



Original Article

ARTIFICIAL INTELLIGENCE IN COMMERCE: AN ACADEMIC ANALYSIS OF ITS IMPACT ON MARKETING, SALES, AND CUSTOMER EXPERIENCE

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Manuscript ID: IJAAR-B130344
ISSN: 2347-7075
Impact Factor – 8.141

Volume - 13
Issue - 3
January – February 2026
Pp. 272 - 278

Submitted: 22 Jan.2026
Revised: 30 Jan. 2026
Accepted: 10 Feb. 2026
Published: 28 Feb. 2026

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Quick Response Code:



Website: <https://ijaar.co.in/>



DOI: 10.5281/zenodo.20321943

DOI Link:

<https://doi.org/10.5281/zenodo.20321943>



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Abstract:

Artificial Intelligence (AI) has become a fundamental technology in today's business landscape, greatly affecting how companies develop marketing strategies, oversee sales processes, and create customer experience models. The swift progress in machine learning, big data analytics, and intelligent automation has enabled businesses to shift from intuition-based decisions to predictive and data-driven approaches. This study explores the role of AI in commerce, focusing on marketing personalization, sales optimization, and enhancing customer experiences. A descriptive research approach utilizing secondary data sources, such as academic journals, industry reports, and conference proceedings, was employed. Case studies of Amazon, Netflix, Flipkart, and Starbucks demonstrate the real-world applications of AI in commercial environments. This study also addresses the challenges of AI adoption, such as data privacy issues, ethical concerns, high implementation costs, and skill shortages. The results

This study also addresses the challenges of AI adoption, such as data privacy issues, ethical concerns, high implementation costs, and skill shortages. The results suggest that the strategic and responsible use of AI enhances operational efficiency, customer engagement, and managerial decision-making, thus offering a sustainable competitive advantage in the digital economy.

Keywords: Artificial Intelligence, Commerce, Marketing Analytics, Sales Management, Customer Experience, Machine Learning

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How to cite this article:

Vanita Ganesh Bagal. (2026). Artificial Intelligence In Commerce: An Academic Analysis Of Its Impact On Marketing, Sales, And Customer Experience. International Journal of Advance and Applied Research, 13(3), 272 - 278. <https://doi.org/10.5281/zenodo.20321943>

Introduction:

The global business environment has undergone substantial transformation owing to rapid digitalization. Among emerging technologies, Artificial Intelligence (AI) has gained prominence for its ability to simulate human intelligence and

support complex decision-making processes (Russell & Norvig, 2021). AI technologies, such as machine learning, natural language processing, predictive analytics, and chatbots, are increasingly used in commerce to improve efficiency and



customer engagement (Davenport & Ronanki, 2018).

In highly competitive markets, businesses must analyze vast amounts of customer data, predict demand patterns, and deliver customized products and services. Traditional systems often struggle to meet these requirements because of their limited data processing and analysis capabilities. AI addresses these challenges by enabling automation, offering sophisticated analytics, and supporting intelligent decision-making systems (Kotler et al. 2021).

Objectives of the Study:

The objectives of this study are as follows:

- To examine the concept and importance of Artificial Intelligence in commerce.
- Analyze the role of AI in marketing activities.
- Studying the impact of AI on sales processes.
- To evaluate how AI enhances the customer experience.
- To identify challenges and future opportunities related to AI adoption in commerce.

Research Methodology:

This study followed a descriptive and analytical research design. Secondary data were collected from books, peer-reviewed journals, industry reports, and reliable online sources related to artificial intelligence and commerce. The collected information was systematically reviewed and analyzed to understand the applications and implications of AI in marketing, sales, and customer experiences.

Artificial Intelligence in Marketing:

Artificial Intelligence has transformed modern marketing by enabling data-driven and customer-centric practices.

1 Personalized Marketing: AI-driven algorithms enable personalized marketing by analyzing customer data, such as demographics, browsing behavior, purchase history, and digital interactions. By integrating insights from multiple data sources, AI systems can accurately predict individual preferences and deliver relevant product recommendations or targeted advertisements in a timely and context-aware manner (Chaffey and Ellis-Chadwick, 2019).

This data-driven personalization improves customer engagement by increasing the relevance of marketing messages and reducing the information overload. When content aligns with customer needs, response rates and purchase likelihood increase, leading to higher conversion rates and stronger customer relationships, making AI-enabled personalization a key element of modern marketing strategies (Kotler et al., 2021; McKinsey & Company, 2023).

2 Predictive Analytics : Predictive analytics uses machine learning techniques to analyze historical data and identify patterns that help forecast future market trends and customer behaviors. These forward-looking insights support data-driven marketing decisions and strategic planning (Chaffey and Ellis-Chadwick, 2019).

By aligning marketing strategies with the expected demand and market conditions, predictive analytics also helps optimize budget allocation for high-impact activities. Consequently, organizations can improve their marketing efficiency and achieve higher returns on investment (McKinsey & Company, 2023).

3 Chatbots and Virtual Assistants: AI-enabled chatbots and virtual assistants support real-time customer communication by automatically handling



inquiries and guiding users through the purchase process. Their ability to manage multiple interactions simultaneously ensures timely and consistent service delivery to customers.

By reducing reliance on human customer support, AI-driven conversational agents improve organizational responsiveness, lower operational costs, and enhance overall customer satisfaction (Davenport and Ronanki, 2018).

4 Social Media and Content Marketing: Artificial Intelligence plays a vital role in social media and content marketing by analyzing user-generated data across digital platforms. Using techniques such as sentiment analysis and trend detection, AI helps marketers understand audience opinions and evaluate content performance through engagement metrics such as reach and clicks (Chaffey & Ellis-Chadwick, 2019).

These insights enable organizations to develop content strategies aligned with audience preferences, thereby improving brand visibility, audience engagement, and the overall effectiveness of their social media marketing efforts.

Artificial Intelligence in Sales:

Artificial Intelligence has significantly improved sales performance by introducing automation into routine and time-consuming activities while simultaneously strengthening data-driven decision-making processes. AI-based systems analyze large volumes of sales and customer data to generate actionable insights that support sales planning and execution processes. As a result, sales teams can focus more on strategic tasks, such as relationship building and value creation, rather than administrative work.

By enabling faster analysis and more accurate predictions, AI contributes to improved sales efficiency, higher productivity, and better

alignment between sales strategies and market demands. These capabilities make AI an essential tool for enhancing the overall effectiveness of sales operations in modern organizations (McKinsey and Company, 2023).

1 Sales Forecasting: AI-driven forecasting models examine past sales records in combination with current market trends and relevant external variables to estimate future sales performances. By applying advanced analytical and machine learning techniques, these models produce more reliable demand predictions than traditional forecasting methods do.

Accurate sales forecasts support organizations in making informed decisions regarding inventory management, pricing policies, and promotional planning. Consequently, businesses can reduce the risk of overstocking or stock shortages while aligning sales strategies with expected market conditions, thereby improving overall operational efficiency (Davenport & Ronanki, 2018).

2 Lead Scoring and Management: AI-enabled Customer Relationship Management (CRM) systems support sales functions by systematically assessing potential customers based on their probability of conversion. These systems analyze multiple factors, such as customer behavior, interaction history, and engagement levels, to assign priority scores to leads. By doing so, sales teams gain clearer visibility into which prospects are most likely to generate value for the company.

This intelligent prioritization allows sales professionals to concentrate their efforts on high-potential leads rather than distributing resources evenly across all prospects. Consequently, organizational productivity increases, sales cycles become more efficient, and overall sales performance improves through better allocation of time and resources (Kotler et al., 2021).



3 Dynamic Pricing: AI-driven dynamic pricing systems enable organizations to continuously modify product prices by analyzing real-time data related to market demand, competitive pricing structures, and customer purchasing behavior. By integrating these variables, AI models support flexible pricing decisions that can quickly respond to changing market conditions.

This adaptive pricing approach allows firms to maintain their competitiveness while capturing the optimal value from each transaction. Consequently, organizations can improve revenue generation and pricing efficiency without compromising market positioning, making dynamic pricing an important strategic application of AI in sales management (Chaffey & Ellis-Chadwick, 2019).

4 Automation of Sales Processes: Artificial Intelligence facilitates the automation of various sales-related activities, including order handling, customer follow-ups, and performance reporting. By streamlining routine and repetitive tasks, This automation enables sales professionals to devote greater attention to high-value activities such as building customer relationships, understanding client needs, and developing strategic selling approaches. Consequently, organizations benefit from improved sales efficiency, faster response times, and more consistent sales operations, making automation a critical application of AI in modern sales management (McKinsey & Company, 2023).

Artificial Intelligence in Customer Experience:

In contemporary commerce, customer experience has emerged as a critical factor in gaining and sustaining competitive advantage. Artificial Intelligence supports organizations in enhancing customer experience by enabling highly personalized, efficient, and consistent interactions across multiple channels and touchpoints. By

integrating data from various customer interactions, AI systems provide a unified view of customer needs and expectations.

These capabilities allow businesses to deliver timely and context-aware responses, reduce service friction, and improve overall satisfaction. As a result, AI-driven customer experience management strengthens customer relationships and fosters long-term loyalty, making it a strategic priority for modern organizations (Kotler et al., 2021).

1 Customer Support Services: AI-powered chatbots and virtual assistants play a vital role in modern customer support by delivering continuous, round-the-clock service to customers. These intelligent systems are capable of handling inquiries, resolving common issues, and providing assistance without interruption, which significantly reduces response time and ensures service availability at all hours.

By maintaining consistent service quality and minimizing reliance on human support staff, AI-driven customer support solutions help organizations lower operational costs while improving customer satisfaction. As a result, businesses can offer reliable and efficient support services that enhance overall customer experience (Davenport & Ronanki, 2018).

2 Customer Behavior Analysis: Artificial Intelligence systems enable organizations to systematically examine customer interactions occurring across both digital and physical channels. By aggregating and analyzing data from multiple touchpoints, AI helps identify customer preferences, expectations, and recurring pain points throughout the customer journey.

These data-driven insights allow businesses to refine their service processes, address customer concerns more effectively, and deliver experiences that align closely with customer needs.



Consequently, AI-supported behavior analysis contributes to improved service quality, higher levels of customer satisfaction, and more informed managerial decision-making (McKinsey & Company, 2023).

3 Recommendation Systems: Recommendation systems apply machine learning techniques to analyze customer preferences, browsing patterns, and historical purchase behavior in order to generate personalized product and service suggestions. By processing large volumes of customer data, these systems are able to identify items that are most relevant to individual users at a given point in time.

Such personalized recommendations improve the overall shopping experience by reducing search effort and increasing the perceived usefulness of product offerings. In turn, this targeted approach supports higher purchase likelihood and sales growth, making recommendation systems a critical application of AI in customer experience management (Russell & Norvig, 2021).

4 Customer Retention and Loyalty: Artificial Intelligence tools support customer retention initiatives by detecting behavioral patterns that indicate a risk of customer churn. Through the analysis of purchase history, engagement levels, and interaction frequency, AI systems can identify customers who are more likely to discontinue their relationship with the organization.

Based on these insights, organizations can implement targeted retention strategies, including personalized incentives, customized offers, and loyalty programs designed to strengthen customer relationships. Such AI-driven interventions contribute to higher retention rates, improved customer loyalty, and sustained long-term profitability, highlighting the strategic value of AI in customer relationship management (Kotler et al., 2021).

Impact of AI on Commerce:

Empirical evidence indicates that Artificial Intelligence significantly influences modern commerce across marketing, customer support, and operational functions. In marketing, AI-driven personalization enables organizations to tailor advertisements and product recommendations based on individual customer preferences. E-commerce platforms such as Amazon and Flipkart use AI to analyze browsing and purchase data, thereby improving customer engagement and conversion rates (Huang & Rust, 2021).

AI has also enhanced customer support through automated solutions, with banks and telecom companies deploying chatbots to manage routine inquiries efficiently and consistently. Moreover, AI is widely applied in sales forecasting, dynamic pricing, and inventory management, where predictive models help retailers optimize stock levels and enable airlines and ride-hailing platforms to adjust prices in response to demand. Collectively, these applications improve operational efficiency and support informed managerial decision-making, highlighting the strategic importance of AI in contemporary commerce (McKinsey & Company, 2023).

Case Studies of AI Adoption in Commerce:

Several global organizations illustrate how Artificial Intelligence can be strategically integrated into commercial operations to achieve superior business outcomes. Firms such as Amazon, Netflix, Flipkart, and Starbucks have adopted AI technologies to enhance personalization, improve operational efficiency, and strengthen customer engagement, thereby gaining a sustainable competitive advantage (Huang & Rust, 2021).

Amazon utilizes AI-driven recommendation systems and demand forecasting to improve sales performance, customer retention, and inventory



management (Russell & Norvig, 2021). Similarly, Netflix applies machine learning algorithms to personalize content recommendations, contributing to higher user satisfaction and reduced subscriber churn (Huang & Rust, 2021). Flipkart leverages AI for demand forecasting, pricing optimization, and chatbot-based customer service, enhancing both efficiency and customer experience (McKinsey & Company, 2023). Starbucks employs AI-driven platforms to deliver personalized offers and loyalty programs through its mobile application, increasing customer engagement and repeat purchases (Kotler et al., 2021). Collectively, these cases demonstrate how strategic AI adoption supports operational optimization and long-term competitive advantage in commerce.

Challenges of AI Adoption in Commerce:

Despite its advantages, the adoption of Artificial Intelligence in commerce involves several challenges that can limit effective implementation. High deployment and maintenance costs, including investments in infrastructure, software, and data management, pose significant difficulties, particularly for small and medium-sized enterprises (McKinsey & Company, 2023).

Data privacy and cybersecurity concerns are also critical, as AI systems rely on large volumes of sensitive customer data, increasing the risk of breaches and legal consequences (Huang & Rust, 2021). In addition, the shortage of skilled professionals in areas such as data science and machine learning can delay AI initiatives and reduce their effectiveness (Davenport & Ronanki, 2018). Ethical challenges, including algorithmic bias, data misuse, and workforce displacement due to automation, further complicate AI adoption (Russell & Norvig, 2021).

Future Scope of AI in Commerce:

The development of Artificial Intelligence in commerce began with early rule-based systems and data analytics tools that laid the foundation for modern AI applications. One of the earliest commercial uses of AI appeared in recommendation systems during the late 1990s, when companies such as Amazon adopted collaborative filtering techniques to personalize product suggestions based on customer purchase behavior (Russell & Norvig, 2021).

In the early 2000s, AI gained importance in supply chain management and demand forecasting, with retailers like Walmart applying predictive analytics to optimize inventory control and operational planning (McKinsey & Company, 2023). During the 2010s, omnichannel retailing emerged through the integration of online, mobile, and physical platforms, where AI enabled real-time personalization across multiple customer touchpoints (Chaffey & Ellis-Chadwick, 2019). More recently, voice-based commerce and AI-powered augmented reality have enhanced shopping experiences through virtual assistants and product visualization technologies, highlighting AI's role as a strategic driver of efficiency, personalization, and innovation in modern commerce (Huang & Rust, 2021).

Conclusion:

Artificial Intelligence has become a vital component of modern commerce by significantly influencing marketing strategies, sales management, and customer experience delivery. Through the use of AI-driven technologies, organizations are able to derive deeper insights from data, better understand customer behavior and market trends, and enhance overall operational efficiency. These capabilities support more informed and strategic business decision-making.



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