



Adoption and application of Artificial Intelligence tools in marketing strategies

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ABSTRACT

Information technology has shown significant advancement in the last decade. Traditional mass media advertising has been witnessing a shrink due to the internet revolution and digital marketing. The new-age information technology has implemented innovative ways of customization, marketing automation, viral marketing, voice recognition, lead generation, neuromarketing, and conversion optimization, through the use of artificial intelligence. Through a systematic analysis of relevant journals and research articles, this paper aims to review artificial intelligence tools and their impact on marketing activities. This is accomplished by studying the insights provided by relevant literature in the most significant scholarly journals published between 2012 and 2022, and then presenting the research findings through a conceptual framework and methodology design. In today's competitive world, artificial intelligence has become an important part of business activities. The paper gives a detailed description of the various applications of artificial intelligence tools across marketing activities and decision-making, and how organizations are creating opportunities, building on existing goals, and growing rapidly by using artificial intelligence tools. Further, a background and definition of all the processes where artificial intelligence is implemented in marketing activities are also included for a better understanding of the last decade's developments and the future scope of artificial intelligence in marketing activities.

Keywords: *Artificial intelligence, Marketing, Automation, Information technology, Big data, Decision-making, Consumer behavior*

INTRODUCTION

The internet revolution 2.0 and exposure to new technologies have transformed the traditional mass media advertising processes of companies. Organizations are now replacing traditional methods with the latest and target-specific digital marketing tactics through the systematic use of artificial intelligence. Also, these technological advances have changed consumer behavior and are accordingly influencing business plans, particularly activities related to marketing and communications. Therefore, using artificial intelligence in marketing activities has become a ubiquitous part of the business world since the mid-2000s (Pan, 2016). Rust (2020) says that companies who have adopted artificial intelligence at an early stage in deciding their marketing strategies have a huge advantage over businesses who have implemented it at a later stage. This paper aims to study contemporary artificial intelligence tools, their adoption by organizations,

their applications, effects, and developments in marketing activities as well as decision-making in companies. Unfortunately, the published literature regarding the connection between artificial intelligence and marketing activities, and their influence and impact on each other is inadequate.

However, notwithstanding the lack of literature, this paper intends to review the relationship between marketing and artificial intelligence through a literature review by examining reputed articles published between 2012-2022 and demonstrate the scope of artificial intelligence and its penetration and expansion in marketing activities in the coming decade. The methodology of the review focuses on studying relevant published articles and journals on artificial intelligence tools applied in recent marketing activities and fostering research and development on artificial intelligence to have a diverse knowledge base.

LITERATURE REVIEW

2.1 Conceptual underpinning of Artificial Intelligence

The term 'Artificial intelligence' was coined by John Mc Carthy in 1956 in his work entitled Dartmouth Summer Research Project, which represented a connection between machines that are capable of thinking and behaving, and could imitate the thinking and decision-making capacity of humans (Ma and Sun, 2020). Further, artificial intelligence can be also referred to as a collaborative process between computers, network devices, cloud computing, and digital content production in organizations. Schweyer (2018), states that artificial intelligence is of three types: Artificial Narrow Intelligence, Artificial General Intelligence, and Super-intelligent Artificial Intelligence. This can be defined as weak, strong, and extremely strong forms of artificial intelligence respectively. The growing role and expansion of Artificial Intelligence are vital in decision-making by an organization, for example, tech giants like Google DeepMind, and Amazon uses weak forms of artificial intelligence to improve their processes, reduce the turnaround time, and enhance their productivity Saura (2021).

On the other hand, marketing activities conducted through voice and visual recognition, robotics, language processing, intelligent computing, and so on are strong types of artificial intelligence (Allen, 2020). Paul and Criado (2020) describe artificial intelligence as a technology that leverages self-learning techniques by utilizing tools such as big data, data mining, natural language processing, and recognition of patterns. Therefore, artificial intelligence is not only scalable, but it saves time and expenses when implemented in the decision-making of marketing activities.

The present global business environment is highly competitive and requires constant innovation. The current knowledge base will be considered outdated even with a slight upgradation of technology, thus indicating newer models and processes in marketing. Through implementing artificial intelligence and engaging specialists in areas like social media, lead generation, personalization of customer experiences, tracking customer behavior, conducting market research, and others, organizations can thrive in this competitive market (Sterne, 2017). For example, Salesforce (Customer relationship management software) has started to provide artificial intelligence services to execute CRM solutions.

2.2 Understanding different stages of artificial intelligence application

Big and even medium-scale industries are implementing artificial intelligence tools in decision-making and driving marketing strategies to achieve their goals (Zhang et al., 2020). With the emergence of big data and data processing systems, businesses are capable to implement targeted and effective decisions in marketing activities, especially when working on real-time marketing activities (Araujo et. Al., 2020). Companies, thus emphasize faster developments of these technologies to create breakthroughs in value creation (Smith and Anderson, 2014).

Additionally, artificial Intelligence is an important tool to have a sustainable as well as competitive lead in the global market. It is usually used to meet the demands where marketing actions are vital to conducting personalized, insightful communication with customers. Allen (2020) asserted that marketing experts have to ingeniously include customer segments in comprehending the advantages of artificial intelligence. Here we can highlight the 5Ps of marketing as stated by Khan (2014) and focus on how marketing can benefit from these stages through the implementation of artificial intelligence, they are - planning, production, personalization, promotion, and performance.

Planning	Production	Personalization (Price)	Promotion (Brand)	Performance (Sales and distribution)
<ul style="list-style-type: none"> - Research prior to new product development 	<ul style="list-style-type: none"> - Automatic suggestions - Generating additional value and solutions 	<ul style="list-style-type: none"> - Cost management of the product - Dynamic pricing as per customization 	<ul style="list-style-type: none"> - Designing a unique product experience - Customized communication with consumers 	<ul style="list-style-type: none"> - Easy shopping through quick and simple sales process - 24/7 customer service (chatbots)

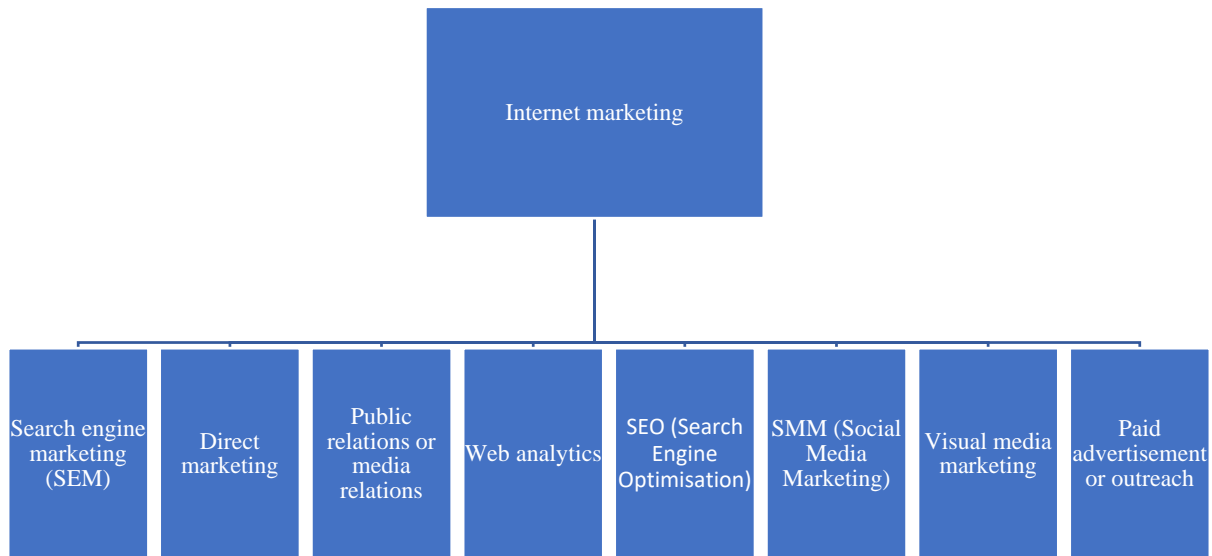
Table 1: Depict the marketing strategies with AI implementation (Khan, 2014)

Thus, marketing departments across businesses have changed a lot, especially in the last decade due to the digitalization of many activities. As inspired by Saura (2021), online or more popularly referred to as internet marketing can be said to have 8 primary pillars as shown in

the

figure

below:



Marketing professionals now use artificial intelligence in marketing activity automation (internal and external), improvement of accuracy in decision-making, and reduction of human efforts at various levels (Demirkan and Delen, 2013). Also, with big data analytics and data mining, organizations are constantly trying to remain updated and adopt digital perspectives in understanding consumer behavior. Using these perspectives, companies are achieving their objectives by optimizing their websites, increasing user traffic to a product or service, popularizing their product or service on the network, and driving promotion and sales effectively (Martínez et. al., 2013).

2.3 Methodical review of the use of artificial intelligence in marketing activities

To provide an overview of artificial intelligence applications associated with possible trends in marketing strategies and tasks, a systematic, interdisciplinary literature review is conducted in this paper as suggested by Gusenbauer and Haddaway (2020). The review primarily refers to the significance of artificial intelligence in and for marketing activities. It focuses on important articles from esteemed journals. However, an overall framework of artificial intelligence tools and their strategic usage in and for marketing and decision-making by organizations is inadequate. The existing literature review mostly focuses on artificial intelligence technology, Big Data, Marketing, artificial intelligence's effect on social media platforms, personalization, and predictions in the next ten years. That is why this paper precisely considered journals by Scopus, Science Direct, and Google Scholar database for the most impact. Additionally, to provide an interdisciplinary angle, the review has considered knowledgeable articles focusing on marketing and artificial intelligence from conference papers and web sources. The investigated time of all the published papers is between 2012-2022. The review did not consider

journals that had been published before 2012 as it wanted to focus on the last decade's developments in the field of artificial intelligence. Evaluation of diverse scientific sources helped in answering the research question about the present artificial intelligence tools used in marketing and ways to foster research and advances in the field.

RESULTS

3.1 Deployment of Artificial Intelligence tools in marketing

As per Tong et al. (2020), earlier forms of marketing and advertising are losing their appeal to target-specific marketing strategies. The activities concerning marketing use technology that is driven by a sub-section of artificial intelligence, and it can send customized messages, emails, texts, and videos, to numerous consumers after considering their data within a few seconds. These expert systems provide marketing professionals to attend to clients more competently and individually. As a consequence of this personalization of marketing activities, huge amounts of data collection have become an important part of industries. Also, this data collection forms the foundation of other processes like labeling and deep learning. Labeling is the process by which a human runs the data and guides the machine on how to classify data according to the set parameters (Verma et al., 2021). Artificial intelligence's huge potential for learning and information gathering helps organizations unceasingly work on newer ways to support and utilize their data (Singh et al., 2019). This collected data can also be used in static image recognition, cataloging, and labeling; algorithmic trading plan performance progression; content circulation on social media platforms, and predictive maintenance.

The algorithms are programmed to recognize trends and patterns in the data. The mechanism then studies and accepts the practices accordingly. These technologies can be functional in automating processes and experimenting with solutions and making forecasts about results that lead the performance enhancement (Stone et al., 2020). On the other hand, data mining refers to the method of working through big data and investigating it for patterns (Davenport et al., 2019). Other influential artificial intelligence technologies are deep learning and machine learning, which allow businesses to convert a massive quantity of data into valuable information. They provide a non-linear prediction resolution that is usually based on correlation analysis and regression (Stone et al., 2020; Verma et al., 2021). Artificial intelligence tools can be used for marketing activities such as profiling, analytics, robotics and expansion of tasks, multichannel marketing, customization, and predicting, in addition to decision-making developments.

Davenport et al. (2019), highlight that artificial intelligence, nowadays is widely used to expand consumer interaction using digital media channels, along with data-driven marketing, and individual-oriented and multichannel marketing strategies. Data-Driven Marketing is a combination of big data analysis with artificial intelligence to comprehend consumer behavior and improve the current marketing campaigns. This also makes real-time communication and discussion with customers, accept immediate feedback on present actions, and offers a precise data-based forecast about future performances (Batinca and Treleaven, 2015), for example, an analysis of the positive or negative impact of a brand's activity and its related market trends. These are possible with artificial intelligence tools like Linkfluence Radarly, Google Thinks

AI, and many more (Jarrahi, 2018). Personalized or customized marketing, on the other hand, is connected to content adaptation, recommending a correct time for communication matching the right consumer profile (Kumar et al., 2019). For example, artificial intelligence tools such as Socialbakers and OneSpot are used for emails and websites content modification and customization, individual mobile supporters like Siri and Alexa, service delivery with Uber, face identification with Haystack, monetary planning using Olivia, and many more (Kumar et al., 2019). Furthermore, multichannel marketing is said to create, control, and study multichannel marketing operations, provide a single approach across various platforms, to capitalize on the capacity to reach potential and present clients. Artificial intelligence offers marketing asset enhancement, like websites, social media, email, chats, etc. It can also help in meaningful interaction with consumers, along with management work like budget planning, channel suggestions, targeting, and capturing the designated audience at the right time.

Artificial intelligence in social media platforms can build content (using a subsection of AI called natural language generation (NLG)), write social media posts (using Hubspot), have a conversation in chats, (with the help of Sprout Social) (Makridakis, 2017; Cockburn et al., 2018). Artificial intelligence is also used to monitor and improve sales, by making them data-driven and smarter. The technology aims to make the sales process more efficient by improving performance with less admin supervision, continuing the predictive accuracy and recommendations, faster query solving, optimizing the efficiency of content, dynamic pricing, and churn forecast management (Syam and Sharma, 2018). Therefore, the requirement for artificial intelligence in sales productivity and efficiency cannot be overlooked.

3.2 Impact of Artificial Intelligence tools in organizations

The primary usage and implementation of artificial intelligence in marketing have tremendously evolved in the last decade (Furman and Seamans, 2019). Current research on the usage of artificial intelligence in marketing activities illustrates that a maximum of marketing specialists are interested in using artificial intelligence in their marketing activities, and nearly a quarter of them have the intention of using artificial intelligence solutions for business purposes (Chalmers, 2012). As Campbell et. al. (2020), states artificial intelligence has been used to grow and modernize old-fashioned marketing processes. Artificial intelligence was used to multiply and upgrade redundant or non-operational marketing methods (Paluch and Wirtz, 2020). One of the most commonly used software for decision-making in marketing activities by organizations is Marketing Management Support System (MMSS). This software provides data and information research and analysis by using artificial intelligence (Jarrahi, 2018).

Moving on from data analysis, artificial intelligence nowadays is used by professionals in many operations such as web development, trend forecasting, digital marketing, risk analysis, social media monitoring, search engine optimization (SEO), email marketing, and many more (Puntoni et al. 2021). Also, artificial intelligence in marketing utilizes consumer information, machine learning, and computational concepts in estimating consumer behavior. Especially, when it comes to product development, launch, and budgetary allocations, marketing experts rely hugely on artificial intelligence for revenue growth analysis, productivity, increased product efficacy, and tracking return on investment (ROI) within a very short stipulated time

frame. End-to-end implementation of artificial intelligence in the planning, preparation, execution, monitoring, and analysis stages of marketing campaigns improves both productivity and efficiency (Ma and Sun, 2020). However, research has shown that marketing professionals lack knowledge about artificial intelligence and the effects of integrating it into marketing strategies. Additionally, inadequate literature in the area related to its implementation in marketing tools in alignment with brand values has left a huge potential for its application by organizations of any scale.

Automation processes can improve marketing operations in the planning and execution phase, estimating risks, and thereby improving results. Professionals need to begin by understanding artificial intelligence, various courses of implementation of artificial intelligence, and experience it to enhance its impact. A few of the areas where it can be used are text, audio, and visual technologies, and analytical decision-making processes, which offer cost reduction and revenue growth for products. Artificial intelligence usage can also focus on creative tasks and strategy development related to daily work schedules (Gentsch, 2018).

Before introducing artificial intelligence in companies, it is essential to assess if the organization is ready to benefit from it. Questions such as if the company has enough data to examine and manage how this information is collected and systematized (O'Leary, 2013). Setting the goals and potentials straight for artificial intelligence-related tasks like, how to adopt and execute artificial intelligence tools for day-to-day processes, how to adapt the business structure and responsibilities while implementing artificial intelligence to the business ecosystem, considering the data privacy sensibility and probable prejudices using it for organization purposes are important things to consider for an organization (Ertel, 2018).

Haefner et al., (2021) highlight three main perspectives while observing the impact of artificial intelligence implementation by organizations. They are artificial intelligence's effect on marketing which focuses on the reciprocal impact of consumer interaction and providing new solutions in marketing activities. Moving on, the next impact of artificial intelligence emphasizes the customers and underlines the benefits that customers receive digitally because of AI execution. For instance, easier and faster shopping, customization of information, and personalized and unique experience of brand relationship. Lastly, the impact of artificial intelligence on marketing management. Thus, it can be noted that artificial intelligence bridges the gap and enhances processes by removing laborious and time-consuming marketing activities, encouraging creative and strategic decisions, fostering design innovations, building on employee productivity, and cultivating an ecosystem that is tech-based and expanding. For example, Customer Relationship Management (CRM) activities can be optimized by artificial intelligence, deep learning tools can improve the task assignment processes, monitor progress in delivery systems based on the results of data mining and profiling, and so on (Gentsch, 2018). Moreover, organizations can automate recurring tasks to reduce time consumption and increase efficiency by using company cognitive computing in their facilities (Duan et al., 2019). For example, in advertisement and promotional activities, artificial intelligence is usually used to gather knowledge about consumers and target them with precision and through personalized content towards them (Malter et al., 2020).

INFERENCES

The paper observes that small to large-sized organizations have applied artificial intelligence in optimizing their marketing activities. The inclination to use text or image recognition is more than voice recognition in promotions (Alter, 2022). The existing artificial intelligence tools that are employed for marketing tend to be supporting in nature, that is guiding and monitoring a complete shift to a digital ecosystem. Such examples are Customer Relationship Management (CRM), connecting multiple layers, customizing, automation, and expansion of marketing activities, as well as profiling. Mostly the tech-tools combined with the present marketing tactics improve and build on productivity and automate assignments and goals (Borges et al., 2021). Also, with the huge amount of available data, deep learning, data mining, and labeling tools ensure detailed and accurate profiling of consumers and their demands. Since these technologies are still new and rapidly developing, independent automation and robotics can be the future in developing artificial intelligence, particularly in marketing tasks like intense customer interaction.

CONCLUSION

Therefore, it can be considered that in the previous decade, artificial intelligence was mostly exploited in accumulating data about and from customers, and then interacting with them in a personalized manner. The review intended to prove that even though artificial intelligence usage started on the operational level, it gradually is getting adopted and utilized in crucial marketing mix and marketing communication activities (Davenport et al., 2020). This means that with this independent automation more valuable information is available with even more ways to interact with the consumers. This interaction based on artificial intelligence is faster, increases employee productivity, and enhances overall marketing decision-making. However, before implementing artificial intelligence in all levels of marketing activities, companies must have a robust infrastructure and innovative outlook (Huang and Rust, 2021). In this way, organizations can have exceptional experiences and uphold high standards of perspectives in their marketing activities to fulfill their goals..

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