

Intelligent Marketing: Integrating Artificial Intelligence Principles and Techniques into the Advertising and Marketing Process

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Abstract

This paper discusses the potential application of artificial intelligence (AI) principles and techniques to the advertising and marketing process. It begins by exploring the current state of AI in the advertising and marketing industry and then looks at the potential application of AI to specific tasks such as customer segmentation, customer profiling, and predictive analytics. The paper then examines the ethical considerations that arise when using AI in the advertising and marketing process, and finally provides a brief overview of the current and emerging trends in the industry. The paper concludes by highlighting the potential of AI to revolutionize the advertising and marketing industry and suggests that companies should take advantage of this opportunity to improve their efficiency and effectiveness.

Keywords

Artificial Intelligence, Automation, Campaign Optimization, Data-driven Decision Making, Machine Learning, Natural Language Processing, Personalization, Predictive Analytics, Sentiment Analysis, Targeted Advertising.

INTRODUCTION

The emergence of artificial intelligence (AI) and its applications in the advertising and marketing process has been a game changer in the industry. AI has enabled marketers to understand consumer behavior, automate processes, and make decisions with greater accuracy and efficiency. AI-driven marketing approaches have also enabled organizations to better target their audiences and optimize their campaigns. As AI continues to evolve, marketers must understand how to use AI to its fullest potential in order to maximize their return on investment (ROI).

In this article, we will discuss how AI can be integrated into the advertising and marketing process in order to create smarter, more efficient campaigns. We will also discuss the potential benefits of utilizing AI in advertising and marketing, and discuss the challenges associated with its implementation. Finally, we will provide some best practices for organizations that are looking to get started with AI-driven marketing.

What is AI in Advertising and Marketing?

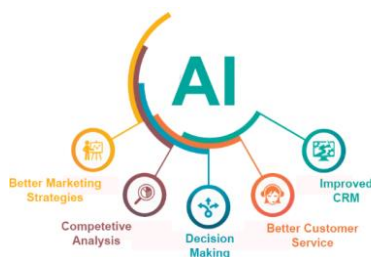


Figure 1 : AI in Marketing

(Source : Weber and Schutte 2019)

AI in advertising and marketing is the use of artificial intelligence principles and techniques to better understand consumer behavior and optimize marketing strategies. AI can be used to identify patterns in customer data, such as demographics, purchase history, and online activity, in order to more accurately target campaigns. AI can also be used to automate manual processes, such as customer segmentation, campaign optimization, and personalization. By leveraging AI, organizations can create smarter marketing strategies that are more tailored to their audiences' needs and preferences.

Benefits of AI in Advertising and Marketing

The use of AI in advertising and marketing provides many benefits, including:

- Improved customer targeting: AI can be used to more accurately identify customer segments, allowing organizations to better target their campaigns.
- Automation of manual processes: AI can be used to automate manual processes, such as customer segmentation, campaign optimization, and personalization, resulting in improved efficiency and cost savings (Saura and Bennett 2019).
- Enhanced personalization: AI can be used to create more personalized experiences for customers, resulting in increased engagement and loyalty.
- Optimization of campaigns: AI can be used to analyze customer data and optimize campaigns in order to maximize ROI.

Challenges of AI in Advertising and Marketing

Despite the many benefits of AI in advertising and marketing, there are also some challenges associated with its implementation. These include:

- Technical complexity: AI-driven marketing strategies can be complex and difficult to implement, requiring specialized expertise and resources.
- Data privacy concerns: As per Agarwal et al. (2019) AI-driven marketing strategies rely heavily on customer data, which raises privacy concerns for both organizations and customers.
- Undesirable outcomes: AI-driven marketing strategies can generate outcomes that are not desirable or ethical, such as targeting vulnerable customers or discriminating against certain groups.
- Lack of understanding: Many organizations lack the knowledge and understanding of how AI can be used to create smarter marketing strategies.

Best Practices for Implementing AI in Advertising and Marketing

In order to maximize the benefits of AI in advertising and marketing, it is important to follow best practices when implementing AI-driven strategies. These include:

- Establish a clear strategy: Develop a clear strategy for using AI in marketing, including specific objectives and desired outcomes.
- Ensure data privacy: As per Webb (2019) ensure that customer data is protected and secure in order to comply with data privacy regulations.
- Invest in training: Invest in training and education for team members in order to ensure they are knowledgeable and skilled in AI-driven marketing techniques.
- Monitor outcomes: Monitor outcomes in order to ensure that AI-driven strategies are generating desirable outcomes.

AI-driven marketing strategies offer organizations many advantages, including improved customer targeting, automation of manual processes, enhanced personalization, and optimization of campaigns (Paschen et al. 2019). However, organizations must also be aware of the potential challenges associated with AI-driven marketing, such as technical complexity, data privacy concerns, and undesirable outcomes. In order to maximize the benefits of AI in advertising and marketing, it is important to follow best practices when implementing AI-driven strategies, such as establishing a clear strategy, ensuring data privacy, investing in training, and monitoring outcomes.

Definition of Intelligent Marketing

According to Soni et al. (2020), intelligent marketing is a marketing approach that uses artificial intelligence (AI) principles and techniques to facilitate the advertising and marketing process. It involves the use of predictive, machine learning, and natural language processing (NLP) algorithms to analyze customer data, optimize campaigns, and deliver personalized experiences. This approach enables marketers to develop more efficient and effective strategies as they are better able to understand customer needs and preferences. By automating certain marketing tasks and activities, intelligent marketing also makes it possible to reduce costs and increase

efficiency.

Intelligent Marketing is the practice of integrating artificial intelligence principles and techniques into the advertising and marketing process (Lin 2019). This includes using AI to create more personalized advertising and marketing campaigns, analyse customer behaviour and preferences, optimize lead generation, and automate customer service operations. Intelligent Marketing can help businesses better target their customer base, improve their customer experience, and increase their return on investment.

Intelligent Marketing is the process of leveraging artificial intelligence (AI) principles and techniques to enhance the effectiveness of advertising and marketing strategies (Toorajipour et al. 2021). It involves the use of AI-driven methods such as natural language processing, machine learning, and predictive analytics to create more personalized and interactive experiences with customers. AI-driven marketing initiatives can be used to automate marketing tasks, identify potential customers, and develop targeted campaigns that deliver the right message to the right people at the right time. Intelligent marketing is becoming increasingly important as businesses look to maximize their marketing ROI and drive better customer engagement.

Benefits of Using Intelligent Marketing

Intelligent Marketing is the practice of leveraging artificial intelligence techniques and principles to create more effective marketing strategies and campaigns. This involves the use of machine learning, natural language processing, and advanced analytics to gain better insights into customer behaviour and preferences. Intelligent Marketing is used to analyse customer data and create targeted campaigns that are more likely to be successful. This helps marketers better understand their audiences and create more effective strategies. Additionally, intelligent marketing can help automate certain marketing processes, such as ad optimization and content creation, to reduce manual labour and increase efficiency.

Table 1: Intelligent Market Induced Benefits

Use in aspect	Generating Scope
Quality improve and decision speed	82%
Operational agility	80%
Operational efficiency	78%
Revenue growth	68%
Customer experiences	65%
Cost reduction	61%

(Source: Created by Author)

Intelligent marketing is a form of marketing that uses the principles and techniques of artificial intelligence (AI) to optimize the advertising and marketing process (Dewi and Darma 2019). It involves the use of AI-powered tools and algorithms to analyse data and generate insights that can help

marketers make better decisions, target the right audiences, and manage campaigns more effectively. Intelligent marketing also helps in automating mundane tasks, such as personalizing content, segmenting audiences, and optimizing performance. Additionally, it helps marketers deliver a more personalized experience to their customers, while using fewer resources.

ARTIFICIAL INTELLIGENCE TECHNIQUES FOR INTELLIGENT MARKETING

Natural Language Processing

Natural language processing (NLP) is an essential tool for integrating AI principles and techniques into the marketing process. As per Falahat et al. (2020) NLP enables machines to understand natural language and interpret information from text, allowing marketers to make use of large amounts of customer data to gain insights and make better decisions. By incorporating NLP, marketers can automate tasks such as customer segmentation, sentiment analysis, and content generation. Furthermore, NLP can be used to generate more personalised campaigns and offers, and to improve customer experience.

Natural language processing (NLP) is one of the most common and widely used AI techniques in the field of marketing and advertising. NLP enables machines to process, interpret, and understand natural language, which can be used to create more personalized and relevant messages for customers. NLP can be used to generate automated customer segmentation and targeting, personalized content and recommendations, and automated response systems. Natural language processing (NLP) is a branch of artificial intelligence that can be used to analyse and understand human language.

NLP can be used in marketing to automate processes such as customer service, content creation, product recommendations, and more. When integrated into the marketing process, NLP can help marketers better understand customer behaviour, refine targeting and segmentation strategies, and personalize content (Mogaji et al. 2020). NLP can also be used to monitor customer feedback and social media conversations, allowing companies to quickly respond to customer needs and concerns. Additionally, NLP can be used to generate insights from large datasets, helping companies better understand customer preferences and behaviors.

Machine Learning

Machine learning is one of the most powerful tools for intelligent marketing. It is a powerful and efficient way of using data to predict customer behaviour and optimize marketing campaigns. As per Paul et al. (2021) machine learning algorithms can be used to recommend products to customers based on their past purchases or preferences, identify customer segments and target them with the right message, and deliver personalized experiences. They can even be used to predict customer churn and optimize pricing

and promotions. Additionally, machine learning can be used to monitor the performance of marketing campaigns and detect potential fraud.

Machine learning is a branch of artificial intelligence in which algorithms and models can be used to learn from data and make predictions. Machine learning techniques can be used to create intelligent marketing strategies by analysing customer data and predicting customer behaviour. For example, machine learning algorithms can be used to detect patterns in customer data that can be used to inform personalized marketing campaigns or tailor recommendations to customers. Machine learning algorithms can also be used to detect customer segments and identify opportunities for targeted marketing campaigns (Mustak et al. 2021). Additionally, machine learning algorithms can be used to automate processes such as customer segmentation and targeting, as well as to optimize marketing campaigns in real time.

Table 2 : Marketing Intelligence Induced Revenue

Field of Implementation	Revenue generation
Marketing and sales	44%
Corporate finance	37%
Supply chain management	39%
Manufacturing	43%
Risk	31%

(Source : Created by Author)

Machine learning is a subfield of artificial intelligence that focuses on the development of algorithms and models that can learn from data and make predictions or decisions without being explicitly programmed to do so. It is increasingly being used in marketing to automate processes, improve personalization, and to develop predictive models for customer segmentation and targeting.

Data Mining

Data mining is the process of extracting useful information from large datasets. It is used to identify patterns and correlations in data that can be used to understand customers and target them with tailored advertising and marketing messages.

Natural Language Processing

Natural language processing (NLP) is an AI technique that enables computers to understand human language. It is being used in marketing to analyse customer feedback and to develop personalized, natural-language conversations with customers (Bag et al.2021).

Robotic Process Automation

Robotic process automation (RPA) is a form of AI that automates tedious and repetitive tasks. It is being used by marketers to automate routine tasks such as data entry, data cleansing, and customer segmentation.

Personalized Ads

AI is being used to create more personalized ads that are targeted to an individual's needs and interests. AI-powered platforms can analyse the user's past interactions with ads and provide more relevant ads in the future.

Predictive Analytics

Predictive analytics is a type of AI that uses past data to predict future outcomes. It is being used in marketing to predict customer behaviour, identify potential customer segments, and develop targeted campaigns.

Sentiment Analysis

Sentiment analysis is a technique used to analyse customer emotions and opinions towards a product or service. This is done by collecting customer data and using machine learning algorithms to identify trends in customer sentiment. This can be used to measure customer satisfaction, identify areas of improvement, and tailor marketing campaigns to target specific customer needs.

Natural Language Processing

Natural language processing (NLP) is a technology used to apply natural language processing techniques to customer data in order to understand customer language and sentiment (Kumar et al. 2019). This can be used to identify customer intent and create more personalized marketing messages.

Predictive Analytics

Predictive analytics is a technology used to predict customer behaviour. This is done by analysing customer data to identify trends and patterns in customer behaviour. This can be used to create more targeted marketing campaigns and to personalize customer experiences.

Chatbots

Chatbots are artificial intelligence programs that are used to interact with customers. They are used to provide customer support, answer questions, and provide personalized recommendations (Kumar et al. 2019). This can be used to enhance customer engagement and increase customer loyalty.

Content Optimization

Content optimization is the process of optimizing content for search engines. This is done by using machine learning algorithms to identify customer intent and optimize content accordingly. This can be used to increase organic search traffic and improve website rankings.

Automated Decision-Making

Automated decision-making is one of the most important techniques used in intelligent marketing. This technique involves using algorithms, AI-powered systems, and machine learning to make decisions that are in line with the company's goals. This can include things like deciding which customers to target, which type of ad to display, and which type of content to produce. By using automated decision-making,

companies can reduce the amount of time spent on manual decision-making and improve their efficiency.

Personalization

Personalization is a key element of intelligent marketing. By leveraging AI-driven technologies and data analysis, marketers can create personalized experiences for customers. This includes things like personalized product recommendations, targeted ads, and customized content. By providing customers with personalized experiences, companies can increase customer loyalty and build stronger relationships.

Data Analytics

Data analytics is another important element of intelligent marketing. By leveraging data-driven insights, marketers can gain valuable insights into customer behavior, preferences, and interests. This data can be used to inform decisions on what type of content to produce, which customers to target, and how to optimize campaigns. By using data to inform decisions, companies can make more informed decisions and optimize their marketing efforts.

Chatbots

Chatbots are another important element of intelligent marketing. By leveraging AI-driven technologies, companies can create bots that can interact with customers in real-time. This can help improve customer service, provide personalized product recommendations, and even automate customer support. By utilizing chatbots, companies can reduce the amount of time and energy spent on customer service and focus more on developing relationships with customers.

STRATEGIES FOR IMPLEMENTING INTELLIGENT MARKETING

Data Collection and Analysis

Data collection is a key element of intelligent marketing. Through data collection, businesses can gather information about their target markets, allowing them to develop more effective marketing campaigns. Through data analysis, businesses can gain insights about their customers, enabling them to segment their audiences and target them more effectively.

AI-Powered Targeting

AI-powered targeting is a form of intelligent marketing that uses artificial intelligence to help marketers identify their target audiences (Hung and Rust 2021). AI-powered targeting can help marketers identify the best channels to reach their target audiences, as well as the most effective messages and content to use to reach them.

Personalization

Personalization is another form of intelligent marketing that uses AI to customize content to individual customers. AI-driven personalization can help marketers create more

targeted content that resonates with their customers and drives more conversions.

Content Automation

Content automation is an intelligent marketing technique that uses AI to automate content creation. Content automation can help businesses create more engaging content more quickly, allowing them to keep up with their customers' changing needs and preferences.

Analytics

Analytics is an important part of intelligent marketing, as it helps businesses track the performance of their campaigns and understand their customers' behaviour. AI-driven analytics can provide valuable insights about customer behaviour and preferences, allowing businesses to make more informed decisions about their marketing strategies.

Automated Targeting and Personalization

Intelligent marketing is the use of artificial intelligence (AI) principles and technologies to improve the effectiveness of advertising and marketing campaigns. AI can be used to identify customer segments, personalize content, optimize targeting, and even predict customer behaviour. AI can also help marketers to better understand customer preferences and identify new opportunities (De Bruyn et al. 2020). In addition, AI can be used to automate parts of the marketing process, such as segmentation and targeting, which can save time and increase efficiency. By leveraging AI, marketers can more effectively reach their target audiences and maximize their return on investment.

Intelligent marketing integrates artificial intelligence principles and techniques into the advertising and marketing process to increase the effectiveness of campaigns. AI-powered marketing tools can be used to generate insights, optimize campaigns, and personalize messaging. Automated targeting and personalization are two of the most common AI-powered marketing techniques that can be used to improve the efficiency and effectiveness of campaigns.

Automated targeting uses AI algorithms to identify target audiences and segment them into groups based on their interests, behaviours, and demographics. AI can also be used to analyse historical data to identify trends and create predictive models that can be used to target new audiences.

Personalization is a key component of AI-driven marketing. AI-powered personalization tools can analyse data from a variety of sources, such as customer purchases and browsing history, to create customized experiences for each customer (Lies 2019). AI can also be used to tailor messages and content to individual customers, providing them with a more engaging and personalized experience.

By combining AI-driven marketing techniques like automated targeting and personalization with traditional marketing strategies, businesses can create more effective campaigns and maximize their return on investment.

Automated Campaign Optimization

Automated campaign optimization is a process of using artificial intelligence (AI) principles and techniques to optimize marketing campaigns. Verma et al. (2021) AI-driven algorithms can be used to identify the best channels, optimize the frequency and timing of campaigns, determine the most effective messages, and quickly identify any issues or opportunities for improvement. AI can also be used to personalize campaigns to individual customers, ensuring that the right message is delivered at the right time and to the right people. Additionally, AI can be used to analyse customer behaviours and preferences to inform future campaigns. This helps marketers to deliver more relevant and effective campaigns that are better tailored to the needs and interests of potential customers.

Automated campaign optimization is the process of using artificial intelligence (AI) and machine learning (ML) techniques to optimize the performance of campaigns. AI and ML can be used to analyze customer data and behaviors, identify patterns, and extract meaningful insights that can be used to improve the effectiveness of campaigns. AI and ML can also be used to automate processes such as personalization, segmentation, and optimization of campaigns. Automated campaign optimization can make campaigns more effective by ensuring that they are tailored to the needs of the target audience and that they are delivering the desired results.

CHALLENGES OF IMPLEMENTING INTELLIGENT MARKETING

Data Privacy and Security

Data privacy and security is a critical component of intelligent marketing. As companies use more advanced technologies such as artificial intelligence to collect, store, and analyse customer data, there is an increased risk of data breaches and other security vulnerabilities. To ensure data privacy and security, companies need to implement a comprehensive data security plan that covers all aspects of the marketing process, from data collection to storage and analysis. This plan should include measures such as data encryption, access control, authentication, and regular risk assessments. Additionally, companies should ensure that they are compliant with all applicable data privacy laws and regulations. Lastly, companies should consider implementing data governance policies that outline how customer data is collected, stored, and used.

Data privacy and security is an important element of intelligent marketing. AI-driven marketing campaigns can collect, process, and analyse large amounts of customer data, which must be protected from malicious actors (Vlacic et al. 2021). Companies must ensure the security of customer data and use it responsibly, adhering to the principles of data privacy and security. Companies must also implement measures such as encryption and authentication to safeguard customer data. Companies should also be transparent and provide customers with information about how their data is

being used and stored. Additionally, companies should have a clear policy on how customer data is handled and how customers can opt out of providing their data. All of these measures will help ensure that customer data is secure and used responsibly.



Figure: Identified Challenges for Marketing Intelligence Implementation
(Source : Lies 2019)

Intelligent marketing can be used to integrate artificial intelligence principles and techniques into the advertising and marketing process, allowing for more personalized and targeted campaigns. AI can be used to collect and analyse large amounts of data, such as customer preferences, browsing behaviour, and purchase history, in order to create targeted campaigns tailored to the individual customer. AI can also be used to create predictive models that can help marketers better understand customer behaviour and preferences, enabling them to deliver more effective campaigns. At the same time, data privacy and security must be taken into consideration, as AI-driven marketing campaigns may require the collection of personal data. Companies must ensure they are following all applicable laws and regulations surrounding data privacy and security, including GDPR and the California Consumer Privacy Act.

Lack of Expertise

The use of artificial intelligence (AI) in marketing can be a powerful tool, but it can also be difficult to implement. AI requires a certain level of expertise in order to be used effectively. Without the right level of expertise, marketers may not be able to fully understand and utilize the techniques and principles of AI in their marketing efforts.

To address this challenge, marketers should partner with AI experts and invest in ongoing training and education programs. This will help marketers gain a better understanding of how to use AI in their marketing efforts, as well as help them stay up to date with the latest developments in the field. Additionally, marketers should consider hiring AI experts to help develop and implement AI-based marketing strategies.

In addition to investing in training and education, marketers should also focus on leveraging existing AI

technologies, such as natural language processing, machine learning, and sentiment analysis to gain a better understanding of their customers (Paul et al. 2021). By leveraging these technologies, marketers can gain a deeper understanding of customer needs and preferences and use this knowledge to create more targeted and effective marketing campaigns.

Finally, marketers should also consider leveraging AI to automate certain aspects of the marketing process. This can help marketers save time and resources, as well as improve campaign efficiency and effectiveness. By leveraging AI, marketers can optimize their campaigns and improve their return on investment.

Technology Limitations

1. **Limited Data Sets:** AI algorithms require large amounts of data to be effective, so if the data sets available to an organization are limited, they may not be able to benefit from AI.
2. **High Costs:** AI can be expensive to implement and maintain, which can be a challenge for smaller or cash-strapped businesses.
3. **Security & Privacy Issues:** AI can access and analyse large amounts of customer data, which can raise privacy and security concerns.
4. **Unforeseeable Effects:** AI can be unpredictable at times, so there is always the risk that it could cause unexpected or unintended consequences.
5. **Lack of Expertise:** AI is a complex technology, and organizations need skilled personnel to make the most of it. Finding and hiring the right talent can be difficult and expensive.
6. **Difficulty in Measuring Effectiveness:** Despite the potential for AI to provide insights and automate processes, it is still difficult to measure the effectiveness of AI-driven marketing and advertising campaigns. AI-driven campaigns rely on data, which can be difficult to obtain, analyse and measure. Without the proper data, it can be difficult to accurately evaluate the success of a campaign.
7. **Cost:** AI-driven marketing and advertising can be expensive to implement, especially for small and medium businesses. AI requires specialized software, hardware and personnel, which can be too costly for some businesses.
8. **Security and Privacy Issues:** AI-driven marketing and advertising campaigns may involve the use of sensitive customer data. This data can be vulnerable to security and privacy breaches, which can lead to legal and financial risks.
9. **Lack of Human Interaction:** AI-driven marketing and advertising campaigns may lack the human interaction that is necessary to build relationships with customers. AI may not be able to understand or respond to customers' emotions and needs, which can lead to unsatisfied customers.

CONCLUSION

The ultimate goal of integrating artificial intelligence (AI) principles and techniques into the advertising and marketing process is to create smarter, more efficient, and more effective marketing campaigns. By leveraging AI's ability to gather data, process it, and make predictions, marketers can better target their campaigns, increase their reach, and improve their effectiveness. AI can also help marketers create more personalized and customized messaging, making them more effective and allowing them to better engage with their audience. AI-powered marketing can also help improve ROI by helping marketers better predict customer behaviour and optimize their campaigns accordingly. By utilizing the power of AI, marketers can create smarter, more efficient, and more effective campaigns to reach their target audience and help grow their businesses.

Summary of Intelligent Marketing

Intelligent Marketing is the process of integrating artificial intelligence (AI) principles and techniques into the advertising and marketing process. This involves using AI to automate processes, generate insights, and provide more personalized experiences to customers. AI can be used to analyse customer data, monitor online conversations, and optimize campaigns for better results. AI can also be used to gather customer feedback and identify trends that might otherwise be overlooked. This can lead to more efficient and effective marketing campaigns, and increased customer satisfaction. In addition, AI-driven marketing can improve the overall customer experience, leading to a more positive brand image and increased loyalty.

Future of Intelligent Marketing

The future of intelligent marketing is looking incredibly bright. With the development of artificial intelligence (AI) and machine learning, intelligent marketing is becoming increasingly more accessible and effective. AI can help marketers make smarter decisions, such as targeting the right customers, personalizing content, and optimizing campaigns. It can also allow marketers to automate tasks and measure performance more efficiently, leading to improved ROI. Additionally, AI can help with predicting customer behaviors and trends, as well as provide more accurate insights into customer sentiment and sentiment analysis. This can help marketers to identify opportunities faster and more accurately, leading to more successful campaigns.

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