

A systematic review on how artificial intelligence will change the future of marketing

Dhaya Sindhu Battina

Software Engineer & Department of Information Technology

Hyderabad, India

Abstract—The main aim of this paper was to review how artificial intelligence will revolutionize the future of marketing. Marketing strategy and client behavior are both expected to be significantly altered in the future as a result of artificial intelligence (AI). To better comprehend the effect of AI, the authors suggest a multidimensional framework based on existing research as well as extensive contacts with practitioners [1]. This paradigm takes into account intelligence levels, task kinds, and whether AI is implanted in robots. The world is in a constant state of flux. Various industries are undergoing radical changes. Slowly but surely, small businesses are taking over the market and creating a name for themselves. As the concept of monopoly in business fades, anybody with the appropriate methods and creative goods may reap the benefits of revenue splits. Modern AI and machine learning are strongly reliant on vast amounts of data, even though artificial intelligence is still a confusing jargon in tech for many. In the next years, scientists believe that data analytics will play a significant role in the development of artificial intelligence (AI) and machine learning (ML) [1]. Simply put, artificial intelligence (AI) aids businesses in overcoming one of the most difficult problems they face today: acquiring new customers. In every step of a marketing effort, from planning to conversion and client retention, artificial intelligence (AI) is a key component. Because of this, companies that use AI to their maximum potential have an edge over their rivals.

Keywords: Artificial intelligence, augmentation, marketing, automation, data analytics

I. INTRODUCTION

Marketing techniques, including company models, sales procedures, and customer service alternatives, may be influenced in the future by artificial intelligence (AI). Three examples from various sectors might help illustrate these upcoming changes [1]. First, autonomous, AI-enabled automobiles may be on the horizon in the transportation sector, promising to revolutionize corporate structures as well as consumer behavior. Organizations such as taxi and ride-sharing must adapt in hopes of

avoiding being displaced by artificial intelligence-enabled transportation systems; demand for automotive coverage (from individual customers) and breathalyzers (fewer people would drive, particularly after intoxication) will probably drop, although the need for security systems that keep automobiles from being compromised will likely rise [1]. Self-driving cars may potentially influence the value of real estate since they can move quicker, resulting in shorter commuter traffic, but also because passengers may be more productive during these shorter periods because they can work securely while being transported to their destination. In other words, outlying suburbs might become more desirable in the future than they are now [2].

According to academics and practitioners alike, artificial intelligence (AI) has the potential to transform marketing tactics and consumer behavior. According to a Salesforce poll, artificial intelligence (AI) will be the marketing technology of choice in the years to come. Many of the conditions for AI to deliver on its promises may already be in place [2]. However, there is a counterargument to this claim. In the first place, the necessary technical capacity to carry out the previous instances is still deficient Autonomous vehicles aren't ready for deployment now, for example, as they can't manage terrible weather conditions right now. Before shops use shipping-then-shopping strategies that minimize product returns, predictive analytics must improve dramatically. Considering all of this, it's clear that marketers and academics alike want information on not just AI's ultimate promise but also its development route and timescale. These challenges are addressed in this study, which is based on a survey of marketing (and more broadly, business) literature as well as significant conversations with professionals in psychology, sociology, computer programming, and robotics [2,3]. The influence of AI differs from industry to industry; the application of Artificial intelligence on marketing is largest in areas such as consumer packaged products, retail, banking, and tourism. There is a great deal of interaction between these industries and their massive numbers of consumers, which results in a great deal of

customer transaction and customer characteristic data being generated. These data may also be supplemented by information gleaned from other places, such as social networking sites or reports from marketing companies. Artificial intelligence (AI) may then be used to evaluate this data and provide real-time tailored suggestions (such as the next product to purchase, the ideal pricing, and so on) [3,4].

II. PROBLEM STATEMENT

The main problem that this paper will address is to review how artificial intelligence will change marketing. There is a dearth of marketing literature on artificial intelligence, motivating this endeavor to provide a framework that outlines where AI is now and how it is expected to progress in the future. Artificial intelligence (AI) is expected to be used by marketers in areas such as segmentation and analytics (connected to marketing strategy) as well as messaging, personalization, and predicting behavior (linked to customer behaviors). This paper also includes a literature review from the past research publications which outlines how artificial intelligence (AI) might impact marketing strategy and consumer behavior. As a result, we are responding to growing requests for AI to be researched not just by computer scientists, but also by individuals who can integrate and assimilate findings from the social sciences [5].

III. LITERATURE REVIEW

A. Artificial Intelligence: A Brief Overview

Artificial intelligence (AI) is defined as "programs that indicate intelligence," "manifested by computers that exhibit characteristics of the human intellect," and includes robots replicating "intelligent human behavior," according to researchers. Many major technologies are used, including machine learning, natural language processing, expert systems based on rules, neural networks, deep learning, and physical robotics. This technology gives AI the ability to accurately read outside information, learn from it, and adapt to new situations. Alternatively, AI may be defined in terms of its marketing and business applications, such as automating company operations, generating insights from data, or interacting with consumers and workers [6]. The latter viewpoint serves as a foundation for further research. To begin, AI algorithms automate corporate operations by doing predefined activities with little or no human interaction, including moving data from emails or customer support to recordkeeping facilities (updating customer files), replacement of stolen ATM cards, executing basic market activities, or "reading" texts to extract prerequisites using natural language processing. AI can also derive insights from massive amounts of client and transaction data, including quantitative as well as textual and acoustic, picture, and facial expression data [7]. A company's purchase behavior may be predicted using AI-enabled analytics. Credit fraud can be predicted and targeted

advertising can be deployed in real-time. The stylists at Stitch Fix, a clothes and styling business, for example, utilize AI to assess which clothing styles are most suitable for certain clients. In addition to consumer preferences, the AI also considers Pinterest boards, handwritten comments, comparable customers, and overall style trends [7]. Finally, AI has the potential to keep buyers interested long after the deal has been completed. The Conversica AI bot is responsible for moving consumer transactions through the marketing funnel, while the 1-800-Flowers AI bot is responsible for both sales and customer care. Artificial intelligence (AI) bots have several benefits over human employees. These AI bots not only have reduced mistake rates, but they also free up human agents to deal with more difficult situations. Furthermore, AI bot deployment may be increased or decreased in response to changing demand [7].

This description suggests that artificial intelligence can enhance revenues while simultaneously reducing expenditures. Marketing choices (such as pricing, promotions, and product suggestions) may raise revenues while expenses (such as service delivery and (structured) market transactions) can be reduced by automation of basic marketing chores [8]. It's clear from the explanation above that companies usually utilize AI as a way to enhance the skills of their human staff, such as when Stitch Fix employs AI to help its stylists make the best possible selections for their customers. As Ginni Rometty, IBM's CEO, put it, "AI won't lead to a world of man against the machine; it'll progress to a world of man plus machines." [8]

B. A look at how marketing has changed in the era of AI

The future of marketing lies in artificial intelligence (AI). With this, marketing automation will be phased out in favor of creating tailored experiences for customers. However, the irony is that to humanize marketing, artificial intelligence is required. Today's customers are constantly connected because of mobile and real-time innovation. Increasingly, customers are getting more adamant and (unintentionally) egotistical as on-demand applications and services become more common and social media become more influential in how people interact, share, and communicate [9]. They're impatient and want results immediately. They're becoming antsy and antsy. They want a customized level of involvement. And they're on the lookout for brand-new experiences that are out of the ordinary.

This isn't a new phenomenon. Over the past decade, digital marketers have seen a sea change in their industry. The necessity for customization, cross-channel and omnichannel integration, responsive/adaptive design, and dynamic interaction has long been discussed among experts. However, despite the passage of time and advancements, nothing has been done to improve customer engagement via marketing [10]. The marketing

playbook hasn't changed much, even though new technological trends provide strong new tools for marketers. Disruptive technology, on the other hand, has made businesspeople more cautious about taking risks. Personalization has been compromised in favor of marketing automation by marketing professionals. To put it another way, new technology just reinforces the status quo's beliefs and tactics, rather than offering new ways to engage, guide, and nurture customers in their purchasing decisions and overall interactions with brands. The key difference is that AI and data are now easily accessible, allowing us to alter the rules of the game. Artificial intelligence (and machine learning) will act as a catalyst for long-overdue marketing change, which is now more important than ever. This move from automation to personalization, and ultimately anticipation and prediction will become apparent [11].



Fig i: Applications of AI in digital marketing

C. Artificial intelligence (AI) and marketing strategy

i. Predictive ability

When it comes to predicting client purchases, artificial intelligence (AI) can help businesses make better predictions. Based on predicted accuracy levels, companies may even significantly alter their business models, supplying products and services to clients continuously based on data and forecasts about their requirements [12]. As a result, several study possibilities arise concerning various client buying patterns and marketing methods. The ability of predictive AI-driven algorithms to foresee demand for really novel items may be a particularly relevant research field. Even if AI systems can accurately forecast incrementally new items, it remains to be seen whether they can accurately predict RNPs as well. To do so, AI systems would need data on RNPs, which is frequently not readily accessible. Research may also look at ways to blend AI-driven insights with human judgment when evaluating how to create predictions for RNPs. It's believed that AI will play a significant role in forecasting not just what consumers

want to purchase, but also how much to charge and whether or not price promotions are warranted [13]. Marketing scholars should focus their efforts on understanding how prices and promotions affect sales. The best way to utilize AI to forecast optimum pricing and whether or not price promotions should be made is a significant subject for future study. This is a crucial area of study since advertising budget allocations are another significant factor to consider. A lot of advertising aims to raise client awareness and encourage them to do research online [13].

ii. A combination of sales and artificial intelligence

How should sales be structured in the age of AI, and what skills will salespeople require? First, how should the sales organization be structured such that AI bots and human salespeople are both included? And how can the company balance AI's emphasis on customers' explicit wants with salespeople being comparably more equipped to deal with concerns such as good customer service? Finally, can salespeople be taught/trained to deal with client concerns about AI, particularly data privacy and ethical problems? For sales processes to be successful, innovation is required across the board, not only in terms of AI technology [13].

D. The process of artificial intelligence innovation

Businesses must find out the best way to create AI in light of the ambiguity around its effect. This was confirmed in conversations with top management at Stitch Fix, who said that the business encourages their data scientists to take on projects on their own, which means they're always doing tests on new project ideas [13,14]. Style Shuffle, an app designed by a Stitch Fix data scientist, is similar to Tinder and allows users to specify preferences for different clothing styles. This app had two purposes: it educated stylists about their clients' preferences (as was intended), and it assisted them in finding the right stylists to work with (an unexpected benefit). Consumers responded more favorably to clothing ideas from designers who "swiped" on the application in the same way as certain customers. To get better results when deploying AI, companies should let their data scientists work on unapproved "pet projects," a strategy previously used by companies like 3M in research and development. It's a worthwhile investment of time to figure out the best approach to use AI such that it delivers both anticipated and unforeseen advantages [14,15].

IV. FUTURE IN THE U.S

Marketers don't have to wait for the future; it's already here. Today's marketers may use smart, automated, and human-centered solutions to engage consumers in authentic, value-added ways. By providing customers with the customized, productive, and fascinating experience they anticipate, companies may gain a significant competitive edge in the marketplace.

The corporations in the United States will continue to enhance their artificial intelligence capabilities [16]. Starbucks is a company that collects and analyzes consumer data via the use of loyalty cards and mobile applications. They made their intentions known in 2016. Since then, they have amassed a substantial amount of app experience. Keep track of your purchasing history, including when and where you made your purchases. Starbucks employs predictive analytics to analyze this data and provide consumers with a marketing message that is tailored to their interests and needs. These communications contain advice for gaining access to local shops as well as tips for boosting the average order value of a single consumer. Marketing strategy and client behavior are both expected to be significantly altered in the future as a result of artificial intelligence (AI). Watson, IBM's artificial intelligence (AI) platform, is a gregarious companion that can make jokes, answer questions, and even compose music [14]. Google's artificial intelligence (AI) can now read lips better than a professional and can master video games in a matter of minutes. The artificial intelligence developed at MIT can anticipate activity on video two seconds before it occurs. Tesla's artificial intelligence (AI) is at the heart of the company's groundbreaking self-driving automobile. All of these developments seem to be moving us closer to Turing's future of robots with more intellect than humans.

V. ECONOMIC BENEFITS IN THE UNITED STATES

Many companies are already benefitting from AI to improve their marketing operations. For instance, Starbucks collects and analyzes consumer data via the use of loyalty cards and mobile applications. They made their intentions known in 2016. Since then, they have amassed a substantial amount of app experience. Keep track of your purchasing history, including when and where you made your purchases. Starbucks employs predictive analytics to analyze this data and provide consumers with a marketing message that is tailored to their interests and needs. These communications contain advice for gaining access to local shops as well as tips for boosting the average order value of a single consumer. The firms that are farther advanced in the machine learning process also happen to be in industries where their profit margins are high enough that they can afford to invest in machine learning activities. If the profit margins [are just 1 percent or 2 percent], it becomes more difficult. They can only afford to do so much since they don't have the financial resources to accomplish much more than that.

VI. CONCLUSION

This study looked at how artificial intelligence would affect the marketing industry. The use of artificial intelligence-based apps has a bright future, and they will have a significant beneficial influence on marketing in terms of productivity, customer happiness, agility, problem-solving, and decision-making. This, in turn, will increase brand loyalty while also generating substantial cash for enterprises. AI has been pervasive in popular culture for years, and it has the potential to pervade marketing shortly as well. There is a constant hunt for new ways to make data self-aware among scientists, academics, and marketers. Since the introduction of artificial intelligence, the digital marketing industry has seen a significant transformation. It assists businesses in developing effective digital strategies, optimizing campaigns, and increasing their return on investment.

REFERENCES

1. R. Mazhar, A. Awaits, and P. Anand, "Urban planning and building smart cities based on the internet of things using big data analytics," *Computer Networks the International Journal of Computer & Telecommunications Networking*, vol. 10, no. 4, pp. 63–80, 2016.
2. J. Yaqoob, Z. Ji, and M. Shi, "Scenario analysis and application research on big data in smart power distribution and consumption systems," *Proceedings of the CSEE*, vol. 35, no. 8, pp. 1829–1836, 2015.
3. Z. Lv, T. Yin, X. Zhang, H. Song, and G. Chen, "Virtual reality smart city based on WebVRGIS," *IEEE Internet of Things Journal*, vol. 3, no. 6, pp. 1015–1024, 2016.
4. V. Vimarlund and S. Wass, "Big data, smart homes and ambient assisted living," *Yearbook of Medical Informatics*, vol. 9, no. 1, pp. 143–149, 2014.
5. S. Luis, L. Jorge, and S. Pablo, "Managing large amounts of data generated by a smart city internet of things deployment," *International Journal on Semantic Web & Information Systems*, vol. 12, no. 4, pp. 22–24, 2016.
6. T. Hashem, A. T. Ibrahim, and A. Victor, "The role of big data in smart city," *International Journal of Information Management*, vol. 36, no. 5, pp. 748–758, 2016.
7. Y. B. Ren, G. Chen, Y. Han, and H. Zheng, "Extracting potential bus lines of customized city bus service based on public transport big data," *IOP Conference Series: Earth and Environmental Science*, vol. 46, no. 1, pp. 120–125, 2016.
8. F. Q. Niu, Z. Q. Wang, and Y. Hu, "A model of urban spatial evolution process based on economic and social activities," *Progress in Geography*, vol. 34, no. 1, pp. 30–37, 2015.
9. R. Allen, "Expert systems: Artificial intelligence in business", *Artificial Intelligence in Engineering*, vol. 2, no. 2, p. 125, 1987.
10. S. Daskou and E. Mangina, "Artificial Intelligence in Managing Market Relationships", *Journal of Relationship Marketing*, vol. 2, no. 1-2, pp. 85-102, 2003.
11. J. Greene, "Introduction to Mobile Augmented Reality Development in Unity", *The Programming Historian*, no. 5, 2016.
12. T. Liao, "Augmented or admented reality? The influence of marketing on augmented reality technologies", *Information, Communication & Society*, vol. 18, no. 3, pp. 310-326, 2014.
13. N. Liberati, "Augmented reality and ubiquitous computing: the hidden potentialities of augmented reality", *AI & SOCIETY*, vol. 31, no. 1, pp. 17-28, 2014.



13. A. Maxwell, S. Jeffrey and M. Lévesque, "Business angel early stage decision making", *Journal of Business Venturing*, vol. 26, no. 2, pp. 212-225, 2011.
14. P. Ratnasingam, "Trust in inter-organizational exchanges: a case study in business to business electronic commerce", *Decision Support Systems*, vol. 39, no. 3, pp. 525-544, 2005.
15. S. Rouhani, A. Ashrafi, A. Zare Ravasan and S. Afshari, "The impact model of business intelligence on decision support and organizational benefits", *Journal of Enterprise Information Management*, vol. 29, no. 1, pp. 19-50, 2016.
16. M. Spencer, "How to Achieve "WOW" Customer Service", *Yearbook of Dentistry*, vol. 2006, pp. 288-289, 2006.
17. D. Steiger, "Decision Support as Knowledge Creation", *International Journal of Business Intelligence Research*, vol. 1, no. 1, pp. 29-47, 2010.
18. C. Heller Baird and C. Gonzalez- Wertz, "How top performers achieve customer- focused market leadership", *Strategy & Leadership*, vol. 39, no. 1, pp. 16-23, 2011.