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CUSTOMER SERVICE AUTOMATION THROUGH AI-POWERED CRM: IMPACT ON MARKETING TARGET ACCURACY

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Abstract

This study addresses the limitations of traditional Customer Relationship Management (CRM) systems by analyzing the adoption and impact of Artificial Intelligence (AI) integration (AI-Powered CRM). Informed by the Technology Acceptance Model (TAM) for employee perception and the Resource-Based View (RBV) for strategic capability, the primary objective is to evaluate how AI-driven automation enhances customer service processes and, subsequently, impacts marketing efficiency. The research employs an exploratory qualitative case study design, utilizing in-depth interviews, document analysis, and system observation on a single organization to gather rich, contextual data. The results demonstrate that AI integration significantly accelerated service, with chatbots handling 65–70% of routine queries and drastically reducing response times. Operationally, these improvements fostered high employee acceptance (TAM). Strategically, the AI-Powered CRM generated refined predictive analytics, resulting in a 12–18% improvement in campaign conversion rates and efficient resource allocation, confirming that AI creates a valuable and difficult-to-imitate strategic capability (RBV). The study concludes that AI-Powered CRM is a critical enabler for both operational efficiency and long-term strategic competitiveness in digital markets.

Keywords: AI, AI-Powered CRM, Customer Service Automation, Marketing Efficiency

1. INTRODUCTION

Customer Relationship Management (CRM) has become a central component of modern business strategies as organizations increasingly depend on digital interactions to manage and maintain customer relationships. However, traditional CRM systems often face challenges related to manual data processing, slow responsiveness, and limited ability to provide personalized engagement at scale. As customer expectations shift toward real-time service and seamless digital experiences, many companies struggle to meet these demands effectively. Recent studies highlight that service delays, inconsistent responses, and fragmented customer information commonly arise from manual CRM workflows, ultimately affecting customer satisfaction and marketing effectiveness (Chen & Prentice, 2024).

Advancements in Artificial Intelligence (AI) provide an opportunity to address these limitations. Recent studies confirm that AI in CRM provides multidimensional benefits,

including operational efficiency, strategic analytics, and increased customer engagement (Alnofeli et al., 2025). AI-Powered CRM integrates Machine Learning, Natural Language Processing (NLP), and predictive analytics into customer management systems to enable more intelligent automation and data-driven decision-making. Contemporary research shows that AI-enabled features such as intelligent chatbots, automated ticket classification, dynamic customer segmentation, and predictive scoring can significantly enhance service efficiency by reducing operational workload and enabling 24/7 support (Kshetri et al., 2024). These capabilities allow organizations to handle increasing volumes of customer interactions with consistent accuracy, leading to higher service quality and reduced operational costs.

The use of AI in CRM not only transforms service operations but also enhances marketing performance. Global research trends show that AI-CRM is moving from mere automation to advanced predictive and personalization capabilities (Ozay et al., 2024). AI-driven automation and analytics support real-time personalization, more accurate customer targeting, and optimization of marketing campaigns based on predicted customer behavior. Evidence from recent literature suggests that companies adopting AI-Powered CRM experience improved conversion rates, lower customer acquisition costs, and greater customer lifetime value due to the system's ability to identify opportunities and risks more precisely. As competition intensifies in digital markets, these improvements become critical for sustaining marketing efficiency and gaining a competitive advantage.

The urgency for organizations to adopt AI-Powered CRM is also linked to increasing customer expectations and the growing complexity of service processes. AI automation helps companies respond instantly, maintain service consistency, and reduce human error, factors that directly influence customer satisfaction and loyalty. Without such automation, organizations risk slower service delivery, higher churn rates, and ineffective marketing efforts driven by incomplete or outdated customer insights. This situation underscores the need for more intelligent CRM solutions that support both operational scalability and strategic decision-making. Recent literature emphasizes that the success of AI integration in CRM depends on organizational readiness, data quality, and implementation governance (Ledro et al., 2025).

To understand the adoption and impact of AI-Powered CRM holistically, this study is informed by two theoretical perspectives often used in technology and organizational capability research. First, the Technology Acceptance Model (TAM) explains how employees perceive and accept AI tools through the constructs of Perceived Usefulness and Perceived Ease of Use. These perceptions influence how effectively AI-driven CRM features are utilized in daily operations (Venkatesh & Davis, 2000). Second, the Resource-Based View (RBV) provides a strategic lens for evaluating AI-Powered CRM as an organizational capability. AI-driven analytics, automated workflows, and proprietary customer insights represent valuable and difficult-to-imitate resources that can enhance marketing efficiency and long-term competitiveness.

Based on this context, the objective of this research is to analyze how AI is utilized within CRM systems to automate customer service processes and assess its impact on marketing efficiency. The study examines (1) the types of AI features integrated into CRM, (2) the ways AI enhances service speed and quality, and (3) how these improvements translate into measurable marketing outcomes. To address these objectives, the research adopts a qualitative case study approach supported by thematic analysis.

The problem-solving plan includes identifying organizational challenges in AI adoption, understanding employee perceptions of AI-Powered CRM using TAM, and evaluating how AI capabilities contribute to marketing efficiency using RBV. Additionally, the study analyzes the specific service context of the organization, including customer interaction volume, operational constraints, and marketing processes, to provide a comprehensive understanding of AI's value in real-world service environments.

2. RESEARCH METHOD

This study employs an exploratory qualitative case study design to examine how AI-Powered CRM supports customer service automation and enhances marketing efficiency. The research activities were structured to capture real organizational practices through interviews, document analysis, and system observation. A purposive sampling strategy was used to select key informants directly involved in the implementation and use of the AI-enhanced CRM system, including the Customer Service or CRM Manager, the Marketing Manager, and IT personnel responsible for CRM integration. These individuals were chosen because they possess firsthand knowledge of operational changes, analytical processes, and system performance.

The materials and tools used in the study consist of the organization's AI-Powered CRM platform featuring chatbots, automated ticket routing, predictive analytics, and personalization modules, along with semi-structured interview guides and internal documents such as service reports, workflow charts, and marketing dashboards. The design and performance of the AI tools were evaluated by examining how automation reduced service workload, how predictive models improved segmentation accuracy, and how personalization features supported marketing decision-making. Productivity was assessed qualitatively through observed reductions in manual tasks, faster customer response cycles, and more efficient targeting activities.

Data were collected using three techniques: in-depth interviews to explore user experiences and perceptions; document analysis to validate operational outcomes; and direct observation of the CRM interface to understand how automated workflows function in practice. Thematic analysis was applied to identify patterns across data sources, following steps of coding, category development, and theme interpretation. Themes were subsequently analyzed using the Technology Acceptance Model (TAM) to understand user acceptance

and the Resource-Based View (RBV) to assess strategic capability formation. Triangulation across interviews, documents, and observations strengthened the credibility of the findings.

3. RESULTS AND DISCUSSION

The results of this study reveal three major outcomes following the implementation of AI-Powered CRM within the organization. These outcomes include significant improvements in service automation, enhanced analytical capability for marketing activities, and increased organizational adaptability shaped by AI-driven workflows and employee acceptance. The findings across interviews, observations, and internal documents consistently demonstrate that AI integration delivers operational and strategic benefits that align with contemporary research on digital transformation.

3.1 Accelerated Service Processes through Automation

The first major result concerns the substantial acceleration of customer service processes. The AI-driven chatbot implemented by the organization successfully handled approximately 65–70% of recurring customer queries, particularly those requiring standard responses such as order updates, account information, and troubleshooting guidance. This automation reduced human involvement in routine tasks, allowing service agents to focus on more complex or high-value customer issues. Internal performance reports showed a decline in average response time from several minutes to under 30 seconds, indicating a strong improvement in service speed and consistency.

These findings align with recent studies demonstrating that AI-based chatbots and automated routing systems reduce operational workload, support round-the-clock service delivery, and improve customer experience through standardized interactions (Huang & Rust, 2021; Grewal et al., 2017). The organization also reported fewer misdirected tickets due to machine-learning-based routing models, which improved first-contact resolution. From the Technology Acceptance Model (TAM) perspective, these improvements were perceived by employees as strong indicators of the usefulness and ease of AI tools, contributing to higher acceptance and reduced resistance over time.

3.2 Enhanced Analytical Capability for Targeted Marketing

The second key result concerns the organization's improved analytical capability for conducting more targeted and effective marketing strategies. Through AI-powered predictive analytics, the CRM system generated refined customer segments, identified potential high-value customers, and detected churn risks early. Machine learning in CRM allows for more accurate identification of churn risk and prediction of customer behavior (Potla & Pottla, 2024). Marketing managers noted that these insights significantly enhanced

the precision of their targeting strategies and allowed them to allocate marketing resources more efficiently.

Internal marketing dashboards indicated a 12–18% improvement in conversion rates for campaigns customized using AI-generated insights, accompanied by a noticeable reduction in spending on broad, non-targeted advertising. Predictive analytics in CRM increasingly enables real-time marketing decision-making based on predictive models (Sadiq et al., 2025). A systematic review found that AI-based approaches in CRM consistently improve targeting accuracy and the quality of analytical insights (Ozay et al., 2024). These results resonate with recent literature demonstrating that AI-enhanced CRM systems improve personalization, target accuracy, and the overall effectiveness of digital marketing initiatives (Verma et al., 2021). The continuous learning capability of AI also supported real-time optimization of marketing messages, contributing to stronger engagement and better return on marketing investment.

3.3 Strengthened Organizational Adaptability and Strategic Competitiveness

The third result pertains to the organization's strengthened adaptability and strategic competitiveness as a result of AI-Powered CRM implementation. Through employee training and iterative refinement of AI workflows, the organization succeeded in reducing initial resistance and fostering higher acceptance of AI tools. Factors such as training and organizational alignment have been identified as key to successful AI-CRM integration (Ledro et al., 2025). Employees transitioned from primarily manual service roles toward supervisory and analytical responsibilities, demonstrating a shift toward higher-value tasks. This shift is consistent with research indicating that AI adoption often reshapes job roles and enhances overall employee capability when supported by proper training and communication (Idamia & Benseddik, 2024; Tussyadiah, 2020). Implementation challenges such as initial employee resistance and data quality issues are common barriers to AI-CRM integration (Ledro et al., 2023).

From a strategic perspective, the integration of AI-generated insights, automated workflows, and predictive intelligence aligns closely with the Resource-Based View (RBV). This is in line with the view that AI is not just an operational tool, but a strategic enabler that creates valuable and difficult-to-imitate capabilities (Alnofeli et al., 2025). The organization's ability to generate data-driven marketing decisions, automate customer engagement, and derive unique customer insights forms a valuable and difficult-to-imitate capability. Recent studies describe such AI-enabled assets as "digital intelligence capital," which functions as a long-term source of competitive advantage. Thus, AI-Powered CRM not only improves operations but also elevates the organization's strategic positioning. AI integration guidelines also emphasize the need for an iterative approach and strong governance to ensure long-term success (Ledro et al., 2023).

4. CONCLUSION

This study concludes that the integration of Artificial Intelligence (AI) within Customer Relationship Management (CRM) systems plays a transformative role in enhancing customer service automation and improving marketing efficiency. The findings demonstrate that AI-Powered CRM substantially accelerates service processes by automating routine inquiries, reducing response times, and improving the accuracy of ticket routing. These operational gains reflect strong perceived usefulness and ease of use among employees, supporting higher levels of technology acceptance as described by the Technology Acceptance Model (TAM).

In addition to operational improvements, the study finds that AI-driven analytics significantly strengthen the organization's marketing capability. Predictive customer segmentation, dynamic personalization, and churn forecasting collectively enhance the precision and effectiveness of marketing strategies, resulting in higher conversion rates and more efficient resource allocation. Real-time predictive models are an important component in optimizing campaign response and customer retention (Sadiq et al., 2025). These outcomes show that AI-Powered CRM is not merely a service tool but also a strategic instrument for data-driven marketing optimization.

Furthermore, the research highlights the emergence of strengthened organizational adaptability and strategic competitiveness following AI adoption. As employees transition from manual, repetitive tasks toward supervisory and analytical roles, the organization develops more advanced capabilities that align with the Resource-Based View (RBV). The ability to generate real-time insights, automate engagement, and create unique customer intelligence forms a valuable and difficult-to-imitate capability that enhances long-term competitive advantage.

Overall, the study affirms that AI-Powered CRM contributes to both short-term operational efficiency and long-term strategic value. By enabling faster service, smarter marketing decisions, and more adaptive organizational behavior, AI becomes a critical enabler for organizations seeking to improve customer experience and sustain competitiveness in a rapidly digitalizing marketplace. Future studies may extend this research by incorporating quantitative performance metrics, examining cross-industry comparisons, or exploring the ethical implications of AI-driven customer management.

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