

Artificial Intelligence in Marketing

By

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Abstract

Artificial Intelligence is the study focusing on learning behaviors of human on any specific issue and then developing intelligent systems or software which can automatically tackle the issue in future. This the linkage of this intelligence in marketing create artificial marketing intelligence. This study focused on identifying the role of artificial marketing intelligence or applications in increasing overall firm performance and developing customer knowledge. In order to study this relation, we collected data form marketing managers of different companies. This data was analyzed by using SPSS software. The results revealed that implementing of artificial marketing intelligence or its applications in firm can increase its overall performance and also enhance the knowledge of customers.

Keywords: Artificial Intelligence, Marketing Intelligence, Customer Knowledge, Firm Performance

Introduction

“Artificial intelligence (AI) marketing is a method of leveraging customer data and AI concepts like machine learning to anticipate your customer’s next move and improve the customer journey” (Blattberg, Glazer, & Little, 1994; Lo, & Zakaria, 2004; Rekha, Abdulla, & Asharaf, 2016). In simple words, if the marketing activities are performed by “computers and algorithms” rather than human, then such marketing is called artificial intelligence marketing. AI Marketing gives such methods and tools that facilitate targeted advertising (Martínez-López, & Casillas, 2013). IA marketing is the latest beckon of a “data-driven” marketing approach that makes it possible for the marketers to form well-personalized customer experience and this costs considerably lower than traditional expensive marketing campaigns (Crunk, & North, 2007). All customer interactions are used for potential optimization. AI marketing as an incredible technology for the industry is introduced in 2017. Big data, powerful solutions, and machine learning are some key elements of AI marketing that make it more powerful nowadays (Wierenga, 2010). Big data is a very simple concept that shows the marketer’s capability of segmentation and aggregation of large data-sets with minimum manual work. This data is further used by marketing teams to make sure that the right message has been communicated to the right person at the right time through the preferred channel (Sterne, 2017). Machine learning (ML) is a useful platform for marketers to understand the massive data repository. ML is the methodical and statistical study of algorithms that are used by the computer system to execute an explicit task with no specific instructions and just by relying on prototypes and inference as alternatives (Amaravadi, Samaddar, & Dutta, 1995). ML algorithms make a mathematical model on the basis of sample data, with the aim of making predictions. These are used in an extensive range of applications like computer vision and filtering of emails. ML can assist the marketers to identify the trends and efficient prediction of general responses, feedback,

and common insights so they can be aware of the probability and root cause of some repeated events (Siau, & Yang, 2017). AI marketing systems accurately understand the actions in an identical way like a human. IA platforms can recognize perceptive themes and insights extraordinary fast across the large data-set. Artificial intelligence solutions also understand feelings, communications and emotions like a human being (Büchner, & Mulvenna, 1998). This enables AI solutions to understand the contents of open-form such as email responses, social media feedbacks, and natural languages. Many research studies proved numerous benefits of artificial intelligence marketing. A recent study confirms that more than 70 percent of marketers view it as a big business advantage (Rekha, Abdulla, & Asharaf, 2016). With the rapid growth of smart technology solutions, audiences are also becoming smarter. Due to the emergence of social media and fast internet search engines like “Google” customers search their required items with one click. Big data and artificial intelligence solutions can really scrutinize these “search patterns” and assist in identifying important areas where the marketers should focus. Through AI marketers are gaining a profound understanding of their customers (Stalidis, Karapistolis, & Vafeiadis, 2015). AI solutions help marketers to know exactly about the customer’s real-time sayings, feelings, and thinking about their product. Likewise, by analyzing social media through AI, marketers can accurately understand the feelings of customers and then promptly adjust messaging or product for utmost effectiveness (Dirican, 2015). Through AI the marketers can optimize digital marketing by providing deeper insight of customer data secreted in search keywords, social media profiles, and other internet data so the marketers can make more efficient digital advertisements (Ohsawa, & Tsumoto, 2006). AI solutions help marketers in creating detailed profiles of customers and then targeting and sending the right message to the right person at the right time. AI solutions also help the marketers to connect with customers in real-time conversations by identifying any relevant

conversation on social media or on any other open forum. In the area of consumer service AI also plays an important role these days. Online chat functions can be run through artificial intelligence bots. By adopting these techniques companies can save human time and expenditures as well (Kose, & Sert, 2017). After analyzing the usefulness of AI one can conclude that AI is tomorrow's technology of marketing. This study will focus on two things, one is to find the effect of artificial intelligence in marketing on customer knowledge building and second is to explore how AI in marketing can effect firm performance.

Literature Review & Hypotheses

Artificial Intelligence and Marketing Intelligence

In order to develop better decision making skills among business users, there is key role of business intelligence because it helps them in storing, analyzing and gathering the data efficiently. This intelligence is basically originated by artificial intelligence which is all about making computer, computer-controlled robot and software having ability to think like humans (Stalidis et al., 2015). Artificial Intelligence is the study focusing on learning behaviors of human on any specific issue and then developing intelligent systems or software which can automatically tackle the issue in future. Therefore, AI believe in providing efficient solutions which can facilitates facilitate human and improve their working capabilities (Rao, 1999).

The field of modern marketing management emerging in end of 1950s and at that time, the fields of econometrics and operations management was already established. Furthermore, there is no link between these two fields and marketing management but they played a vital role in development and foundation of marketing models (Wierenga, 2008) namely managerial marketing, consumer

behavior and contemporary marketing. During the development of these big marketing models, the area of artificial intelligence was at embryonic stage (King, 2019). Case based reasoning, neural nets and expert systems are few applications of artificial intelligence in marketing (Amaravadi et al., 1995). The marketing intelligence is defined by as Casillas and Lopez (2010) as “Marketing intelligence is the everyday information relevant to a company’s markets, gathered and analyzed specifically for the purpose of accurate and confident decision-making in determining market opportunity, market penetration strategy, and market development metrics”.

Customer Knowledge and Artificial Intelligence Marketing

The marketers have advanced and unique tool of knowledge based information which enable them to take strong and evidence-based decisions in different complex situations (Liang and Xu, 2002). The knowledge management is considered as most important part of knowledge engineering. It defines the knowledge formalization, terminologies and structure which help the artificial intelligence models and enable them to solve problems by an and intelligent engine (Guarino, 1995).

The knowledge base is called the container of produced knowledge and operational component which help to retrieve or maintain the knowledge. Therefore, the knowledge management is implemented with a knowledge base (Ralyte et al., 2008; Tarus et al., 2018, North and Kumta, 2018, Tarus et al., 2018). The knowledge elicitation is another important element which is performed by experts and experienced human. It involves the results interpretation and analysis, selection of useful or implementable findings and rejection of meaningless results. Moreover, it transfer the meaningless findings to the rule syntax which is defined by KM (Foote and Halawi, 2018; Wang et al., 2018).

By using the query mechanism, the marketers can exploit the knowledge content for support in decision (Hwang et al., 2008). This mechanism is linked with an inference reasoned or engine that which apply logic to the knowledge for computing query results and solving decision making problems (Stalidis et al., 2015).

On the basis of above discussion, following hypothesis can be concluded:

H₁: Artificial intelligence in marketing can help in developing customer knowledge.

Artificial Intelligence in Marketing and Performance

Since last decade marketers are trying to examine and tackle marketing related issues by using old concepts and principles (Wierenga & van Bruggen, 2000) but recently these issues are tackled with implementation of artificial intelligence (Shahid and Li, 2019). Now a day many companies are implementing artificial intelligence or its applications but these implementations are very initial stage. Different marketers are inclining towards artificial intelligence and 98 % managers of top companies are now preparing to completely execute artificial intelligence. Since 2017, only 20% marketers have successfully implement one or more applications of artificial intelligence in business (Bughin, McCarthy & Chui, 2017).

The buzz of artificial intelligence is compelling every marketer and business man to implement its applications but its preparation and execution is the hurdle for everyone. However, these applications can be quickly developed with different software which also provide services to final implementation. Many studies have highlighted that 2020 will be the turning point in diffusion of artificial intelligence in marketing field.

On the basis of above discussion, following hypothesis can be concluded:

H₂: Artificial intelligence in marketing can increase the firm performance.

Research Gap

We are unable to find more advanced research articles that exclusively elaborate AI methods and marketing applications except some prominent introductory books (e.g., Berry & Linoff, 1997; Matsatsinis & Siskos, 2002). Although, the research articles on this topic are a few, but there are books that traces the common scope of AI applications for management/business and also includes marketing chapters (e.g., Aliev, Fazlollahi, & Aliev, 2004; Bidgoli, 1998; Carlsson, Fedrizzi, & Fuller, 2003; Prasad, 2008). Recently, few research edited a book volume titled “Marketing Intelligent Systems using Soft Computing: Managerial and Research Applications” (Casillas and Martínez-López, 2010), comprising the collection of innovative research works related to various marketing issues, along with the potentialities of AI-based methods for marketing that are the reflections from number of well-known marketing and management scholars.

In B2B offering, customers are those individuals who most likely purchase but essentially not use the product. Customer has the list of activities in their knowledge for creating, codifying, sharing and applying the customer information such as, what to make of a purchase decision, how and why, and the pros and cons of this purchase decision (Abrell et al., 2016). In each stage of business to business sales funnel, the artificial intelligence can lead to greater marketing strategy efficiency (Syam and Sharma, 2018). Taiminen and Ranaweera (2019) said that “by using predictive models, AI systems can engage in prospect scoring, i.e. evaluating prospects based on their propensity to buy and identifying high quality leads, a task that typically requires substantial human resources”.

Methodology

We conducted survey to know the marketing manager’s perception towards AI in building customer knowledge and increasing firm performance. In order to collect data, online questionnaire was posted in different blogs and social media websites. This data was analyzed using SPSS software. Moreover, beside this primary data, our study took abundant literature on artificial intelligence in marketing. Therefore, this study has used both, primary and secondary data.

Results

We got 471 responses of marketing managers working in different companies and among them majority of the respondents (almost 84%) were having more than 10 years of experience and 16% were having less than 5 years of experience. Among this sample 75% were males and 25% were females. The detail is also given in table 1.

Table 1: Summary of General Information about Marketing Managers

<u>Buying pattern</u>	Frequency	Percent
More than 10 years of experience	396	84
Less than 5 years of experience	75	16
<u>Gender</u>		
Male	353	75
Female	118	25

Following questions were asked from marketing managers:

Question 1: Do you think that artificial intelligence in marketing can increase the performance of company?

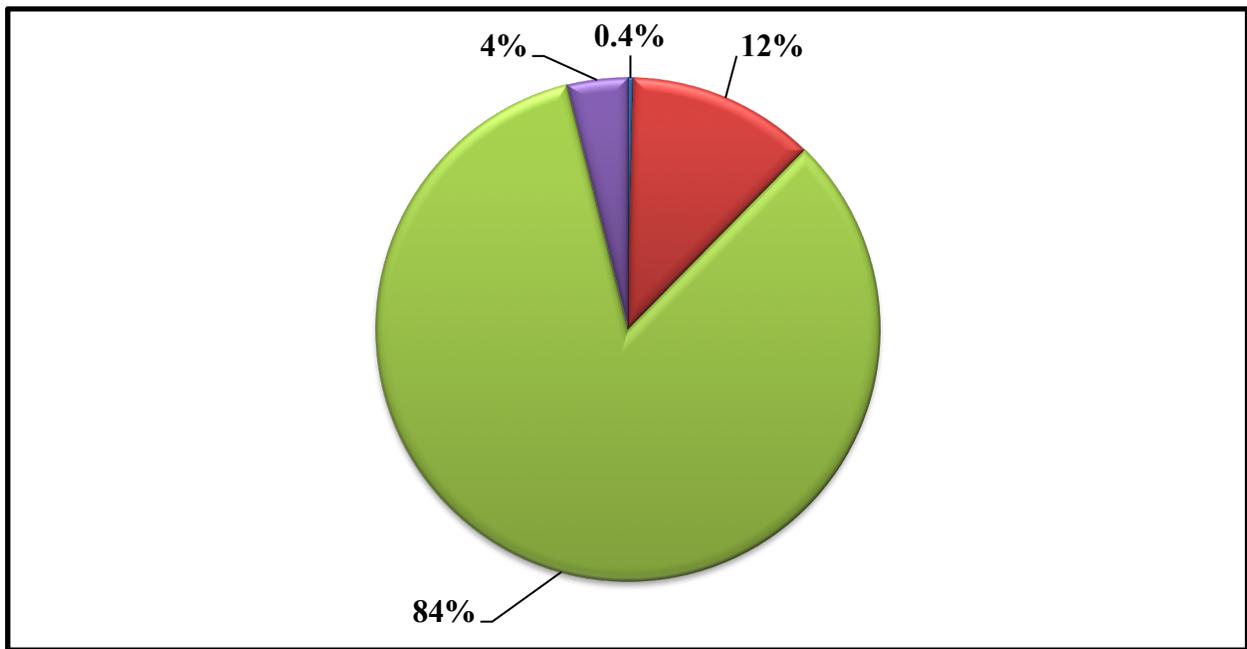
Question 2: Do you think that artificial intelligence in marketing can develop customer knowledge?

Question 3: In your opinion, AI in marketing is difficult to implement?

Question 4: Do you think your organization is implementing AI in marketing?

The responses of respondents are given in figure 1.

Figure 1: Respondent's View on questions



84 % respondents answered that AI in marketing can increase the overall performance of company and 12% showed that it can also help the customers to develop knowledge. Only 0.4 % respondents were implementing the applications of AI marketing in their organizations. There were 4 % respondents who answered it's difficult to implement AI marketing with organization.

Conclusion

The successful implementation of artificial intelligence in marketing can help the marketers in understanding their customers. AI solutions help marketers to know exactly about the customer's real-time sayings, feelings, and thinking about their product. These solutions help marketers in creating detailed profiles of customers and then targeting and sending the right message to the right person at the right time. Besides increasing the overall performance of company, artificial marketing intelligence can also help the customers in developing knowledge.

Study Implications

This study is revealed the abundant literature in on artificial intelligence, marketing, marketing intelligence, customer knowledge and also provided the link between variables. Therefore, this research can help the researchers while conducting future studies. Moreover, this study is a lesson for companies which want to increase their overall performance. The marketing managers can use the results of this study as an evidence while making proposal of implementing artificial marketing intelligence within organization.

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