Chapter 12
Optimizing Intelligent Systems in Marketing

M. Sriramkumar
https://orcid.org/0009-0006-5553-1142
PSNA College of Engineering and Technology, India

P. S. Venkateswaran
https://orcid.org/0000-0001-8958-103X
PSNA College of Engineering and Technology, India

S. Sumiya
https://orcid.org/0009-0006-6189-912X
MEASI Institute of Management, India

Diya Philip
https://orcid.org/0009-0005-2731-1209
BK College, India

Abhijit Chandratreya
https://orcid.org/0000-0001-9403-2094
Shree Chanakya Education Society Indira Institute of Management, India

A. Thenmozhi
Dhaanish Ahmed College of Engineering, India

A. T. Ashmi Christus
Dhaanish Ahmed College of Engineering, India

M. Gandhi
Dhaanish Ahmed College of Engineering, India

ABSTRACT

Dynamic consumer behaviours, evolving market trends, and a data-rich environment mark the contemporary marketing landscape. Leveraging intelligent systems allows marketers to not only analyze large volumes of data efficiently but also to uncover patterns and trends that would be challenging through conventional methods. This introduction sets the stage for an exploration into the challenges and benefits that marketers encounter as they strive to optimize intelligent systems, highlighting the need for a nuanced understanding of technological advancements, ethical considerations, and strategic adaptations. As elucidated in contemporary discourse, adapting intelligent systems to rapidly changing preferences and industry dynamics requires a proactive and agile approach. Addressing these challenges demands a holistic strategy that combines technological innovation with ethical considerations, regulatory compliance, and a keen understanding of the evolving marketing landscape.

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INTRODUCTION

In the era of rapidly advancing technology, the optimization of intelligent systems has become a focal point in various domains, particularly in the intricate realm of marketing. Intelligent systems, encompassing artificial intelligence, machine learning, and data analytics, present unparalleled opportunities for marketers to enhance decision-making processes, personalize interactions and optimize overall strategies (Atasever, 2023). This transformative wave is underpinned by the seamless integration of algorithms capable of processing vast datasets and deriving meaningful insights. As businesses increasingly rely on intelligent systems to drive their marketing initiatives, it becomes imperative to delve into the multifaceted landscape of optimization (Mehta et al., 2023).

As the intersection of technology and marketing continues to redefine industry standards, the optimization of intelligent systems emerges as a strategic imperative, promising a paradigm shift in how businesses engage with their audiences, make data-driven decisions, and navigate the complexities of the contemporary marketplace (Pulivarthy, 2024). The optimization of intelligent systems in marketing presents marketers with a spectrum of challenges that demand adept navigation for successful implementation (Venkateswaran et al., 2023). Firstly, privacy concerns surrounding data collection and usage pose a significant hurdle. As emphasized in recent literature, heightened awareness of data privacy issues necessitates marketers to tread carefully in leveraging customer information to avoid breaching trust (Venkateswaran et al., 2024). Algorithmic biases, another formidable challenge discussed in contemporary research, highlight the potential for intelligent systems to perpetuate discrimination or favour certain demographics unintentionally (Ramgirkar and Talhar, 2024).

Navigating these biases is crucial to ensure fair and equitable outcomes in marketing strategies. Additionally, the evolving regulatory landscape, including frameworks like GDPR, requires marketers to stay abreast of compliance requirements, adding complexity to the implementation of intelligent systems (Bastareche, 2024). The concept of interpretability, explored in recent studies, underscores the challenge of making complex algorithms understandable to stakeholders, including marketers and consumers. Moreover, the dynamic nature of consumer behaviour and market trends poses a continuous challenge (Kalyani and Devi, 2024).

REVIEW OF LITERATURE

As AI-based functionalities increasingly permeate markets and daily life, there is a notable transformation in how value is generated and experimentation is conducted (Anand et al., 2024). The integration of bots and AI offers a range of advantages, including accelerated customer service with real-time responses irrespective of the time, the demonstration of empathy through deep learning, a proactive approach, enhanced logistics, strengthened post-sales brand presence, and the acquisition of insights into customer needs and preferences (Venkateswaran, 2023); Kaartemo & Helkkula, 2018).

Artificial Intelligence (AI) is revolutionizing the service industry, enhancing efficiency, and providing personalized services to customers (Kaur et al., 2020; Venkateswaran et al., 2015). In the postal and parcel industry, the integration of self-driving cars, robotics, and automated machines Manoharan, (2019) hold potential for customer interactions, supply chain planning, transportation improvement, and warehouse management. These technological advancements are poised to reshape daily operations within these sectors (Saleh et al., 2024).