# The Mitigation Mechanism of AIGC-based Personalized Marketing Strategies on the Consumer Privacy Paradox

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## Abstract

**Personalized marketing, while enhancing consumer experience, intensifies privacy concerns, a contradiction known as the "privacy paradox." The emergence of Generative Artificial Intelligence (AIGC) offers a novel pathway to resolve this paradox. This paper explores how AIGC reshapes marketing interaction paradigms to alleviate consumer privacy concerns while delivering highly personalized services. Integrating Service-Dominant Logic (S-D Logic) and Privacy Calculus Theory, this study constructs a theoretical analysis framework. The analysis proposes that AIGC primarily functions through three core mechanisms: the trust reconstruction mechanism from data extraction to transparent value exchange, the privacy sensitivity reduction mechanism from push-based personalization to contextualized intelligent symbiosis, and the perceived control enhancement mechanism from algorithmic black box to controllable generation processes. Concurrently, the paper examines potential risks associated with AIGC applications, such as algorithmic bias and sophisticated fraud, and proposes adaptive pathways for building a "responsible and empathetic" AIGC marketing system. This research provides theoretical foundations and practical guidance for balancing marketing efficacy and privacy protection in the AI era.**

## Keywords

**Generative Artificial Intelligence (AIGC), personalized marketing, privacy paradox, trust building, Human-AI Collaboration.**

## 1. Introduction

### 1.1. Research Background and Problem Statement

In the digital economy, personalized marketing has become a cornerstone of business strategy, driving consumer engagement and conversion [1]. However, its reliance on extensive data collection and profiling has led to heightened consumer privacy concerns. This tension between the desire for personalized services and the need for privacy protection is widely recognized as the "privacy paradox" [2]. Consumers frequently disclose personal information despite expressing significant privacy worries, creating a persistent challenge for both ethics and business efficacy. The advent of Generative Artificial Intelligence (AIGC) represents a transformative shift. Unlike traditional analytics, AIGC enables dynamic, interactive, and co-creative engagement [3]. This prompts a critical research question: Through what inherent mechanisms can AIGC-driven personalized marketing resolve the consumer privacy paradox?

### 1.2. Research Significance

The theoretical significance of this study lies in its interdisciplinary approach, merging insights from marketing, information systems, and ethics to expand the conceptual understanding of the privacy paradox within AI-mediated environments. Practically, it offers actionable insights

for businesses seeking to deploy AIGC in marketing responsibly, ensuring compliance with evolving regulations while maintaining consumer trust and competitive advantage.

### 1.3. Literature Review and Research Positioning

Existing scholarship on the privacy paradox highlights the cognitive trade-offs consumers make between perceived benefits and risks [2]. Research on personalized marketing has extensively documented its effectiveness and associated privacy backlash [4]. Meanwhile, growing literature explores AIGC's applications in content creation, customer service, and insight generation [3, 5]. However, current studies often examine AIGC's empowering effects and privacy risks in isolation. A significant gap exists in integrative research that specifically investigates AIGC's intrinsic mechanisms for mitigating the bidirectional tension of the privacy paradox. This study aims to fill this gap by constructing a holistic framework.

### 1.4. Research Framework and Paper Structure

This paper follows a logical progression of "problem presentation, theoretical foundation construction, mechanism analysis, risk examination, and conclusion." Section 2 defines core concepts and establishes the theoretical framework. Section 3 delves into the three proposed mitigation mechanisms. Section 4 discusses associated risks and adaptive governance paths. Finally, Section 5 presents conclusions, implications, and future research directions.

## 2. Theoretical Foundation and Analytical Framework

### 2.1. Section Headings

#### 2.1.1. The Consumer Privacy Paradox:

This concept describes the inconsistency between individuals' stated privacy concerns and their actual information-disclosing behaviors in digital contexts [2]. It stems from a complex calculus involving perceived benefits, privacy risks, and contextual factors.

#### 2.1.2. AIGC-Driven Personalized Marketing:

This refers to marketing strategies that utilize generative AI models to create tailored content, solutions, or experiences in real-time through interactive dialogue. It marks a paradigm shift from static, segment-based to dynamic, individual-level co-creation [3, 5].

### 2.2. Theoretical Underpinnings

#### 2.2.1. Service-Dominant Logic (S-D Logic):

S-D Logic posits that value is always co-created by the service provider and the beneficiary through the integration of resources and interactions [6]. This study views AIGC as an operant resource that facilitates novel forms of value co-creation in marketing interactions, moving beyond mere data processing.

#### 2.2.2. Privacy Calculus Theory:

This theory suggests that an individual's intention to disclose information is a result of a mental weighing of perceived benefits (e.g., personalization, convenience) against perceived privacy risks (e.g., surveillance, data misuse) [7]. It provides the lens to analyze how AIGC alters the variables in this calculus.

### 2.3. Integrated Analytical Framework

This paper synthesizes the above theories to form its analytical core. We propose that AIGC mitigates the privacy paradox by fundamentally altering the process of value co-creation (as per S-D Logic) in a way that positively influences the consumer's privacy calculus. Specifically, AIGC-enabled interactions can enhance perceived benefits through superior personalization, while simultaneously reducing perceived risks through greater transparency, contextual

boundedness, and user control. This dual effect rebalances the calculus toward disclosure within a trust-enhanced environment.

## 3. Core Mechanisms of AIGC in Mitigating the Privacy Paradox

### 3.1. Mechanism 1:

From Data Extraction to Transparent Value Exchange – Reconstructing Trust

Traditional personalization often relies on the passive extraction and inference from historical data trails, which can feel intrusive and non-transparent [4]. In contrast, AIGC facilitates a more transparent exchange. Through natural language interfaces, AIGC can engage users in conversational dialogues, actively eliciting preferences and needs in real-time [5]. This process resembles a collaborative inquiry where value propositions are made explicit. The consumer actively participates in shaping the output by providing prompts and feedback, making the value exchange more visible and equitable. This active participation and dialogue foster a sense of partnership, which is crucial for building trust [8]. When consumers understand how their input directly leads to a valuable outcome, the perception of opaque data exploitation diminishes, thereby reducing one key source of privacy concern.

### 3.2. Mechanism 2:

From Push-Based Personalization to Contextualized Intelligent Symbiosis – Reducing Privacy Sensitivity

A major source of privacy anxiety in traditional marketing is the cross-context tracking and profiling that aggregates data from disparate sources to predict behavior [1]. AIGC offers the potential for more bounded interactions. An AIGC agent can be designed to operate as an embedded intelligence within a specific service context (e.g., a shopping session, a travel planning interface). Within this bounded session, the AI can understand intent, generate options, provide explanations, and refine suggestions based on the ongoing conversation, all while minimizing the need to export or link user data across multiple external platforms [9]. This "contextual containment" aligns with the principle of data minimization. The consumer's privacy remains more intact within the interactive loop, as the interaction focuses on solving an immediate need within a defined frame, rather than building a persistent, cross-platform profile. This reduces the perceived scale and sensitivity of data exposure.

### 3.3. Mechanism 3:

From Algorithmic Black Box to Controllable Generation Process – Enhancing Perceived Control

The opacity of algorithmic decision-making ("black box") is a significant contributor to privacy-related discomfort and distrust [10]. AIGC, particularly models accessible via prompt-based interfaces, introduces new avenues for user influence and control. Through explainable prompting techniques and iterative feedback loops, users can guide the generation process. For instance, a user can ask an AIGC marketing agent to "explain why that product was recommended" or instruct it to "suggest alternatives considering factor X." This interactivity allows users to steer the output, making the system's logic more apparent and adjustable. This enhanced perceived control over the interaction and the resulting content directly addresses a core element of privacy concerns-the feeling of helplessness against automated systems [7]. When users feel they can influence and correct the system, the anxiety associated with algorithmic opacity is mitigated.

# 4. Potential Risks and Adaptive Governance Pathways

## 4.1. Potential Risks Amplified by AIGC

Despite its mitigating potential, AIGC introduces or exacerbates certain risks that must be managed.

### 4.1.1. Perpetuation and Amplification of Bias:

AIGC models trained on biased data can generate discriminatory or unfair personalized content, potentially reinforcing social stereotypes in marketing messages [10].

### 4.1.2. Sophisticated Personalized Fraud:

The ability to generate highly convincing, personalized content could be weaponized for phishing, scams, or deceptive advertising at an unprecedented scale and specificity.

### 4.1.3. The Empathy Gap in Human-AI Interaction:

AIGC may struggle with genuine empathy and deep emotional understanding. Over-reliance on synthetic interactions could lead to impersonal experiences that fail to build true emotional connection, potentially undermining long-term trust [11].

## 4.2. Adaptive Pathways: Towards a Responsible AIGC Marketing System

To harness AIGC's benefits while curbing its risks, a multi-faceted governance approach is necessary.

### 4.2.1. Technological Adaptation:

Implementing "privacy-by-design" principles in AIGC systems, such as on-device processing where feasible, differential privacy techniques, and developing explainable AI (XAI) features tailored for end-users.

### 4.2.2. Organizational Governance:

Establishing clear ethical guidelines and human-in-the-loop review processes for AIGC-generated marketing campaigns. Regular auditing of AIGC outputs for bias and accuracy is essential.

### 4.2.3. Interaction Design Philosophy:

Moving beyond efficiency to design AIGC interactions that prioritize user sovereignty, transparency, and corrective feedback. Systems should be designed to acknowledge their limitations and seamlessly transfer complex or sensitive issues to human agents [11]. Cultivating a culture of responsible AI use within marketing departments is paramount.

# 5. Conclusion and Future Research

## 5.1. Main Conclusion

This study argues that AIGC-driven personalized marketing holds significant potential to mitigate the consumer privacy paradox. It achieves this not by eliminating the trade-off but by reframing the value exchange equation. The three proposed mechanisms-trust reconstruction through transparent interaction, privacy sensitivity reduction through contextual symbiosis, and perceived control enhancement through guided generation-collectively work to increase the perceived benefits and decrease the perceived risks in the consumer's privacy calculus. This rebalancing makes value-co-creating disclosure a more rational and comfortable choice for the consumer.

## 5.2. Theoretical and Practical Implications

Theoretically, this paper contributes by integrating S-D Logic with Privacy Calculus Theory to analyze AI-mediated marketing, offering a novel framework for future research. Practically, it

advises businesses to focus on designing transparent, bounded, and controllable AIGC interactions rather than solely pursuing hyper-personalization.

### 5.3. Limitations and Future Research

This paper is primarily conceptual. Future empirical research is needed to validate and quantify the effects of these mechanisms. Key directions include: 1) Developing and validating scales to measure perceived transparency and control in AIGC interactions; 2) Conducting experimental studies to test the causal impact of different AIGC interaction designs on privacy calculus outcomes; 3) Exploring the integration of affective computing to responsibly bridge the empathy gap in AIGC marketing; and 4) Investigating the role of emerging technologies like blockchain in providing verifiable transparency for AIGC training data and processes.

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