

Chapter 2

How Conversational AI Transforms Customer Service at Sephora With Virtual Beauty Assistants

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ABSTRACT

Retail marketing has been revolutionized by conversational artificial intelligence which enables personalization and automation while providing real-time customer interaction. This chapter examines Sephora's advanced conversational AI applications including virtual beauty assistants and chatbots to boost customer service and marketing outcomes. Recent studies show that natural language processing, machine learning (ML), and Augmented Reality (AR) technologies enable seamless omnichannel experiences and operational improvements. The conceptual framework demonstrates how AI tools boost customer engagement while enhancing user experience and accelerating sales growth. This chapter analyses how Sephora handles customer relationship management and builds loyalty through digital branding.

BACKGROUND

Artificial intelligence (AI) created major changes in retail marketing and customer service during the previous ten years. Conversational AI which includes chatbots and virtual assistants represents a groundbreaking advance in the field. As of 2024 global beauty brands showed a substantial increase to 78% in the adop-

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tion of AI-powered customer service tools from 32% recorded in 2021 according to Martínez-López and colleagues' study (2024). The capabilities of these tools provide human-like scalable conversations and real-time support which transform the way brands interact with customers (Bouhlal & Belahcen, 2025). A study by Gartner (2024) shows that 85% of beauty consumers now choose AI-assisted consultations over traditional methods. Sephora demonstrates the transformative impact of conversational AI on both marketing strategies and customer service delivery. AI has transitioned from backend processing to front-facing interactions which enable services such as segmentation and automated campaign management while delivering personalized content (Shah et al., 2024). Natural language processing combined with machine learning and dialogue management enables brands to provide user-specific responses through contextual interaction (Khandave, 2024). Dutta's 2024 report indicates that conversational AI systems meet the expectations of the 80% online shoppers who demand immediate responses. According to research by Menaka & Selvam (2025), the global conversational AI market will surpass USD 9.4 billion by 2028 while maintaining an annual growth rate of 36.1%. Computer vision technology in beauty retail powers Sephora's Virtual Artist which applies convolutional neural networks to identify 468 facial landmarks with an accuracy rate of 87% (Kim & Kim, 2024). Yet, algorithmic bias remains a concern: The shade-matching system achieves 94% accuracy for Fitzpatrick types I–IV while it only reaches 82% accuracy for types V–VI (Johnson et al., 2024). Businesses now employ chatbots to gather zero-party and first-party data for enhancing personalization systems (Gajjar, 2024). Through its chatbot, Sephora captures user information to generate product recommendations and offer beauty advice (Garg et al., 2024). Following the pandemic 68% of consumers maintained their use of virtual try-ons for its convenience and time efficiency according to Chen & Lee (2024). Generational differences persist: Gen Z exhibits 3.2 times greater trust in AI technologies compared to Baby Boomers with Millennial users showing a 58% preference for mixed human-AI service interactions (Deloitte, 2024). Performance enhancement through conversational AI results in improved engagement by 30% and conversion rates rising by 25% according to Bhuiyan (2024). Customers who interact with Sephora's chatbot have a 25% higher spending per session and more than 70% finalize their purchases within 24 hours (Muminov, 2024). The system grows into a scalable customer service solution through its evolution based on user feedback and error detection (Beaver & Mueen, 2022).

Focus of the Chapter

This chapter analyses how conversational artificial intelligence (AI) transforms customer service and marketing approaches in beauty retail by exploring Sephora's

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