

The Application of AI Technology in Brand Marketing: A Case Study of Procter & Gamble

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Abstract. This article comprehensively discusses the in-depth application of artificial intelligence technology and its far-reaching impact in the context of the digital marketing 3.0 era. With the rapid development of technology, AI technology has become an indispensable help for marketing departments, bringing unprecedented changes to brand marketing. Taking Procter & Gamble as a specific case, this article analyzes the practical application effect of AI in brand marketing in detail. The study finds that AI has significant advantages in gaining insight into consumer needs, accurately positioning the market, enhancing user experience, and improving marketing efficiency. However, at the same time, the application of AI technology comes with potential risks and challenges, such as information security threats, algorithmic bias, and over-marketing. Therefore, this paper proposes that while enjoying the convenience and benefits brought by AI technology, brands should take better measures to protect user information and use AI technology within a reasonable range to achieve more robust and sustainable development. The application of AI technology in brand marketing has broad prospects and potential, but at the same time, it also requires brands to respond to potential risks and challenges more prudently and comprehensively.

Keywords: Case Study, Procter & Gamble, Artificial Intelligence, Digital Marketing.

1. Introduction

The development of digital marketing is strongly related to the development of the Internet. In the 1.0 era, digital marketing is manifested as a one-way output from enterprises to consumers, through basic online advertising, information push, and to achieve marketing goals. In the 2.0 era, digital marketing has transformed into two-way interaction, and the expression of consumers has begun to be valued by enterprises, and at the same time, with the rapid development of self-media, consumers themselves have become part of communication.

Nowadays, digital marketing has entered the 3.0 era, and on the basis of the first two stages, advanced technologies such as big data and artificial intelligence are applied to digital marketing to achieve precision marketing and intelligent management. Enterprises are no longer limited to traditional online promotion but use data analysis to gain insight into consumer needs and realize intelligent customization and distribution of content [1].

The application of artificial intelligence in digital marketing has made significant research progress, which has greatly changed the marketing strategies and methods of enterprises. Using AI technology, companies can efficiently analyze massive amounts of data, accurately capture market trends, predict consumer behavior, and develop more personalized marketing plans. This not only improves the efficiency and effectiveness of marketing campaigns, but also significantly increases consumer engagement and satisfaction [2]. Nowadays, more and more companies, especially Fortune 500 companies like TikTok, Google, Coca-Cola, make heavy use of AI in their digital marketing.

However, although the application of AI in digital marketing has achieved many results, there are still some research gaps and directions to be explored. For example, because AI technology has been mature for a relatively short time, there is a lack of research on the long-term impact of AI+ marketing on consumer behavior and market dynamics. While the short-term benefits of AI+ marketing are obvious, the long-term consequences of widespread adoption of AI in marketing are less understood [3].

Therefore, studying the impact of long-term application of AI technology in digital marketing will not only help fill the existing research gap, promote the innovation and development of marketing theory, but also provide enterprises with more sustainable solutions to help them stand out in the fierce market competition.

The purpose of this paper is to deeply explore how AI can lead digital marketing in the long term, and comprehensively examine its current application status, potential problems, and future development trends in digital marketing.

In terms of research methodology, a representative case will be selected, and the specific application of AI technology of the enterprise will be analyzed in detail, including how it can improve marketing efficiency, optimize user experience, and enhance data insight capabilities. At the same time, attention will also be paid to the challenges and obstacles encountered in the implementation of these cases, such as potential problems like data privacy protection and algorithmic bias, and corresponding solutions will be explored. In addition, suggestions on how to better use AI in digital marketing will be made, so as to provide valuable reference and inspiration for relevant enterprises.

2. Procter & Gamble

2.1. Company Profile

In this study, P&G China was selected as the research object by using the method of theoretical sampling. Procter & Gamble (P&G) is global consumer goods giant, founded in 1837, whose main business includes the sales of daily chemicals, pharmaceuticals, food, covering the world, and its products are sold to more than 180 countries and regions, with continuous and steady growth in annual turnover, showing strong profitability and market competitiveness [4]. The products occupy a leading position in many market segments such as shampoo, laundry detergent, toothpaste, and brands such as Pantene, Head & Shoulders, Tide, and Crest have high brand awareness and are deeply loved by consumers, forming a strong brand influence.

P&G's traditional supply chain model is factory-centric, push-type supply chain, and merchants produce products and push them to consumers through marketing, advertising and other means. However, in the "fast-moving consumer goods" industry, its product characteristics have three characteristics: high substitution, convenience, rapid update and iteration, in the context of new retail and consumer-centric, the demand scenarios of different channels, different sales models and different product categories are becoming more and more complex and diverse, and the traditional "elephant" supply chain has been difficult to cope with the rapidly changing business environment. Procter & Gamble's traditional winning formula began to fail, the brand advantage collapsed, and the channel network began to disintegrate, resulting in the sales of Procter & Gamble from fiscal year 2013 onwards, five consecutive years of continuous decline. As a result, P&G started the digital transformation of AI and started a new growth journey.

2.2. Digital Transformation

In 2010, P&G formalized its digital strategy, aiming to become the most technologically powerful company in the world and achieve full digitalization. After more than a decade of hard work, P&G has successfully transformed from a traditional consumer goods giant to a digital-driven leader. It has not only made remarkable achievements in e-commerce and social media marketing, but also deeply understood consumer needs through big data analysis and artificial intelligence technology, optimized the product development process, and improved the user experience. This transformation not only strengthened P&G's market position, but also gave it a sustained growth drive, allowing it to maintain its leading position in the global consumer goods market.

P&G has rich experience and achievements in digital reform, and it has achieved breakthroughs in many aspects such as understanding consumer needs and optimizing marketing budgets through AI technology, which provides valuable practical cases for studying the application of AI in digital marketing. Second, Procter & Gamble has a wide range of brand influence and market share around

the world, and its successful experience in digital transformation has important reference significance for other enterprises. Finally, P&G's digital transformation has been underway for more than a decade, and the challenges and solutions along the way provide an opportunity to gain insight into the complexities of the application of AI in digital marketing.

3. The Application of AI in Digital Marketing

P&G is using AI to predict outcomes in all aspects of its business, increasingly acting through automation and intelligence, especially in insighting into consumer needs, enhancing user experience, and improving marketing efficiency.

3.1. Insight into Consumer Needs

AI can efficiently conduct research, helping companies quickly understand consumer needs and make the right decisions when developing market strategies. P&G's Beijing R&D Center has created an intelligent artificial intelligence system called "Golden Radar", which can monitor the information reports of more than 1,000 media in real time, analyze and collect relevant information such as consumer needs, consumption scenarios, and product formulations, and conduct more targeted new product development and rapid testing [5]. At present, P&G has been able to use big e-commerce data to predict user needs, shorten the time to market of new products from "years" to "months", and the success rate of new products is as high as 95%. It can be seen that the application of artificial intelligence in the strategic decision-making of the enterprise market, by analyzing consumer demand, not only greatly improves efficiency, but also significantly improves the accuracy and forward-looking decision-making.

3.2. Enhance User Experience

Procter & Gamble uses a lot of artificial intelligence and algorithms on the marketing side to help brands better communicate and reach. Today, consumer needs are so broad and fragmented that traditional manual methods cannot meet. Through innovative applications such as Connected Home Research and Smart Dialogue, P&G is able to collect and analyze consumer usage scenarios and real-life feelings in real time. P&G's Smart Dialogue is an intelligent robot that interacts with consumers in real time through the user's mobile phone. It can understand and collect the scenarios and real feelings of consumers when using the product and combine generative AI in the background to empathize with the real-time experience of consumers and ask more targeted questions [6]. It not only realizes real-time feedback to consumers and improves consumer satisfaction, but also provides rich reference materials for brands to continuously improve user experience.

3.3. Improving Marketing Efficiency

P&G leverages artificial intelligence for targeted advertising and personalized customer experience design. AI algorithms deeply analyze consumers' purchase history, browsing behavior, social media interactions and other multi-dimensional data to accurately locate target audiences and identify consumers' preferences and needs, so as to create more accurate and efficient marketing campaigns [7]. P&G's in-house AI content lab, which intelligently optimizes every P&G advertising. All advertising and marketing are optimized by P&G's self-built advertising system based on big data, and the entire advertising touch point is optimized every month. According to P&G's internal data, through AI-optimized advertising programs, its advertising click-through rate and conversion rate have increased by more than 30% compared with traditional methods. At the same time, P&G's advertising costs have also been reduced by about 20% due to the AI algorithm's ability to analyze advertising effects in real time and adjust advertising strategies.

4. Problems Caused by AI in Digital Marketing

4.1. Threats to Information Security

As a giant in the FMCG industry, P&G has a huge consumer database that contains a large amount of sensitive personal information, such as name, address, purchase history, preferences. In the process of using AI for data marketing, this data needs to be fed into machine learning models for training and analysis. Once these data protection measures are not in place or are hacked, it can lead to large-scale data breaches. Such a breach will not only cause a serious violation of consumer privacy, but also may trigger a series of legal problems and a crisis of trust.

4.2. Algorithmic Bias

Algorithmic bias refers to the unfairness and tendencies that exist in the design and execution of algorithms, often can manifest itself in unfair recommendations or pricing strategies for specific consumer groups [7]. P&G's AI system analyzes data such as the user's browsing history, purchase history, and social media activity to deliver personalized advertising content to the user. This may lead to a greater tendency to push ads for products such as fashion apparel and electronics to younger users, and ads for products such as health products and household products to middle-aged and older users. This bias may limit the user's exposure to and learning about different products.

4.3. Lack of Common Sense

Common sense, as an implicit rule of the human world, influences all aspects of decision-making in the business environment, but AI will not follow rules that are not explicitly stated by humans. When AI analyzes consumer behavior and market demand, it mainly relies on historical data and algorithmic models [8]. However, the market is complex and volatile, and consumer behavior and preferences are often influenced by a variety of factors, including social, cultural, and psychological aspects. These levels often contain "common-sense" judgments, such as the impact of holiday promotions on the sales of specific goods, consumers' concerns about environmentally friendly packaging. However, the lack of in-depth understanding of these common-sense factors can lead to skewed analytical results.

5. Suggestions

5.1. Take Advantage of AI Technology

Overall, the benefits of using AI in digital marketing outweigh the drawbacks. AI technology has shown great advantages in digital marketing, not only to gain insight into consumer needs, but also to improve the user experience, resulting in a 95% success rate for P&G new products and a reduction in advertising costs of about 20%. This greatly improves the market competitiveness and business value of the enterprise.

5.2. Take Better Measures to Protect User Information

When using AI in digital marketing, businesses should follow the principle of least necessary to collect and use only the data necessary to achieve a specific purpose, and avoid excessive mining and misuse of user information. Companies have to ensure that the collection, storage, analysis, and use of data comply with privacy regulations, and respect users' right to know and choice, so as to maintain user trust and promote sustainable development.

5.3. Use AI within Reasonable Limits

Consumer sentiment cannot be fully represented by cold data, and marketers should maintain a keen understanding of market trends and consumer behavior while using AI, and avoid over-reliance on AI. Before using AI, it is important to clarify the marketing objectives and the scope of AI use to

avoid issues such as advertising proliferation and algorithmic bias. Through manual correction, the disadvantages of AI in digital marketing can be effectively circumvented.

6. Conclusion

This study is dedicated to analyzing the in-depth application of artificial intelligence technology in the field of brand marketing in the context of digital marketing 3.0 era and its far-reaching impact. Through an in-depth analysis of Procter & Gamble's case, a series of key research results and conclusions have been drawn.

Artificial intelligence has shown significant advantages in gaining insight into consumer needs, accurately positioning the market, improving user experience and enhancing marketing efficiency. These advantages not only greatly improve the efficiency of brand marketing, but also bring consumers a more personalized and high-quality service experience. However, the application of AI technology is also accompanied by potential risks and challenges such as information security threats, algorithmic bias and excessive marketing, which pose a certain threat to the sustainable development of brand marketing, requiring brands to adopt a more prudent and comprehensive strategy to deal with it.

Theoretically, this study reveals the dual nature of artificial intelligence technology in brand marketing, which not only brings unprecedented opportunities for brand marketing, but also comes with potential risks and challenges, and provides new perspectives and ideas for academic research in the field of brand marketing. In practice, this study helps brands to more clearly understand the value and limitations of AI technology, and provides an important reference for brands to formulate marketing strategies and decisions.

In the future, it is recommended to further explore the wide application of artificial intelligence technology in brand marketing, especially in small and micro enterprises, whether AI can help digital marketing reduce costs and increase efficiency.

References

- [1] Mazur, Nazarii. Challenges and prospects of digital marketing in the age of artificial intelligence. *Grail of Science*, 2023.
- [2] Kietzmann Jan, et al. Artificial intelligence in advertising: How marketers can leverage artificial intelligence along the consumer journey. *Journal of Advertising Research*, 2018, 58 (3): 263-267.
- [3] Järvinen Joel. The use of digital analytics for measuring and optimizing digital marketing performance. *Jyväskylä Studies in Business and Economics*, 2016.
- [4] Song Wenqi. Procter & Gamble (P&G). *Chung Hwa Paper*, 2023, 44 (3): 14-16.
- [5] Zhao Wenhui. Research on the impact of digital transformation on enterprises' green creativity: A case study of Procter & Gamble. *Hunan University*, 2023.
- [6] Whitler Kimberly, et al. . Assessing and improving digital ability: Procter & Gamble's approach to raising brands' digital competency. *SSRN Electronic Journal*, 2023.
- [7] Akter Shahriar, et al. Algorithmic bias in machine learning-based marketing models." *Journal of Business Research*, 2022, 144.
- [8] De Bruyn Arnaud, et al. Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing*, 2020, 51.