

# Chapter 6

## Programmatic Advertising in E-Commerce: Trends, Challenges, and Strategic Opportunities

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### **ABSTRACT**

*Programmatic advertising (PA), the most technologically advanced form of online advertising, offers significant benefits and advantages for e-commerce retailers in online marketing and product sales. However, PA also brings with it several difficulties and challenges. In this context, this book section aims to provide readers with a holistic perspective in this field by providing a comprehensive assessment of PA's essential components and technologies. The study first examined the development of PA in online advertising and then evaluated its role in improving cost advantage, precise targeting, real-time optimization, scalability, customer engagement, and experience for e-commerce retailers. In addition, the main challenges of PA, such as transparency and accountability, increasing concerns about brand safety, and advertising fraud, are discussed with a critical approach.*

### **INTRODUCTION**

Retailers are becoming more and more reliant on digital advertising due to the increased interest in online channels (Ciuchita et al., 2023). According to Statista (2023), the amount spent on programmatic advertising globally is predicted to reach \$558 billion in 2023 and surpass \$700 billion by 2026. Programmatic advertising is

DOI: 10.4018/979-8-3693-7041-4.ch006

computer-based ad buying that uses algorithms and a real-time bidding mechanism to automate the auction of advertising space. By leveraging real-time first- and third-party data to determine which ad spots to acquire, to whom to show which advertising, and how much to pay for them, it therefore substitutes traditional human negotiating and manual ad placement processes (Belch & Belch, 2021; Pelsmacker et al., 2021). Businesses may now efficiently target relevant market groups, deliver real-time personalized ads, and optimize digital ads thanks to artificial intelligence (AI) technologies, giving them a competitive edge over traditional online advertising methods (Choi & Lim, 2020; Dörnyei, 2021). Advertisers may make real-time campaign adjustments thanks to their analysis of user behavior and preferences using big data and machine learning techniques. To ensure that the ad is shown to people most likely to be interested in the product or service, this real-time bidding (RTB) procedure examines millions of pieces of real-time data (Palos-Sanchez et al., 2019). This increases the effectiveness of ads, thus increasing the return on investment for advertisers.

Additionally, using a single platform, e-commerce businesses may increase their reach across a variety of digital channels, such as social media, mobile, video, and display. This all-encompassing strategy gives a uniform consumer experience across all touchpoints and raises brand awareness (Mladenow et al., 2015). As a result, retailers can generate higher revenues by creating more engaging, personalized, and well-targeted advertisements with the help of large databases created by collecting and documenting all consumer behaviors in the digital ecosystem (Ciuchita et al., 2023; Malthouse et al., 2019).

Despite the many advantages of PA in online advertising, this is a complicated sociotechnical system that confronts e-commerce companies with several opportunities and challenges (Baxter & Sommerville, 2011; White & Samuel, 2019). The primary challenges are lack of transparency, brand safety, and advertising fraud. Concerns about data privacy and the improper use of personal information present another difficulty for PA. PA entails gathering, analyzing, and creating users' profiles. Thus, disagreement exists about the detrimental effects of not securing personal data (Núñez-Barriopedro et al., 2023; Palos-Sanchez et al., 2019).

Ultimately, this chapter emphasizes the need to comprehend the potential advantages and obstacles of programmatic advertising in the e-commerce industry. The study explores the current trends and practical uses of programmatic advertising in e-commerce. It emphasizes how retailers may utilize this approach to better their marketing strategies, effectively target customers, and optimize their return on investment. Furthermore, this chapter provides e-commerce organizations with the necessary information and skills to efficiently traverse the complexities of programmatic advertising by addressing difficulties and delivering strategic advice. In essence, a thorough understanding of these dynamics would empower e-commerce

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