



Artificial Intelligence in Digital Marketing

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Abstract

There are many of advantages of digital marketing which enables businesses to reach customers at low cost over traditional marketing. Digital marketing is growing business all over the world. In marketing AI is a more intelligent search's engine, personalization, chatbots, programmatic advertising, creating and making content, web designing, email marketing campaigns, prediction of customer behavior etc. Artificial intelligence makes businesses to gain an accurate and precise understanding of every customer's needs and also enhancing their sales and profits. This paper focuses on the areas of artificial intelligence in digital marketing world and its impact on artificial intelligence in digital marketing world. Artificial intelligence enables digital businesses to gain a clear and accurate understanding of all the customers' needs, enhancing their sales and revenues.

Keywords: Digital Marketing, Artificial Intelligence, AI, Marketing, chatbots, AI tools

Article Status

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Available online :

1. Introduction

Artificial intelligence is revolutionizing digital marketing, enabling businesses to engage with customers in new ways. By analysing large volumes of data and identifying patterns, AI allows companies to develop personalized content, optimize advertising campaigns, improve customer experiences, and enhance overall marketing effectiveness [1]. This paper reviews recent studies on the role and impact of AI in digital marketing, covering key applications like chatbots and recommendation engines as well as benefits and challenges.

Artificial intelligence is a technology that enable computers and machines as intellectual as humans that are able to perform activity similar to the human brain. In current scenario technology advances also, the artificial intelligence is being used in almost every aspect of life. It has been used a lot with digital marketing to make it easy for the businesses reach to reach the consumer at the right time. vendors can process large amounts of information, validate customers expectation. It has been that ensure customer satisfaction with the help of AI" (Jain & Aggarwal, 2020). The use of the internet in India is increasing rapidly, which opens new opportunities for business growth.

2. Artificial Intelligence and the Digital Marketing

AI is present in the daily lives of the humans and businesses, for example voice recognition, image recognition and handwriting suggestions available on today's smartphones [2]. In order to deepen understanding of consumer decision-making, there are

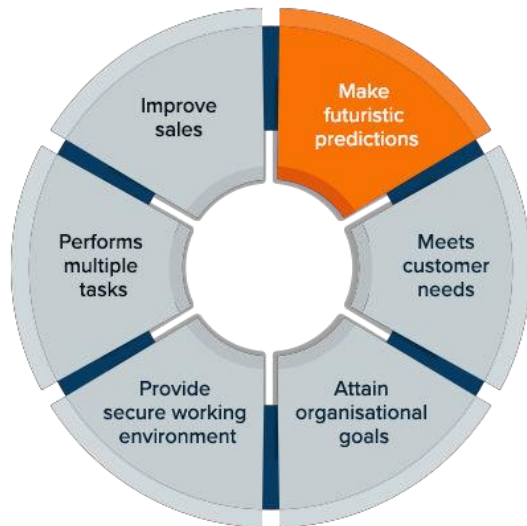
very useful AI systems for marketers [3], of which the following points are highlighted.

2.1 Artificial Intelligence

Artificial Intelligence is computerized system that capture data to perform tasks of intelligent beings in order to maximize their chances of success [4]. Strong AI (Artificial General Intelligence) is a machine with consciousness, and the machine has intelligence in many specific areas. Weak AI (Narrow AI) focuses on specific tasks [5]. When we look at investment in all sectors of the market, there will be an investment of over 100 billion per year in AI in 2025, while in 2015 only 2 billion was spent. Consumer industries, such as retail and high technology, see more potential in AI applications in marketing and sales because of the frequent, digital interactions between companies and customers generate that gives larger datasets for AI methods.

2.2 Natural Language Processing

NLP Natural Language Processing (NLP) enables AI systems to analyze the problems of human language to get meaning, among others, from different blog entries, item reviews, many of daily tweets, Facebook posts, etc. Swedbank, a Swedish bank, uses a virtual assistant with NLP to answer all the customer queries on its website's home page, so that the customer service employees to focus more on sales without sacrificing service [3].



Figure

2.3 Image and Voice Recognition

Image recognition helps business understand images and videos that people share on social media networks and show consumer behavior. Consumers identify details about the offering's pictures in the image, and business benefit from the details of consumption.

Speech recognition allows Artificial Intelligence to analyze the meaning of the words that are produced.

2.4 Problem Solving and Reasoning

Marketers implement AI to understand hidden insights into consumer-generated content, narrowly defining the problem they want to solve and how they will approach data analysis. These major processes generate pattern detection in the data, and thus improving the ability to predict future behavior. Marketers may want to AI-based profiles derived from consumer analysis may be relevant to future marketing decisions.

2.5 Machine Learning

Machine learning is a subgroup of AI that uses computer programs to learn and improve throughout experiments, processing large amounts of data. It is the fastest form of AI and is the primary and major source in the AI industry for business. By detecting patterns in data, machine learning systems can reason and propose the best options for the required consumer needs, more efficiently than human beings. The system remembers everything that was previously calculated, by storing all memories in a knowledge base and uses machine learning algorithms to learn from your previous experiences and problem solving (Big Data) problems. The more unstructured data a machine learning system processes, the better and more insightful positive results are obtained for business.

3. Applications of AI in Digital Marketing

3.1 Personalized Advertising:

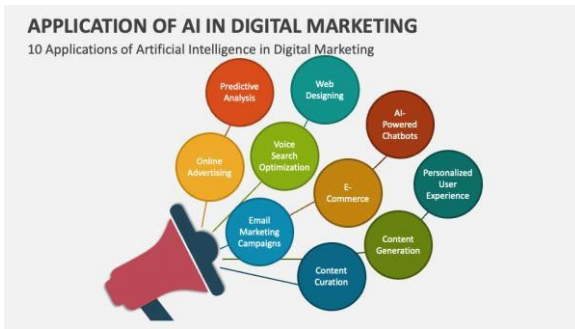
Digital marketing is not an exception to how AI has revolutionized other industries. According to Estrada-Jiménez et al. (2016), personalized advertising consists of offers that are made specifically for each individual client and positioned next to the website's content so that they blend in with the website the customer is viewing. Using personalized advertising, businesses may reach customers with pertinent offers (Jung, 2017). AI-powered recommendation systems leverage machine learning algorithms to deliver personalized consumer advertisements (Li et al., 2020). These systems analyze user behavior data to understand individual preferences and serve relevant ads that are more likely to convert into sales. Personalized advertising not only enhances user experience but also increases conversion rates for businesses.

3.2 Content Creation:

Gagnon (2014) advises "show what you know" when creating content to advertise one's business and its goods or services. The development of content that educates the audience about what the organization "knows" should be a part of any company's strategy. According to Gagnon (2014), "know" refers to "improving organizational knowledge," which should be useful, entertaining, and competitively relevant. It should enable the content to stay in the thoughts of the viewers so that they return to the business to fulfil their needs (Ibid). AI technologies such as natural language processing (NLP) have made significant advancements in generating high-quality content automatically (Gupta and Agrawal, 2019). Chatbots powered by NLP can engage with customers in real-time conversations while providing accurate information or resolving queries. Additionally, AI-driven content creation tools assist marketers in generating blog posts, social media updates, and email newsletters efficiently.

3.3 Chatbots:

In digital marketing platforms, chatbots are AI-powered computer programmers that give clients advice on how to streamline human engagement and enable conversational queries in natural language (Chopra, 2020). In addition to being used for discussion, chatbots are also used by professionals in regulated fields like doctors and lawyers. In addition to other human rights concerns, taxonomy, civic responsibility, consumer protection, cyber security, privacy and data protection, and intellectual property rights (IPR) are all taken into account (Leaua and Didu, 2021)



3.4 Data Analysis:

Because AI algorithms can process and analyze massive amounts of data in real time, they allow marketers to get insightful knowledge about the behavior and preferences of their customers (Bughin et al., 2018). By leveraging AI powered data analysis, marketers can gain a competitive edge in understanding customer preferences and effectively targeting their marketing efforts.

3.5 Web Design

Website can be made using grids, that uses Artificial Intelligence without the help of programmer to do the work for you based on the information provided like text, images, calls-to-action, etc. they can make the website look more professional in less time and at reasonable price.

3.6 Email Marketing:

Brands are customizing emails to reach their target audience with the power of AI. They can personalize the content of the mail based on customer behavior and preferences. Machine learning or automatic learning can now determine the perfect time and days of the week to mail the user, the recommended frequency through analyzing millions of data every time. Now they can just understand which content catches most of the attention of the users and which subject and titles get more clicks.

4.Future Artificial Intelligence on Digital Marketing:

In future, businesses can expect these following impacts from artificial intelligence on digital marketing

4.1 Smarter searches:

- Analyzing user behavior and preferences to display personalized search results and recommendations. This technique is used by Netflix, Amazon, YouTube etc.
- Optimizing search relevance through natural language processing to better interpret search intent.
- Generating search query suggestions based on real-time search trends and individual user history.

4.2 Smarter Ads:

- Automated optimization of targeting parameters and bidding strategies based on real-time performance data. Improves campaign efficiency.

- AI-powered creative optimization testing different ad combinations to determine most effective creative. Improves engagement.

- Leveraging predictive analytics to anticipate customer needs and deliver proactive promotions via ads. Increases conversions.

4.3 Relying on Bots:

- Chatbots provide personalized recommendations and guide users through the sales funnel with tailored questions.

- Marketing bots automate repetitive tasks like ad testing, lead scoring, email scheduling. Saves time and money.

- AI bots can generate ad copy in multiple languages using machine translation. Helps scale multilingual campaigns.

4.4 Continuous Learning:

- As AI ingests more data on customer interactions over time, its recommendations and predictions continuously improve in accuracy.

- Continuous learning allows AI to keep up with rapidly changing trends and data patterns. Keeps marketing strategies relevant.

- It enables hyper-personalization at scale by refining audience segmentation and messaging based on updated data. In summary, AI is transforming digital marketing through smarter searches, ads, bots and its ability to learn continuously. Companies need to embrace these technologies to gain a competitive advantage and provide superior customer experiences. Though AI capabilities will continue to rapidly advance, striking the right balance between human creativity and AI-powered solutions will be key.

Conclusion:

Artificial Intelligence can predict human behavior and identify and take care of the most valuable leads. AI will help advertiser to maximize their strategic and creative potential. They should understand the importance of current trends of AI in marketing. It has been found that majority of the marketers have implemented AI for content personalization and predictive analysis for customer insights. In Email marketing AI has been used to generate revenue followed by to improve click through rate. As per the report of Howarth, more than 30% of the companies have started implementing AI in business.

AI is transforming digital marketing by enabling hyper-personalization, predictive analytics, workflow automation, and superior customer experiences. Over

the next decade, AI will become even more sophisticated at engaging customers and optimizing business outcomes, while needing to address important ethical considerations on its ongoing development and use.

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