

Artificial Intelligence (AI) is transforming the future of Digital Marketing

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Abstract - This study identifies and explains the relationships between the two distinct fields of computer science and marketing science. It investigates the relationship between artificial intelligence (AI) and digital marketing in academia while simultaneously presenting a machine learning model that could fit in various areas of the scientific field of digital marketing. There are a ton of academic papers on artificial intelligence (AI) from several areas. Regarding features of digital marketing, this number is still minimal. Artificial intelligence (AI) research could be useful for marketing science in multiple ways. The majority of scientific research focuses on general topics like e-business, consumer behavior, e-commerce strategies, social media advertising, search engines, and consumer predictive modeling to stay away from being more connected to niche marketing issues like consumer behavior on social media, chatbots, social media marketing, conversion optimization, targeted advertising, predictive models in online purchases, etc. It appears that there aren't enough scholarly articles on digital marketing and artificial intelligence in particular, despite the broad field of study. Nevertheless, there have been some promising and in-depth research efforts on specific digital marketing issues and artificial intelligence (AI). This paper through the mapping of the current state of artificial intelligence (AI) applications on digital marketing scientific area, it further elaborates how AI can transform the shape of digital marketing in future.

Keywords: AI, Artificial Intelligence, Decision Making, Digital Marketing, Future of Marketing, Marketing

I. INTRODUCTION

Different artificial intelligence (AI) approaches are rapidly revolutionizing today's digital marketing practices. Because of the expansion of big data and advances in computing power, it has become essential to include AI into every business operations and functional units [1]. The rise of digital marketing as an industry results from the combination of big data and academic research on intelligent systems. Digital marketing has enabled organization to target customers more preciously and with the help of AI organization can now effectively target their clients with personalized digital messages [2]. For digital marketers, artificial intelligence is transforming the customer experience. With the help of artificial intelligence, digital marketing is becoming more effective in optimizing the user experience. The level of customer satisfaction is being increased due to artificial intelligence. AI is modifying the approaches to digital marketing to maximize client satisfaction.

There has always been artificial intelligence computing, and it will continue to exist. Future marketing initiatives must include the development and advancement of artificial intelligence. Businesses use artificial intelligence software on a daily basis to streamline operations, cut costs, speed up turnaround, and increase output. Teams that have already migrated to marketing AI software are at a great advantage to grasp the next innovation as technology is developing at an unparalleled rate.

II. DIGITAL MARKETING

Through the use of the internet, digital marketing is capable of transforming consumer perceptions and increase online sales. Consumers now have the ability to express themselves and voice their opinions, providing them both the power of decision-making and influence. All marketing strategies and techniques that use an electronic device or the internet to display, advertise, or sell goods or services are considered to be part of digital marketing. Businesses use online channels to further their goals through digital marketing. Users can search for information, products, or services, and brands can communicate with customers in real time. Businesses are capable of expanding their customer bases because of digital marketing. People who work in the digital marketing sector can adjust the information to be more user-friendly and human-centric because to its customized use. Digital marketing has benefited both businesses and customers equally.

Email, websites, social media pages, targeted marketing, and targeted advertisements all help to attract new clients. Some of the key factors that influence decision-making include customers, resellers, competitors, suppliers, promoters, the overall state of the economy, positioning, segmentation, expansion, growth, products, brands, advertising, market share, price, advertising expenditures, the number of resellers, churn, customer value, etc. [3]

III. ARTIFICIAL INTELLIGENCE

The term "artificial intelligence" is becoming more and more common, yet there isn't a single, clear definition for it. It is the process of giving machines intelligence, and intelligence is the trait that allows an object to behave appropriately and strategically in relation to its surroundings. In terms of technology, artificial intelligence is the process of integrating cloud computing, network devices, robotics, computers, and in the creation of digital content as well as in wide range of business processes, systems, and day-to-day activities. There has always been artificial intelligence computers in past, and it will continue to exist in future as well. Accepting the expansion and advancement of artificial intelligence is important for next marketing initiatives. Each day, businesses are utilizing computer programs with artificial intelligence to enhance their procedures, cut costs, speed up turnaround times, and enhance output.

In tandem with the growth of digital marketing, the increased prevalence of mobile devices and internet technologies has contributed to the rapid growth of AI [2]. While Hayes-Roth (1995) [4] defines AI as the "reasoning to interpret perceptions, solve problems, and draw inferences and determinations," Russell and Norvig (1995) [5] define AI as "anything that can be viewed as perceiving its environment through sensors and acting upon that environment through effectors". The development of AI has benefited a number of customer groups. AI has drastically changed the B2B sales funnel and traditional human-centric sales procedures in business markets [6].

THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE (AI) AND DIGITAL MARKETING

Knowledge representation, search, perception, and inference are all aspects of artificial intelligence (AI). Artificial intelligence (AI) needs to specify and read the data in formats that will allow for representation and processing in order to provide results. This can be accomplished by search and inference. To get the best answers, search engines must use advanced search algorithms. Then conclusions are reached for each circumstance. The process by which artificial intelligence (AI) leads to decision-making begins with the selection of the data, continues with pre-processing the data, then moves on to data transformation, data mining plays a crucial role in the entire process, and ends with outcomes evaluation. It's a high time for digital marketers to update the theories that have characterized marketing for the past 50 years due to unprecedented and quick changes in demographics and disruptive technologies that are emerging all over the world [7]. Traditional marketing strategies have faced criticism, and many believe that digital marketing is more appropriate for the modern business landscape [8].

To navigate a world that is becoming more and more virtual, marketing researchers have proposed the theoretical framework of "digital surrealism" [9]. The term "digital marketing" is now used to describe the implementation of

digital technologies throughout the entire marketing process for acquiring and retaining customers, building brands, and managing customer relationships, rather than just referring to digital channels [10, 11]. Digital marketing is essentially "an adaptable, technology-enabled process by which organizations engage with customers and partners to jointly create, convey, deliver, and sustain value for all stakeholders" [10]. Researchers and marketers must take into account the gaps between theories of digital marketing and actual, in-the-field operations and work to eliminate them.

The impact of artificial intelligence on digital marketing and how it improves consumer experiences across different industries was discussed by Mohannad Abu Daqar & Ahmad [12]. Customers' digital experiences are influenced by the telecommunications provider, banks, search engines, and many other potential businesses. The improved client services, sale-purchase assistance, and efficient corporate management techniques made possible by artificial intelligence which have a direct impact on digitization. The increase in online booking frequency focusing on customer support and services, after-sale support using technological innovations, the use of social media to boost the business, the promotion of small businesses on various social media sites, and the promotion of products through online advertisements are some visible impact of digitalization

The research of Stone focuses on how marketing techniques have evolved to reach target consumers employing a variety of technologies in company planning strategies while also maximizing the outcome of great customer experiences. Using computational aspects like data sets and the viability of the business project, artificial intelligence is increasingly being used in business models and digital user interfaces [13].

In marketing, artificial intelligence is a frequent topic. It is regarded as marketing's newest frontier. The phrase "artificial intelligence" is broad and has been used to describe many different types of technologies. Artificial intelligence is a term used to describe technology that aims to imitate human intelligence. A wide range of skills, including voice, picture recognition, machine learning, and semantic searching, are all part of artificial intelligence. Marketers enjoy waxing poetic about innovative, modern technologies. For speech and picture recognition, they leverage artificial intelligence. Additionally, it aids in the targeting of drones at rural populations and stops data leaks in marketing. Outbound or traditional marketing strategies are no longer as effective as they previously were at acquiring and keeping customers.

In a continuously connected, real-time environment where marketers must provide ongoing, tailored, insight-driven engagements with clients on an individual basis, artificial intelligence is crucial to gaining a lasting competitive advantage. Brands that have embraced AI and put the proper systems in place to scale up are effective in establishing a competitive edge that is very challenging to match. Artificial

intelligence is not about technology; rather, it is about providing the ideal blend of content and context.

Artificial intelligence is currently used in a wide range of consumer and commercial applications, from Apple's Siri to Google's DeepMind. For instance, Siri interprets voice commands using natural language processing (NLP) and responds appropriately. On the other side, deep learning is used by Google's DeepMind. Without relying on established behavioral algorithms, it is able to draw connections and derive interpretations by using raw data as inputs and learning from experience. In reality, Google was able to increase the effectiveness of its own data centers by implementing DeepMind's discoveries, which resulted in a 40% reduction in the energy required for cooling.

APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) IN DIGITAL MARKETING

Every area of our everyday professions is undergoing change due to artificial intelligence. This will transform everything from how marketers execute their marketing campaigns to how those campaigns are managed and measured. How digital marketing is done now and in the future will be determined by artificial intelligence. The landscape of digital marketing has changed in the ways listed below because of artificial intelligence technologies.

1. Marketing Increasingly Focused on Consumer Behavior

Artificial intelligence is implemented to some extent to combine data from many platforms. Artificial intelligence is all about data-driven methods to marketing and decision making. When users interact online, pieces of personal information are left behind. Data is gathered at each stage, whether the user is browsing, posting, or shopping.

Artificial intelligence programs are currently processing these enormous amounts of data to learn about users' "online behavior" and "digital identity." These days, platforms gather and store a wide variety of statistics as part of studying customer behavior to create automated systems and customer profiles to target specific markets.

2. Target Audience

Large volumes of individual-level data from online user behaviors, including searches, reviews, social media interactions, and other online interactions, are collected, aggregated, and analyzed by businesses with the help artificial intelligence (AI) [10, 14].

This enables marketers to have a better understanding of their target market and consumers' buying habits. Such in-depth, real-time insights about customer demands and desires subsequently help organizations make data-driven decisions more accurately and provide each client with a uniquely tailored experience [15, 16].

3. Predictive Marketing

Social media is essential in assisting marketers create targeted campaigns by helping them learn more personal information about potential customers. Every time a person clicks while online, fresh data is gathered and compiled for the analysis by artificial intelligence. The marketer can use this data to enhance the material and deliver the most important information.

4. Personalized Content

Based on such a thorough understanding of client behavior, AI's capacity for learning enables it to provide more inventive and relevant content that is tailored to each individual customer (Kumar et al., 2019), such as adverts, social media postings, direct marketing materials, etc. [17]. In order to influence a customer's purchasing decisions, automated digital marketing campaigns can be launched based on the customer's lifestyle preferences, past purchases, or browsing habits.

5. Lead Generation

Based on the data it already has and the program it's utilizing, artificial intelligence actually sorts through enormous amounts of information to identify the ideal clients, customers, and even coworkers. It can also forecast or measure how hot a specific lead is, which is even more intriguing. This can therefore save a lot of time and effort on just simple searching for B2B or even recruiting purposes, giving the marketer more time for activities like pitching and sales calls.

6. Chatbots

Artificial intelligence-powered systems called chatbots engage with users in a natural-language setting. As more social media traffic moves to private messaging platforms like WhatsApp and Facebook Messenger, these programs are quickly growing into a key area of interest for digital marketers. It would be difficult to overlook the opportunity to interact. The majority of digital marketers view chatbots as a tool to scale up personalized customer support, which is marginally tied to marketing but not specifically a marketing role. Chatbots assist users in navigating the customer path to a sale.

7. Content Delivery

The last stage of digital communication is to discreetly deliver personalized messages to the target audience. AI can decide the best channels for displaying offers and information for each user type based on client locations, demographics, online engagement behaviors, etc. [12, 18, 19]. The best time, day, and required frequency for sending a direct marketing email, posting a post on social media, or programmatically purchasing advertising spaces can all be determined by AI using customer insights. In the area of digital and marketing, artificial intelligence (AI) enables companies to provide value across many channels of the

consumer connection while also making appropriate and applicable judgments [19].

LACK OF ARTIFICIAL INTELLIGENCE (AI) ON DIGITAL MARKETING RESEARCH

Academic researchers preferred to be hired by businesses over staying in universities or research centers as a result of businesses' need for expert labor growing over the past few years. AI has inevitably spread outside of academia and into technological products since AI research in the corporate sector is considerably more developed. Another major issue is that scientists lack data, although the business sector is able to collect and store billions of bytes of data every day, which is sufficient to enable them to conduct their own research. In contrast, researchers working on artificial intelligence (AI) have just a little quantity of data to evolve their models. eMarketer.com reports that marketing professionals have trouble defining artificial intelligence (AI). They frequently refer to data analysis, smart systems, user profiling, and keyword searches as "artificial intelligence" instead of "machine learning," "data mining," or "predictive modeling." On the other hand, the lack of marketing expertise among computer scientists and IT engineers.

MAJOR ISSUES AND CHALLENGES OF AI AND DIGITAL MARKETING

Although AI is expanding the realm of marketing, it also has significant drawbacks. Because of artificial intelligence, when we open social media sites like Facebook or Instagram, we frequently encounter items that we have discussed with someone, have seen somewhere and wanted to buy, or are contemplating when they suddenly appear in front of us. But how? This implies that the data was analyzed using AI methods, but did we supply the data? No, privacy is the biggest issue in this situation. Customers' data is being utilized without their knowledge or permission, which could lead to problems down the road if they become aware of the implications of data privacy [20]. "Many businesses have found it difficult to attract customers and connect with today's tech-savvy audience, but employing the correct marketing strategy can help address these difficulties." 2020 (QINDIA) Because AI offers individualized experiences based on data analysis, it is growing in popularity. According to research, digital marketing might backfire if done incorrectly. For businesses to offer effective AI-based digital marketing, they may need to invest in expensive IT infrastructure, which presents a problem for digital agencies attempting to use artificial intelligence. Insufficient or poor quality data might provide a barrier for businesses because artificial intelligence requires accurate and high quality data to give effective insights [21]. Given that AI-based digital marketing is a new technology, the skills needed may not be sufficient. This presents a challenge for the firm's human resource.

IV. CONCLUSION

This study demonstrated the adaptability of artificial intelligence (AI) in daily life. It is a strong area of computer science that has applications in every subject and can be helpful to some people while being harmful to others. As a result of technology, large data, and competitiveness, autonomous AI agents powered by machine learning techniques will expand in every area of business and marketing during the following decades. In order to address new substantive concerns in the area, increase understanding of businesses and customers, and develop scalable and automated decision support skills that will be crucial to business managers, academic research must make full use of the rich digital information available. From a traditional paper based banner to use of digital media for business, marketing and marketing strategy has changed a lot and with the evolution of artificial intelligence the way of marketing will transform in future. AI can increase client personalization and precision in ways that weren't previously possible by assisting marketers with data collection, the discovery of new customer categories, and the development of a more integrated marketing and analytics system.

As a result, there must be groups that work to keep artificial intelligence (AI) research primarily academic and away from private endeavors. Digital marketing issues are successfully resolved using artificial intelligence (AI). Digital marketing success now depends on good data administration and processing, individualized content, targeted audiences, adaptive services, and appropriate timing because of the involvement of artificial intelligence (AI). Data assist businesses in marketing their goods by ensuring that the right people are reached at the right moment, in the right language, and with the right message. High revenues are achieved by marketers. Businesses either spend money on research institutions to supply them with apps or they construct internal research facilities to improve digital marketing strategies. Customers appreciate high-quality experiences, services, and content.

Digital marketing generates revenues out of thin air and moves at a more dynamic speed than ever before. Additionally, there are several other advantages of using artificial intelligence (AI) in marketing. Which reflects that the artificial intelligence (AI) is the future of digital marketing.

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