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Role of Artificial Intelligence (AI) in enhancing M-Commerce

Dr. Ashwani Mishra
Sector A Sitapur Road Yojan ES 597 Engineering College Cahurha Lucknow 226021

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ABSTRACT:
Artificial Intelligence (AI) has revolutionized mobile commerce (M-commerce), changing how companies engage with their clientele. This paper examines the opportunities and challenges presented by AI in M-commerce, emphasizing its effects on personalized shopping, customer service, and operational efficiency, as well as the challenges of data privacy, security concerns, and integration complexities. Technology is being used more and more in today's world, and as science and technology advance, new things and innovations are occurring. The retail sector is also undergoing a number of changes, and it is no longer limited to physical stores that sell various consumer goods. Customers' needs are met right there at their fingertips. Many e-commerce companies are operating efficiently and use artificial intelligence to deliver optimal services. Numerous people who use smartphones have access to 4G internet services around the country. They have become fairly accustomed to utilizing e-commerce on their mobile devices. They no longer rely on desktops or personal computers to make their online purchases. Their very sophisticated smartphones come with a number of capabilities that make m-commerce transactions easy and rapid. This study examined the degree to which artificial intelligence is influencing m-commerce. Personalized customer service and artificial intelligence (AI)-enhanced voice search in m-commerce are two of the main topics this study covers. The goal of the study is to shed light on how AI may be used to maximize the growth of M-commerce.

Key words: Artificial intelligence (AI), M-commerce, personalized customer services, voice search

I. INTRODUCTION

Mobile commerce is referred to as commerce. Using mobile phones and other wireless portable devices to buy and sell goods and services is referred to by this phrase. For instance, personal digital assistants, or PDAs, are wireless portable gadgets. M-commerce is sometimes referred to as next-generation e-commerce. A business concept known as "e-commerce," or "electronic commerce," involves conducting business online, or via the Internet. One aspect of e-commerce that is expanding quickly is mobile commerce. Consumer trust has increased due to improvements in mobile payment security methods, which has accelerated the adoption rates of m-commerce. It accounted for 60% of internet sales, or e-commerce.

Mobile Commerce Mobile banking; location-based services; electronic boarding passes; mobile ticketing; mobile money transfers; in-app payments; contactless payments; loyalty cards, coupons, and other mobile marketing features are just a few of the new online businesses that have emerged as a result of the growth of mobile commerce. By adopting m-Commerce, companies can reach a wider audience and serve the growing number of mobile users. The primary distinction between mobile and traditional e-commerce is the platform that is utilized for transactions. Desktop or laptop computers are used for e-commerce transactions.

Additionally, m-Commerce enables customers to use their portable devices to make purchases while they are on the go. Artificial intelligence (AI) tools like machine learning, natural language processing, and predictive analytics are becoming essential for improving customer experience due to the explosive rise of mobile commerce. The future of digital retail is being shaped more and more by AI-powered solutions, such as chatbots, recommendation engines, and fraud detection tools. In India, m-commerce has transformed business practices by attracting millions of customers and generating millions of dollars in revenue. Fashion makes up the biggest portion of India's e-commerce business, followed by electronics and then home and kitchen goods. Flipkart, Paytm, Amazon, and Shop Clues are among the M-commerce businesses in India that are expanding the quickest.

By 2030, m-commerce would contribute 2.5 percent of India's GDP, expand 15 times, and reach USD 300 billion. 1. In India, m-commerce

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has completely changed how goods are purchased and sold. In the past, customers had to purchase the necessary goods through conventional store-based purchasing. However, with the rise of e-commerce, customers may now buy goods directly from the producer or seller, which is more convenient and less expensive. AI in m-commerce is beneficial because AI-driven recommendation engines provide a personalized consumer experience by analyzing user behavior, preferences, and previous transactions to make product recommendations that increase conversion rates and customer satisfaction.

AI-powered chatbots and virtual assistants offer round-the-clock customer service by responding to questions, helping with purchases, and effectively managing complaints, all of which save operating expenses. Another way AI improves search capabilities is through voice and picture search, which makes it simpler for users to locate things fast. AI in M-Commerce Aids in Security and Fraud Detection By examining trends and irregularities in transactions, machine learning algorithms detect fraudulent activity, boosting mobile commerce security and confidence. On the other hand, data security and privacy present AI's biggest obstacles in m-commerce. Large volumes of consumer data are used by AI, which raises questions about data abuse, privacy violations, and legal compliance.

Complexity of Integration AI implementation calls for a large infrastructure investment, knowledgeable staff, and smooth connection with current mobile commerce systems. Ethical Concerns and Bias Biases in AI algorithms might result in discriminatory or unfair suggestions, which would undermine consumer happiness and confidence. Adoption and Consumer Trust User adoption rates are impacted by consumers' skepticism regarding AI-driven suggestions and automated interactions, despite the technology's advantages.

Using secondary sources for this paper, the author discovered that Artificial Intelligence (AI) will continue to support the growth and reform of e-commerce in the future, while deep learning platforms and technologies such as voice analysis, biometrics, image recognition, video analysis, text analysis, and natural language processing (NLP) will develop steadily. According to this study, AI will have capabilities that influence anticipated results, enabling real-time modifications to key business elements to optimize profits and organizational results. AI's effects on m-commerce are especially apparent when it comes to customer satisfaction and retention.

II. REVIEW OF LITERATURE

Artificial intelligence makes it possible to evaluate vast amounts of data in a short amount of time and to understand consumer consumption habits, which is particularly useful for e-commerce service providers. Artificial intelligence is being used by Google and Microsoft to improve their services, and e-commerce companies may utilize this technology to view the browsing and purchase history of potential customers (Shyna Kakkar and Vishal Monga, 2017).

Fast and efficient services are essential to e-commerce's success. They must have a strong supply chain for that reason in order to ensure prompt delivery of the items. Effective inventory management is essential to operating the firm with the least amount of working capital. Artificial intelligence may assist sustain and increase sales in all of these sectors by understanding market trends and seasonal fluctuations, analyzing local suppliers' performance promptly, and automating processes to offer services effectively (Gawali, 2019). Rao Thirupathi The healthcare, pharmaceutical, hotel, banking, insurance, airline, and e-commerce industries may all benefit greatly from the usage of artificial intelligence in today's commercial world.

Artificial intelligence capabilities such as face and palm recognition are useful for comprehending the psychology and behavior of customers (Thirupathi Rao and Debnath Bhattacharyya, 2019). Artificial intelligence must be used to cater to what consumers are looking for, interested in, and expecting in order to deliver better services and meet their expectations. Artificial intelligence will make it possible to promote items effectively and outperform competitors in terms of profitability (Najib et al. 2019). Customers' interests and preferences may be mapped and analyzed to enable m-commerce systems deliver individualized services by suggesting relevant items and offerings to each individual client.

III. RESEARCH OBJECTIVES:

1. To research how artificial intelligence benefits m-commerce by providing individualized customer support.

2. To research how artificial intelligence contributes to m-commerce voice search services

IV. RESULTS AND DISCUSSION:

4.1. Businesses are adopting AI to improve their M-Commerce strategies:

Since more and more companies are implementing AI to enhance their M-Commerce strategies, the future of mobile commerce appears

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to be quite bright. The following are some significant uses of AI in m-commerce that we can comprehend following a thorough analysis:

4.1.1. Amazon: One of the most significant m-commerce sites in the world, Amazon, has led the way in m-commerce's use of AI. Its AI-powered recommendation system looks at past purchases and purchasing patterns to make the best product recommendations. Furthermore, speech-enabled shopping is made possible by Alexa, Amazon's AI assistant, which enables users to place purchases, monitor parcels, and browse product possibilities using voice queries. The majority of mobile users (94%) were determined to be Amazon customers during the research.

4.1.2. Alibaba: Alibaba, a well-known m-commerce platform in China, has incorporated artificial intelligence (AI) into its m-commerce solutions to provide its clients with tailored product suggestions. Approximately 55% of people were aware of Alibaba.

4.1.3. Sephora: The well-known cosmetics company Sephora uses artificial intelligence (AI) in its mobile app to provide virtual try-on experiences. Without going to a real store, customers can use the cameras on their smartphones to see how various beauty items would appear on their faces and make well-informed judgments. Like Alibaba, 52% of mobile users were aware of Sephora.

4.1.4. EBay: AI is used by eBay, a well-known online marketplace, to enhance search results and optimize pricing tactics. To provide customers with pertinent search results and competitive price alternatives, AI algorithms gather a variety of data, including rival pricing, product demand, and consumer behavior.

4.1.5. Flipkart and Snapdeal: Flipkart evolved become a one-stop store for food and gadgets. After concentrating on sales and discounts at first, Snapdeal developed into a full-fledged marketplace. Approximately 98% of the participants in this study expressed highly significant interest in these two apps, which were also the most popular on mobile devices. Overall, this study demonstrated that m-commerce was deemed challenging, fascinating, and important to growth. This may be because it offered quick search, support for regional languages, simple return procedures to foster confidence, Cash on Delivery (COD), and substantial savings.

4.2. Facilities which improve the M-commerce: Thanks to advancements in infrastructure, technology, and user experience, m-commerce has expanded dramatically, particularly in nations like India. These are a few essential amenities that improve M-commerce.

4.2.1. Chat bots:

Chatbots are used by m-commerce businesses to offer their clients round-the-clock support. These chatbots serve as human substitutes and primarily resolve client concerns at any time of day because staff members are not always accessible to assist customers with their difficulties. AI is capable of managing a wide range of data-related tasks, which improves M-Commerce chatbot performance and enables customers to access a range of services. The following are some key applications for chatbots:

i. Artificial intelligence-powered chatbots can alert clients when specific goods are sold out and suggest substitutes. Based on their answers to simple questions, they may also propose products to customers or inform them of delivery dates.

ii. Statistics show that 75% of online customers desire round-the-clock customer support, which is impossible for people to provide. By introducing a simple FAQ chatbot to their website, businesses may save customer care expenses by up to 40%. Chatbots can even help consumers with complicated questions by connecting them with actual people.

4.2.2. Image Search and Recognition:

Customers who are unsure about what to label a product they come across while browsing the internet can utilize this AI application. Using AI technology, m-commerce businesses may provide a service where clients just point their camera at a product to receive a description or comparable recommendation, doing away with the need to know the keywords to search for it. In order to provide customers with a quick, practical, pleasant, and stress-free shopping experience overall, they may even submit a photo of a product and receive pertinent information about it or information about where they can purchase it.

4.2.3. Cyber security in m-Commerce:

Artificial intelligence has huge promise in the field of security. When assaults do occur, machine learning may assist detect them, stop them from happening again, and react to them more skillfully. However, the same technology that improves security systems may also open up new attack vectors for hackers. Machine learning needs to be handled carefully if the objective is to protect systems without providing hackers with new tools.

While artificial intelligence (AI) has the potential to improve our lives, it also has the ability

to reduce the effectiveness of our security measures. New generations of malware that can avoid detection can be produced using the same AI that can identify a possible cyberthreat. Consequently, AI has emerged as a contentious issue in cybersecurity. In order for machines to implement efficient security measures, they must first get enough training. Second, it's important to avoid misusing machines. In other words, human experience in identifying and fixing vulnerabilities should not be replaced by machine learning algorithms.

According to the data gathered, 86% of executives believe AI has a high or very high role in providing individualized services to clients in m-commerce, while 14% believe AI plays a moderate role. According to E and Nauvin, it is not helping to provide clients with individualized services, which amply demonstrates the significance of AI. The average score for AI's role in delivering individualized services is 78%, which is very amazing. The T test was performed at a 60% level to see whether this contribution is substantial. Once more, the computed P values were less than 0.05, indicating a substantial impact on the market.

Since voice search is infrequently used, intelligence plays a very small role. It amply demonstrates AI's conflicting significance. The average score for AI's role in voice search services is 83%, which is a respectably high rating. The T test was performed at a 60% level to see whether this contribution is substantial. The computed P value, which is once more less than 0.05, demonstrates how much AI contributes to the provision of voice search services to consumers. About 68% of customers expressed great satisfaction with online EMI-based purchasing for products like air conditioners, refrigerators, televisions, and other items during the study.

V. CONCLUSION:

M-commerce has been profoundly changed by AI, which presents businesses with countless chances to improve consumer satisfaction, increase security, and optimize processes. To fully realize AI's promise, however, issues including data privacy, moral dilemmas, and implementation difficulties must be resolved. Future studies should examine new AI developments and how they affect the sustainability of mobile business. With developments in deep learning, augmented reality, and blockchain integration, the future of AI in M-commerce is bright. Companies should prioritize moral AI procedures and openness in data use.

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