Chapter 3
AI Applications in Customer Experience Management

Koray Gündüz
http://orcid.org/0000-0002-9734-3290
Bingöl Üniversitesi, Turkey

ABSTRACT

This book chapter examines the transformative impact of Artificial Intelligence (AI) technologies on Customer Experience (CX) management in the age of digital transformation. The study positions AI as more than just a technical element, but rather as a fundamental tool that personalises customer interactions and guides strategic decisions. The chapter analyses how capabilities such as machine learning and data analytics shape the customer journey, while discussing the effects of applications such as chatbots, recommendation systems, and sentiment analysis on satisfaction. In addition to the operational efficiency opportunities offered by AI, ethical dimensions such as data privacy, algorithmic transparency, and trust are also examined. Ultimately, the necessity of a balanced and ethical approach between technological automation and human interaction for sustainable CX success is highlighted.

INTRODUCTION

Today's business world is undergoing a fundamental transformation process driven by digital transformation. With the rapid increase in consumers' access channels to information and points of interaction, traditional business models have come under pressure and many markets have been reshaped. In this complex and dynamic environment, businesses' competitive advantage and sustainable success

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depend not only on the functional benefits of the products or services they offer, but also on the overall quality of the relationship they build with their customers, namely Customer Experience (CX).

CX is a dynamic concept that requires evaluating consumers' interactions with a brand from a multidimensional perspective, including cognitive, sensory, emotional, and physical responses. This holistic structure, shaped through online and offline channels throughout the customer journey, demands real-time and highly personalised services from brands. While traditional approaches fall short of meeting this scale of personalisation and speed expectations, Artificial Intelligence (AI) technologies are emerging as the key solution to bridge this gap. With capabilities such as machine learning, natural language processing (NLP) and sentiment analysis, AI is redefining customer interactions and fundamentally transforming CX management.

The primary aim of this section of the book is to examine the impact of artificial intelligence technologies on customer experience management from both theoretical and practical perspectives. In this context, AI is not merely considered a technological element; it is treated as a fundamental strategic tool that shapes the customer experience.

To this end, the section is structured around the following main headings: Firstly, the effects of digital transformation on CX and the role of AI in this process will be explained. Secondly, the concepts of CX and Customer Journey will be detailed, emphasising the critical importance of CX in the context of AI's personalisation potential. Thirdly, AI's ability to provide deep insights into customer behaviour through data analytics and machine learning will be examined. The fourth section is devoted to concrete AI applications in customer experience management, including chatbots, recommendation systems, and sentiment analysis. Fifthly, customer perception, trust, transparency, and ethical dimensions arising from the proliferation of AI will be discussed in depth. Finally, the findings will be synthesised, and conclusions and recommendations for the future will be presented. With this comprehensive review, the chapter aims to guide academics and practitioners seeking to optimise CX strategies in the age of AI.

1. ARTIFICIAL INTELLIGENCE AND THE TRANSFORMATION OF CUSTOMER EXPERIENCE MANAGEMENT

The primary objective of this book chapter is to examine the impact of artificial intelligence technologies on customer experience management from both theoretical and practical perspectives. The chapter analyses how businesses are reshaping their customer-centric strategies during a period of accelerated digital transformation. In

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