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The impact of artificial intelligence on consumer behavior: Insights and implications

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Abstract---This paper aims to study the impact of artificial intelligence on consumer behavior, the study of consumer purchasing behavior is of great importance to marketers because it provides more understanding of the consumer's expectations, Emphasis has been placed on studying the impact on consumer behavior based on the use of artificial intelligence, which aims to gather greater information on consumers' needs and preferences and to employ them in such a way as to drive consumer decision-making, the subject's literature was reviewed to explain this impact. This study found an understanding of how artificial intelligence influences consumer purchasing behavior as it is necessary to understand the important role that artificial intelligence can play at each of the five stages that a consumer goes through when making a purchase decision.

Keywords---artificial intelligence, consumer behavior, Artificial Intelligence.

Introduction

In the long run, Artificial intelligence is sure to become a key part of the world's economy and marketing. New developments in the automation of AI-driven processes are fundamental changes in this area, as evidenced by the reshaping of ideas. Therefore, research into Artificial intelligence and its role in marketing is a topic of particular interest, and we can gain insight into the future impact of AI on the marketing field By exploring its current applications, future use plans, implementation strategies, and areas for improvement. (James Cannella, 2018)

Artificial intelligence is an important way to move customers from potential to expected and significantly increases customer retention opportunities, depending on modern applications including smart chat software and email marketing and the use of interactive websites and other digital marketing tools, on the other hand, intelligence depends on the collection of data from various sources such as

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2764

networking sites, opinions and reviews available online and then analyze it for later exploitation to build content that is compatible with the interests of target clients, known as machine learning.

By integrating artificial intelligence into marketing strategies, companies can improve their understanding of customer paths and provide personalized content that meets the needs of each stage of the customer journey. Based on historical data, these technologies identify content that drives customer revisits to the website, and help identify customers at risk of unsubscribing to improve retention strategies. (S. Verma, R. Sharma, S. Deb, D. Maitra, 2021).

Artificial intelligence is a wide-ranging system, providing time to marketers. It helps provide customer needs and influence their purchasing model. This will improve profits and eliminate loss resulting from ineffective efforts which allows time to be allocated on what provides real value to customers, this will also contribute to raising the need for smart tasks rather than using costly human resources.

1. What is Artificial Intelligence?

Artificial intelligence, in fact, is the sum of the strenuous efforts devoted by scientists of psychology, linguistics, language, mathematics and computer science, in 1822 Charles Bay Page designed the world's first computer machine, after which George Paul developed the theory of forced equations in 1854, from which the foundation of computer science, the bilateral equation, emerged. "Language (0, 1)", and in 1941, the computer, which was the first step of artificial intelligence, appeared until 1948 when the world came out. "Alan Turing" is the concept of human thinking with the first idea of being able to think like a human being, the counterpart to thinking (Ad Al-Samad and Ahmed, 2020).

By 1958, the programming language had been invented in the field of AI, to come the year of the 1980 when human simulation was achieved, and so more and more attempts to develop AI continued, and in 1987, AI continued to progress and evolve further to today (Adl Al-Nour, 2005).

"Artificial intelligence is a broad and comprehensive field that is not only technological in that it combines technology, electronics, languages, scientific research, industry and academia." Instead of looking at a general definition of Artificial Intelligence, one can also restrict oneself to the definition of artificially intelligent systems. There are many definitions around, but most of them can be classified into the following four categories: *f* systems that think like humans *f* systems that act like humans *f* systems that think rationally *f* systems that act rationally...« (Joost N. Kokt, 2018).

2. What is Consumer Behavior ?

The consumer is every individual who makes the purchase, whether for personal consumption or collective consumption of the family (Jisana T. K 2014, p24).

Consumer behavior, such as managing people's resources, means time, money and effort to consume. It includes various stages before or after consumption. It answers the following questions: what is it buying: and why? And when? Where? And how many?

Engel defines consumer behavior as "the sum of acts, direct acts and direct acts by individuals in order to obtain a particular commodity or service as specified at a given time in a particular place" (hamad, 1993, p43).

It is also defined as "the behavior displayed by the consumer in the search and purchase and use of goods and services or ideas that he expects will satisfy his wishes or needs and depending on the purchasing potential available" (Saeed. a. fettah, 1998, p15).

It defined also as: "*the processes involved when individual select, purchase, use or dispose of products, services, or experiences to satisfy needs and wants*" (Solomon, 2015, p. 28).

"This concept is considered as one of the most important in the area of marketing since it manages to study and understand which products and brands consumers buy. With this, it is possible to realize *"why they buy them, when they buy them, where they buy them, how often they buy them, how often they use them, how they evaluate them after the purchase, and whether or not they buy them repeatedly."* (Schiffman & Wisenblit, 2015, p. 30)

3. Why Studying Consumer Behavior ?

Marketers must have access to data concerning consumers, buying habits and which kinds of media they favour, in order to develop convincing communication programs. 1)-Who makes the buying decision? 2)-Who influences the buying decision? 3)-What motivates the buyers and people to take action? " (Jisana T. K 2014, p24), The reasons for the need to study consumer behavior can be summarized as follow: (K. B. Naveen. Kumar, B, 2022, p. 41-42).

- 3.1. New product development:** New product development depends mainly on meeting the needs and aspirations of target customers. To achieve this goal, marketers have to gather accurate and comprehensive information about the market. Therefore, studying consumer behavior is a vital basis for ensuring the success of the product development process.
- 3.2. Achieving marketing objectives:** To ensure the company's survival, continued growth and profitability in a highly competitive marketing environment, it must be distinguished in identifying and meeting unmet customer needs, in a faster and more efficient manner than competitors. Hence, consumer behavior analysis plays a pivotal role in achieving marketing goals.
- 3.3. Forecasting Market Trends:** Understanding consumer behavior contributes to looking ahead to the market's future trends. This prediction gives marketers enough time to prepare to seize emerging opportunities or deal effectively with potential challenges and threats.

- 3.4. Differentiation of customer segments:** The market is characterized by a wide variety of consumer needs and desires, with each segment of customer differing from the other in its requirements. For each segment, the marketer needs to design a dedicated marketing strategy. The Consumer Behavior Study provides detailed information on this diversity, helping design appropriate marketing offerings for each category of buyer.
- 3.5. Customer attraction and retention:** Marketers depend on designing their offerings to understand consumers' needs and prepare the market to receive their products. When these needs are effectively met, selling products becomes a easier process. In addition, continuous follow-up of customer behavior contributes to meeting their changing expectations, helping companies build long-term relationships with their customers.
- 3.6. Enhancing competitiveness:** Analyzing consumer behavior is an effective tool in the face of competition. By responding to customer expectations, companies can offer competitive advantages that enhance their market position and increase their competitiveness effectively.

4. Factors Influencing Consumer Behavior

There are many factors influencing consumer behavior personal, cultural, and social factors form the basis for understanding consumer behavior, enabling marketers to develop strategies suited to different categories:

4.1. Personal Factors

- a) **Age:** Purchase needs vary by age group; Young people prefer fashionable clothing, while older people tend to property like homes.
- b) **Income:** determines purchasing power; High income earners focus on luxuries, while middle or low income earners focus on basic needs.
- c) **Occupation:** Affects the quality of purchases commensurate with the nature of the work.
- d) **Lifestyle:** Directs consumer choices according to lifestyle, such as focusing on healthy products in a healthy lifestyle.

4.2. Cultural factors

- a) **Culture:** defines values and customs that affect individuals' wishes and behavior, and differs between countries.
- b) **Subculture:** Includes religions, regions and nationalities, helping marketers design products suited to specific groups.
- c) **Social class:** Affects the pattern of purchase based on factors such as income, education and wealth.

4.3. Social factors

- a) **Reference groups:** Affect purchasing decisions, especially in visual products such as fashion and cars.
- b) **Family:** Plays an essential role in guiding purchasing decisions within the family.

- c) **Role and status:** Individual's status and social role affect their choices to reflect their situation.

5. Consumer Decision-Making.

There are three different types of decision making (Solomon, 2015), namely:

- **Customary:** This type of decision-making is described as a choice referred to as "routine" decision-making. This happens because consumers do not seek information when identifying a problem. Selection is simple based on custom.
- **Collective:** happens when many decision makers are involved. This means that other people are involved in solving the problem. When more than one person decides which product/services they buy for multiple people.
- **Knowledge:** This type of decision-making is the most traditional and is considered the right model to use to understand how the consumer behaves. Here, customers act with caution and search for as much information as possible and assess in detail all alternatives available to them.

6. The Impact of Artificial Intelligence (AI) on Consumer Purchase Behavior

6.1. Need and Want Recognition.

The step of recognizing customers' needs is the starting point of the consumer journey. Companies focus on identifying consumer requirements and devising marketing strategies that meet these requirements (Kotler et al., 2017). Needs are stimulated by general classifications and not by brands themselves (Batra and Keller, 2016). Therefore, accurately identifying these needs poses a major challenge.

AI provides an exceptional ability to understand the emerging needs and desires expressed by consumers online. AI enables marketers to create comprehensive consumer profiles quickly and in real time. Digital fingerprints are developed for individuals based on their online activities, such as social media updates, e-purchases, and comments, allowing machine learning systems to automatically update users' profiles. For example, the media company Astr "has benefited from Microsoft's Azure AI" system to analyze billions of data points, helping it accurately and quickly identify customers' needs, and customize appropriate content for them.

In addition, AI contributes to enhancing the ability of marketers to identify customers' desires. For example, Pinterest uses image recognition technology to analyze users' preferences based on the images they comment, thus displaying images that correspond to their interests (Kietzmann, 2018). "Adobe", based on AI technologies, also helps target consumers with similar profiles and interests to their current users

6.2. Information Search

Following the identification of needs, the information search phase comes, as consumers begin to explore possible options to meet their requirements. The role of marketers here is to introduce their brands into the consumer choice circle. To achieve this, marketers rely on ads to improve the visibility and appeal of their

brands, by optimizing search engines, paid ads, and re-targeting consumers via organic ads (Batra and Keller, 2016).

AI refers to another industrial shift, with companies embracing this technology emerging early as a major beneficiary. According to a survey by “Gartner”, companies that have embraced support for audio and visual research using artificial intelligence have seen an increase of more than 30% in digital trading revenue by 2021.

AI-enabled research tools contribute to providing accurate and customized results for consumers in real time, through analysis and conclusion of the most relevant information.

For marketers, artificial intelligence has become an indispensable tool in effectively targeting customers. For example, “Google Adwords” provides accurate data about potential customers, contributing to their targeting more effectively. AI also helped “Zendesk” collect and target high-quality data about potential customers by creating advanced profiles and offering personalized ads via “Facebook” (Batra and Keller, 2016).

6.3. Evaluation of Alternatives.

The evaluation step represents the stage at which consumers review different options after collecting information about the product or service they wish. One of the notable benefits of AI integration is its ability to personalize content, using potential customer data to deliver content compatible with their interests. Website customization is another example of this technology, viewed as individual marketing that enables a more private shopping experience, increasing the attractiveness of websites and contributing to enhanced consumer interaction. AI algorithms and machine learning systems also help to provide adequate incentives for website visitors, enhancing their chances of being turned into real clients.

6.4. Purchase Decision Making

The final stage in the consumer journey is to make the purchase decision. This phase begins when consumers determine which brand they wish to acquire. Here the role of AI in guiding customers to the best choices suited to their needs appears, and can even facilitate the ordering process in multiple ways.

6.5. Post-purchase behaviors

The fifth stage of the consumer path relates to post-purchase behavior, which includes consumer actions after acquiring and using products or brands. AI plays an important role in enabling companies to effectively handle all potential customer queries. For example, AI-enabled “chat robots” provide marketers with the opportunity to interact with customers after completing a purchase. (Mona H. Mussa, 2020, p301-305).

The marketer should pay attention to the customer experience after completing the purchase, including:

Level of satisfaction after purchase, Post-purchase actions, how to use and dispose of the product.

6.5.1. Satisfaction after purchase: satisfaction is considered to be a result of the conformity of the customer's expectations with the actual performance of the product. If performance does not live up to expectations, the customer is disappointed.

6.5.2. Conduct after purchase: satisfied customers often repurchase the product and convey their positive impressions to their surroundings from family, friends and colleagues. In contrast, if the customer is not satisfied, they may take various actions such as discontinuing the use of the product, requesting compensation, making legal complaints, or warning others about the product's experience. Therefore, it is the responsibility of the marketer to reduce the likelihood of customers feeling dissatisfied.

6.5.3. Usage and disposal after purchase: It is important that marketers follow customers' behaviors regarding the use of the product and the way it is disposed of. This information can be a valuable source for analyzing customers' needs and identifying potential problems.

Conclusion

The results of this study show that artificial intelligence has become a critical tool in marketing, especially in terms of understanding consumer purchasing behavior and improving interaction strategies with them. It has been emphasized that AI contributes to enhancing the effectiveness of marketing campaigns through the ability to accurately collect and analyze data, allowing customized consumer needs to be met at various stages of the purchase journey. AI technologies, such as machine learning and big data analysis, also contribute to improving customer interaction, delivering content that fits their interests and enhances their satisfaction and loyalty.

Through this study, it has become clear that AI not only facilitates decision-making within companies, but also improves customer experience, increasing customer retention and achieving sustainable competitive advantages. Therefore, the adoption of artificial intelligence is an urgent necessity for all companies wishing to stand out and grow in a competitive market environment.

Recommendations

- Deepening the use of AI at multiple stages of the marketing strategy: Companies must adopt AI in an integrated manner at all stages of the marketing strategy, from analyzing customer data to customizing marketing campaigns according to individual needs. It is recommended to develop systems that allow better communication with customers using AI in multiple interactions such as smart chat and predictive analysis.
- Investing in improving data recognition and analysis techniques: It is essential that companies invest in building big data analysis capabilities and using

artificial intelligence techniques to identify consumer attitudes and behavioral patterns. This will contribute to increasing the accuracy of forecasts regarding customer preferences and enhance rapid response to market changes.

- Keeping up with technological developments to strengthen competitiveness: It is recommended to follow the latest trends in AI technologies, such as AI and deep machine learning, and apply them in marketing processes to achieve the best performance. Companies should invest in building teams capable of effectively exploiting these technologies to improve marketing strategies.
- Enhancing companies' ability to deal with customers after purchasing: It is essential that companies adopt artificial intelligence technologies to improve after-sales service. AI can be used to analyze customers' feelings after purchasing and provide quick and effective solutions to problems they may face, contributing to improving customer experience and increasing loyalty rates.
- Development of customization-oriented marketing strategies: AI is recommended to be used to analyze consumers' personal data in order to customize marketing offers and content in line with their individual interests. This can enhance the effectiveness of advertising campaigns and increase customers' response.
- Preparing training plans to develop staff skills: Companies should establish training programmes to enhance their employees' skills in the use of artificial intelligence technologies, including in areas such as data analysis, programming, and interaction with smart systems. This helps to raise internal efficiency and ensure the optimal use of modern technologies in marketing strategies.

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