

# Chapter 23

## The Future Impact of Technological Developments on Digital Marketing Through Artificial Intelligence



**K. Guru, S. Raja, J. Sasiganth, Dilip Kumar Sharma, Mohit Tiwari, and Tripti Tiwari**

**Abstract** Digital marketing includes a combination of marketing activity and implication of computer science to optimise the activity of advertisement and sales generation. In this study a comprehensive discussion is conducted to evaluate the aspect of technological advancement in Artificial intelligence and its implication in digital marketing activities. Different methods of digital marketing are discussed in this regard that facilitate modern companies to attain an effective customer engagement through direct interaction. SEO, PPC, Chatbots, SMM and other methods are found to be used extensively in recent times to optimise the marketing operation in the global market. Implication of AI is significant in this regard to enhance the aforementioned methods and improve the process of online marketing. AI facilitates the business entities in gathering customer's data at the time of searching about products. Brain modelling, time series prediction, image recognition and other techniques are used by AI to offer more relevant data to the business entities regarding customer behaviour and purchase intention. Augmented reality is another important feature in this regard that facilitates customers to see and feel products offered by companies that contribute to increasing the amount of sales volume in the targeted market. Such kind of technological advancement contributes in evaluating customers' perception

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K. Guru (✉) · S. Raja  
SRM Valliammai Engineering College, Chennai, Tamil Nadu, India  
e-mail: [guruvpm@gmail.com](mailto:guruvpm@gmail.com)

J. Sasiganth  
PG and Research Department of Management Studies, Sacred Heart College (Autonomous),  
Tirupattur, Tamil Nadu, India

D. K. Sharma  
Department of Mathematics, Jaypee University of Engineering and Technology, Guna, MP, India

M. Tiwari  
Department of Computer Science and Engineering, Bharati Vidyapeeth's College of Engineering,  
4, Rohtak Road, Paschim Vihar, Delhi, India

T. Tiwari  
Department of Management Studies, BVIMR, 4, Rohtak Road, Paschim Vihar, Delhi, India

about the product and services that helps the marketer to implement suitable strategies to meet customer demands. It can be done by optimising the quality of customer services and products by differentiating it from others available in the similar market. Hence, AI influences to enhance the technique of product promotion to improve the sales volume in target market by effective technical advancements.

### **23.1 Introduction**

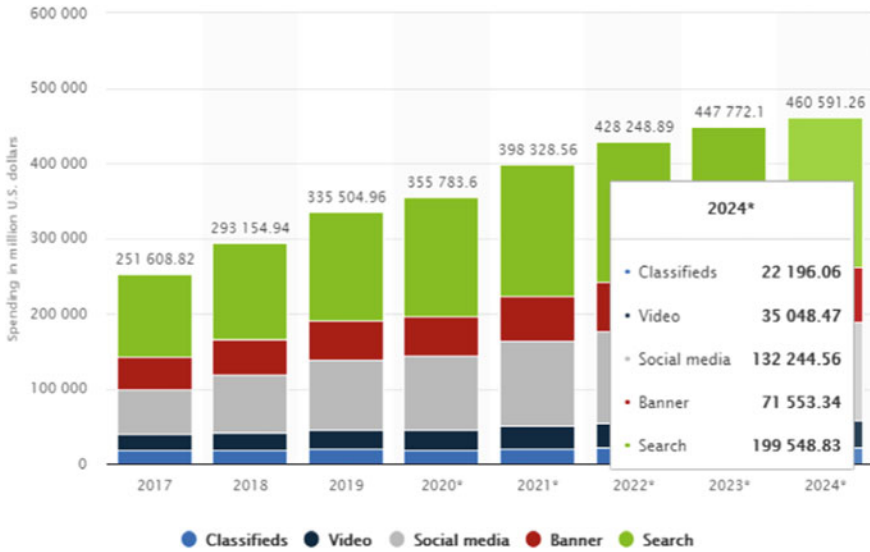
Technological advancements lead to enhance business activities in a significant way by providing enormous opportunities to reach more customers with diversified products and services. Digital marketing includes utilization of online platforms and software to promote a wide range of products and services to global customers fast. It also facilitates gathering customer's feedback in a massive manner to improve the quality of existing marketing strategies. Artificial intelligence (AI) is an advanced digital tool that integrates cloud computing, network devices, computer and digital content of marketing. In this paper technological advancements in AI and its influence on digital marketing activities is discussed in a comprehensive manner.

### **23.2 Overview of Digital Marketing**

Electronic devices and Internet platforms are key components of digital marketing that facilitate business entities to display products and make advertisements to increase sales volume. Different Internet channels such as websites, social media platforms, email and others are used to keep in touch with customers and increase their numbers [1]. Modern companies utilise AI software to optimize marketing activities, reduce turnaround time and overhead cost and improve the business output. An unprecedented technological growth is evident in this regard that enhances incorporation of robotic components in marketing activities. It contributes in enhancing interaction between business units and customers by means of different online channels. Thus, companies can experience notable profits by increasing their sales volume in the global market.

### **23.3 Methods of Digital Marketing**

In today's commercial activities several digital marketing tools are utilised in an extensive way. Likewise search engine optimization (SEO), social media marketing (SMM), pay per click (PPC), content marketing, chatbots, affiliate marketing and others are the most used digital marketing methods in recent times [2]. SEO facilitates to increase visibility of a business unit on the online platform that optimises



**Fig. 23.1** Expenditure increase in video content of digital marketing. *Source* [3]

promotion of a brand among a wide group of customers. Among all other components of digital marketing video content is found to be more effective to attract customers as it depicts products and services in an alluring manner in front of the customers. It is estimated that a total of \$ 35.05 billion will be spent on digital video contents to promote products and services globally in 2024 [3]. Chatbots are significant in respect of chatting with customers on a regular basis for ensuring smooth completion of an order made by a customer (see Fig. 23.1).

Semantic search is another important method that facilitates faster attainment of data searched by customers on a commercial website. It is mainly a machine learning technique that predicts information that can be asked by a customer based on the past search history [4]. AI based technology is also used in this regard to create natural language for transforming raw data of customer’s query into readable report; that is termed as content creation. Based on the user’s search history and additional information such as gender, geographic location and age, suitable advertisement contents are designed on digital platforms to reach targeted customers in an optimum way [5].

Predictive marketing is an AI based technique to collect behavioural data of customers and analyse the same to find any suitable interrelation between customers’ preferences and digital advertisement through data mining [6]. Another advanced technique of voice search is also based on AI that facilitates users to search any complement on the commercial websites at a faster rate. Hence, it can be stated that a wide variety of methods are utilised by digital marketers to promote their products among global customers effectively.

## 23.4 Artificial Intelligence (AI)

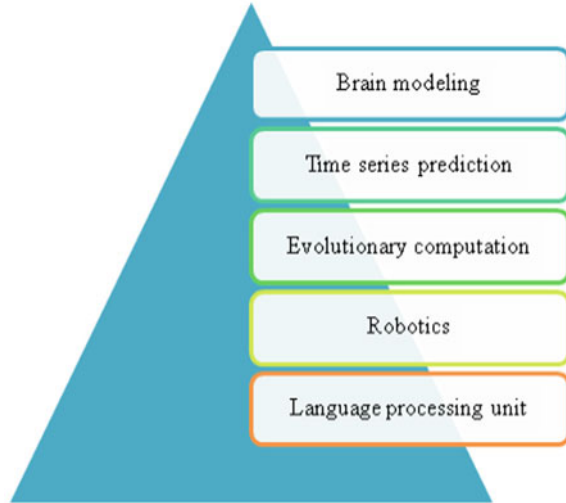
AI is an integrated digital tool that incorporates human intelligence in machines such as computers to improve the quality of existing operations. This technology is also applied in marketing activities to optimise the advertising operations along with enhancing customer services [7]. It helps to detect current data trends in the global market for implementing suitable digital marketing strategies to mitigate probable risk factors. Moreover, a huge amount of sales and marketing documents can be analysed through AI to identify the reason for compliance failure [8]. Combination of AI with robotics can leverage future business activities by making it more scalable and cost effective. Thus, it is estimated that future business operations would be influenced by AI in respect of implementing marketing strategies, improving sales volume and optimizing customer services in a transformative manner.

## 23.5 Impact of AI on Digital Marketing

AI implication includes several techniques such as data mining, pattern recognition, natural language processing and others. Main advantages of this system include consistency in processes and conduction of all the activities by following a rule-based programme that leads to minimising the errors [9]. Machine learning is the main component used in AI based marketing that gathers all the data regarding a customer while someone browses any commercial website. Those data are then manipulated with computer programmes and suitable recommendations are created based on that data. An application based recommendation is sent to customers according to his/her interest and behavioural record. In this way companies utilise AI based machine learning techniques to improve brand positioning in the triggered market. Besides attainment of business goals; AI based digital marketing also facilitates companies to fetch suitable data regarding customers' experiences. However appropriate input data is required to generate suitable programmes, codes and loops to maintain high speed and accuracy of data mining through AI.

On the other hand, AI is also significant in changing the customer relationship management (CRM) activities by incorporating suitable software. For example AI based techniques can mitigate the problems that occur due to huge human intervention required by Zoho, Salesforce and others software to conduct CRM activities [10]. As AI facilitates self updation, auto correction and less human intervention an effective CRM is attained by modern business units optimally. For instance automatic notifications are sent to a customer's mobile prior to finishing the data pack for ensuring quick recharge. Discount offers are also sent to the user to enhance customer retention in a better way along with improving the sales volume. Hence, a better return on investment (ROI) is ensured by modern business units by making customers aware of all the recent offers and facilities offered to them through the digital platform instantaneously.

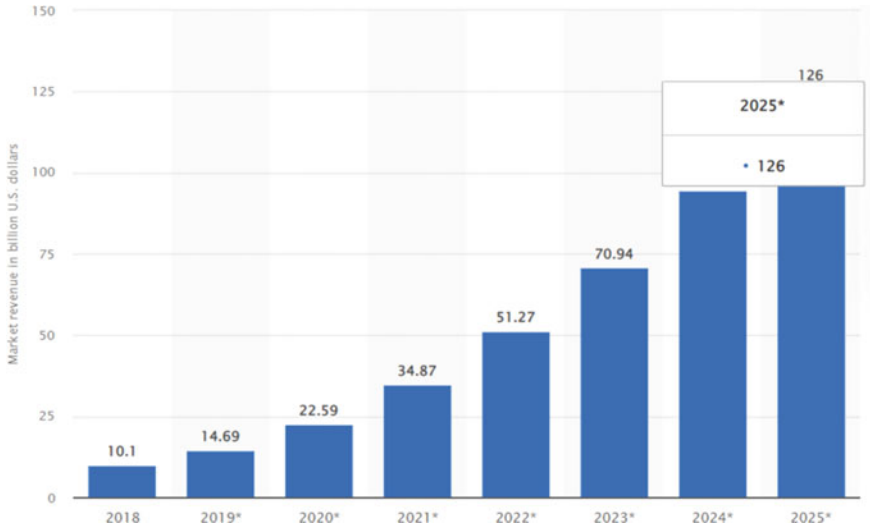
**Fig. 23.2** Technological features of AI. *Source* [11]



Different components are used in AI based digital marketing that optimises the entire process of market research, customer evaluation and decision making to resolve problematic issues. Likewise, brain modelling technique is utilised by AI through neural networks that also helps in conducting a time series prediction regarding customer' behaviour' [6]. Genetic algorithm is utilised in conducting an evolutionary computation through a genetic programming procedure. Another technology of vision is used to recognise objects and identify images. An intelligent control of all the marketing activities is conducted by robotics that also contributes to autonomous exploration. AI also helps in supporting decision making by means of an expert system (see Fig. 23.2) [11]. Another component of speech processing is used to recognise speeches and machine translation is conducted by a language processing unit. Thus, it is understood that a combination of several components facilitate effective utilisation of AI based platforms in digital marketing activities.

### 23.6 Changes in Digital Marketing by Implementing AI

Global business activities are associated with continuous innovation to survive in the competitive environment through process improvement. AI plays a significant role in this regard to collect suitable data from the customers and utilise it to product customizstion [12]. This can differentiate products offered by a company with other competitive business groups and leads to achieving the competitive advantage globally. AI is a scientific electronic data processing tool that helps in planning and controlling business data along with reporting it through appropriate management. It is termed as real time marketing that includes development of suitable



**Fig. 23.3** Progression of implication in global marketing activities. *Source* [13]

marketing strategy based on electronically processed data obtained through online communication and digital information retrieval system.

AI offers a wide range of services to detect customers' feedback in the form of voice recognition, image identification, machine learning and semantic searching. Moreover information about latest technological updates is conveyed to customers through AI based platforms. As example, Siri technology of Apple and Google's Deep Mind are based on Natural Language Processing (NLP) for voice interpretation and providing quick response to customers accordingly [13]. Effectiveness of this system includes development of connections with customers rather than relying on predetermined behavioural algorithms. Hence, efficiency of the digital system also gets increased in terms of energy saving and cost effectiveness. Moreover, it also prevents data leakage from a system regarding marketing activities and leads to attain the competitive advantage in a sustainable manner. Therefore, AI based techniques are found to be used in global marketing activities in a progressive way through the recent period (see Fig. 23.3).

### 23.7 Technological Evolution of AI

A technologically advanced data driven approach is facilitated by AI to improve the process of marketing and decision making. It evaluates a huge set of online information regarding customer's behaviour and detects their digital identity [14]. Automated system is involved to analyse customer' profiles that eases the process of decision making to implement suitable techniques for meeting customers' demands

in a more effective manner. SMM is another potential tool to gather customer’s information and that data undergoes an analysis by utilising artificial intelligence. AI analysis of data ensures optimisation of information and provides the most relevant data to marketers that lead to an effective marketing activity globally.

### 23.8 Extant of AI Technology and Future Scopes of Innovation in Digital Marketing

AI is an effective tool to conduct statistical analysis of numeric data through the technology of machine learning. It is applied to optimize the pricing strategy aligned with competitive issues that lowering the price is significant to attract more customers. On the other hand, more profit can be earned by a business unit by increasing the price of products. Companies utilise AI to analyse a huge number of numeric data prior to setting the real time price of products. For example Tesco utilises the techniques of AI to gather customer insights and warehouse data prior to setting the price of products [15]. Non-numeric data can also be controlled by AI for effective lead generation to identify the ideal customer. Potential clients can also be identified by utilising AI techniques based on the gathered information. Hence, a significant amount of time can be saved in business to business (B2B) activities along with staffing and recruitment processes. Thus, marketers can get more time for performing sales calls and pitching to customers to promote their profits in the targeted market (Table 23.1).

Customer characteristics are also affected by adoption of AI techniques that can be ensured by utilising AI based chatbots to interact with customers in a natural language environment. Marketers use this platform in an extensive way in recent times due to the increasing rate of social media traffic occurring in private messaging platforms. AI technology is effective in respect of automated content generation that is utilised by global companies to create logos, advertisement scripts and attractive audio tunes [16]. Hence the maximum portion of advertisement generation is estimated to be done by utilising AI in future.

Marketers are benefited to use AI in PPC campaigns as it helps to identify new channels of advertising to promote products. As these channels may not be used by any of the competitors; it benefits the marketer to gain the competitive advantage effectively. Augmented reality is another main contribution of AI in digital marketing that offers better customer satisfaction [17]. As customers can both see and feel the products offered by a company they can understand features of the product prior to purchasing it. For instance Leskart’s 3D Trial provides an opportunity to its customers to feel the frame through webcams. Hence, by providing an optimum level of service

**Table 23.1** Evolution in the utilisation of AI

Utilisation of AI	
Controlling numeric data	Controlling non-numeric data
Pricing strategy	Ideal customer identification

to customers AI facilitates markets to promote their products and services in the targeted market along with achieving desired level of profit in the targeted market.

## 23.9 Conclusion

AI and its technologically advanced features include a set of innovative characteristics to attract a wide number of customers for improving the sales volume. This technology mainly utilises the strategy of developing a potential engagement with customers and making them familiar with global brands through direct and regular interaction. B2B marketing and allied activities are approaching complete automation by laying down the idea of incorporation of AI and robotic components in marketing operations. Certain components such as Big data, Internet of Things and Machine learning techniques are subsidiary processes of AI that contribute to strengthening digital marketing activities in a profitable manner. Thus, markets of the modern era prefer to utilise AI to get detailed customer information and take suitable steps to meet customers' demands in an optimum way for attaining the competitive advantage on the targeted market.

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