketers must implement strong data governance frameworks and ethical AI practices.

Despite its insightfulness, this study has a number of shortcomings that call for more research. Its dependence on non-peer-reviewed sources, such as blogs and opinion articles, introduces possible bias and limits the analysis's comprehensiveness, which is one of its main limitations. Furthermore, the capacity to contextualize findings within larger historical or longitudinal patterns is limited by the temporal emphasis on publications from 2018 to 2024. Although illustrative, the research's focus on the Barbie Selfie Generator campaign limits its applicability to other sectors or brand settings. Additionally, the ability to explicitly correlate campaign outcomes—like social media engagement—is weakened by the lack of strong quantitative measures. Although ethical issues like algorithmic bias and data privacy are recognized, they are not well investigated, which leaves a gap in how they are addressed. Comparative studies of AI-driven campaigns across industries, longitudinal research to gauge long-term impacts on customer retention and brand loyalty, consumer perceptions of AI-generated content, ethical dilemmas, quantitative approaches, cross-cultural research, and developments in generative AI for individualized experiences are all important areas for future study.

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