

Technology-Driven Brand Cognition Trends in the Context of Consumer Behavior Transformation in the Intelligent Era: A Postprint

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Abstract

Driven by the intelligent era, both consumer behavior patterns and brand cognition methods have undergone significant transformations. **【Purpose】** New technologies have transformed information acquisition channels and enabled communication with consumers through various media. Consumers have experienced a series of transformations in information acquisition pathways, decision-making processes, personalized demands, and social media influence. **【Methods】** In their marketing strategies, brands have begun to emphasize communication with consumers and strengthen connections with them through multiple channels. Brand cognition is evolving toward reshaping its values, digital image, diversified communication methods, and enhancing user loyalty. **【Results】** Simultaneously, intelligent technology has been widely applied in the consumption domain, providing consumers with more choices and improving purchasing efficiency. Social media and online reviews have influenced purchasing decisions, while intelligent technology has strengthened interactions between consumers and brands, enhancing brand cognition. **【Conclusion】** In the future, the internet will further transform consumer behavior patterns, and brands will also meet consumers' increasingly diversified information demands by continuously optimizing product functions. Therefore, it is necessary to closely monitor these development trends to enhance brand awareness and market competitiveness, further promoting brands on the path toward sustainable development.

Full Text

Analysis of Technology-Driven Brand Cognition Trends Against the Backdrop of Consumer Behavior Transformation in the Intelligent Era

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Abstract

The intelligent era has precipitated conspicuous transformations in both consumer behavior patterns and brand cognition mechanisms. **[Purpose]** New technologies have revolutionized information acquisition channels and enabled multifaceted communication with consumers through various media. Consumers have undergone a series of changes in information access pathways, decision-making processes, personalized demands, and social media influence. **[Method]** Brands have begun emphasizing consumer communication in their marketing strategies, strengthening connections through diverse channels. Brand cognition is evolving toward reshaping brand values, digitalizing brand image, diversifying communication methods, and enhancing user loyalty. **[Result]** Simultaneously, intelligent technologies have been widely applied in the consumption domain, offering consumers more choices and improving purchasing efficiency. Social media and online reviews have influenced purchase decisions, while intelligent technologies have strengthened interactions between consumers and brands, elevating brand awareness. **[Conclusion]** In the future, the internet will further transform consumer behavior patterns, and brands will continuously optimize product functions to meet consumers' increasingly diversified information demands. Therefore, it is essential to closely monitor these developments to enhance brand visibility and market competitiveness, thereby advancing brands toward sustainable development.

Keywords: Intelligent Era; Consumer Behavior Transformation; Technology-Driven; Brand Cognition; Digital Consumer Behavior

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1. The Advent of the Intelligent Era and the Evolution of Consumer Behavior

Driven by the intelligent era, consumer behavior is undergoing unprecedented transformation. Xu Tongqian and Jia Mengke's longitudinal analysis of digital marketing research indicates that over the past few decades, the rapid development of digital technologies—particularly the application of emerging technologies such as artificial intelligence of things (AIoT), big data, and artificial intelligence—has profoundly influenced how consumers acquire, process, and make decisions about information. Based on the openness and interactivity of social media platforms, consumers are no longer merely recipients of advertising

information but can become its disseminators and producers. They can participate in brand building and product development through the internet, a shift that presents both new challenges and opportunities for brand marketing. As a bridge between enterprises and consumers, brands are developing from single-function to multi-function entities. Consumers' pursuit of personalized and intelligent experiences creates new opportunities for brands, while consumer cognition and brand attitude have become key factors influencing purchase decisions. Consequently, brand communication strategies urgently require innovation. Today, the definition of a brand has transcended trademarks or names; consumers express self-value and identity through brands, and interactions between brands and consumers have become increasingly profound. Intelligent products and services enhance brand loyalty, while technological advancement drives transformation in brand cognition models from traditional information dissemination to intelligent interaction. The emergence of digital media has changed information acquisition habits. By leveraging big data and artificial intelligence, brands can more accurately understand consumer needs, while social media and mobile internet strengthen interactive relationships.

2. Research Significance of Technological Progress's Impact on Brand Cognition

Technological progress is reshaping consumers' brand cognition processes. Zhou Chao et al.'s research based on the SICAS model reveals that consumers' brand cognition in the intelligent era has become more complex, no longer determined solely by bottom-up brand contact but rather resulting from dynamic interaction. With technological empowerment, significant changes have occurred in brand identification, experience, and loyalty establishment, creating close connections between intelligent technology and consumers. Wang Pengfei and Sun Yue have noted that the impact of intelligent technology on global sustainable fashion brand cognition is gradually gaining attention. Additionally, the widespread popularization of intelligent technologies such as wearable devices and smart homes has exerted profound influence on brand cognition. In the intelligent era, brand image building faces more complex interactive challenges. Therefore, deeply understanding technology-driven brand cognition trends is crucial for brand construction and market promotion strategies.

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3. Theoretical Foundations

3.1 Traditional Consumer Behavior Theory

Before the intelligent era, consumer behavior theories focused on decision-making and purchasing. Abraham Maslow's hierarchy of needs and Herbert Simon's bounded rationality theory represent key frameworks in this domain. Maslow emphasized how need satisfaction influences decision-making, hierarchically structured from physiological to social needs, while Simon argued that consumers exhibit bounded rationality due to information, time, and cognitive constraints. Both theories emphasize the role of need satisfaction and information search evaluation in decision-making. However, with the arrival of the intelligent era and dramatic changes in consumer behavior, traditional theories struggle to fully explain and predict contemporary phenomena. It is necessary to construct an analytical framework for consumer brand knowledge structure and extract mental resource elements by integrating new technological contexts to more accurately understand and predict consumer behavior. Nevertheless, the accelerating development of intelligent technologies will further transform consumer behavior studies.

In 1995, Nicholas Negroponte's *Being Digital* proposed that “digital existence refers to humans engaging in information dissemination, communication, and other activities in a virtual, digital activity space,” emphasizing that human activities in spaces different from traditional ones would naturally transform everything. In 2009, consumer behavior scholar Michael Solomon introduced the concept of “digital consumer behavior” in the preface to *Consumer Behavior*, considering it a “new world” where digital transformation is profound and comprehensive. With digital and intelligent development, consumers' decision-making processes have visibly changed. In the network environment, grasping consumer psychological and behavioral characteristics and understanding enterprise-consumer interaction methods have become marketing priorities. Consumers emphasize personalization and cultural taste, making purchasing processes more rational and self-directed. Consumer decision-making processes increasingly rely on digital environments, as they actively search for product information, demonstrate willingness to purchase personalized service brands, and exhibit growing demands for personalization and socialization.

3.3 Intelligent Technology and Consumer Interaction Models

Through the widespread application of intelligent technologies, brands can collect consumer behavior data, preferences, and feedback, thereby providing more personalized products and services. For instance, intelligent recommendation systems can offer personalized product recommendations based on consumers' purchase history and preferences, improving purchasing convenience. Additionally, the application of virtual fitting rooms provides consumers with more convenient shopping experiences, allowing them to try on clothes at home through virtual reality technology without physically visiting stores. Smart voice assis-

tants have become important aids in daily life, enabling consumers to communicate and inquire directly with brands through voice interaction with intelligent devices. These intelligent technology applications not only enhance shopping convenience but also create deeper consumer insights and closer customer relationships for brands.

4. Technology-Driven Brand Cognition Mechanisms

4.1 Development of Brand Cognition Theory

With the rapid development of the internet and intelligent technologies, brand cognition theory continues to evolve. In 2022, Qin Yuan concluded in her research that the dynamic and multi-layered nature of brand cognition in the intelligent era has significantly strengthened. Consumers no longer passively receive information but engage in two-way interaction with brands through intelligent technology, achieving personalized experiences based on individual preferences and needs.

4.2 How Consumers Identify and Understand Brands in the Intelligent Era

In the era of intelligent technology development, the core of enterprise competition is the brand, and the key to brand competition is brand awareness. Brand awareness represents consumers' overall impression of brand quality, constitutes an important component of brand equity, and reflects corporate competitiveness. It comprises six dimensions: brand name, logo, slogan, image, characteristics, and value. Brand awareness is influenced by differentiation, relevance, and respect. Methods to enhance brand awareness include: memorable brand names, unified brand images, innovative slogans, appropriate advertising creativity, and leveraging news events, celebrity effects, public relations activities, and advertising to break homogeneity and reposition brands. The purpose of brand marketing is to deepen consumers' brand cognition to drive consumption behavior and achieve long-term sales growth.

Consumer brand cognition progresses through four stages: establishing brand impression, promoting value identification between brand and consumer, building consumer-brand stickiness, and enhancing brand loyalty. Technology is reshaping brand values, driving digital expression of brand image, diversifying brand communication, and strengthening consumer loyalty to brands. Therefore, brands must keep pace with technological development, continuously innovate to meet consumer needs, and improve brand awareness. Specific measures include:

4.2.1 Leveraging Personalized and Customized Brand Recommendations to Strengthen Brand Cognition Intelligent technology analyzes user interests and behaviors to provide personalized brand recommendations, increasing consumer brand awareness and facilitating access to relevant information.

Through intelligent technology applications, brands can collect consumer behavior data, preferences, and feedback to provide more personalized products and services. Smart recommendation systems can offer personalized product recommendations based on purchase history and preferences, improving purchasing convenience. AI technology can also be used for customer service, analyzing large volumes of data and user behavior to provide personalized brand recommendations and customized shopping experiences, thereby increasing consumer satisfaction and further deepening brand awareness and attention.

4.2.2 Utilizing Social Media and Online Marketing to Enhance Brand Exposure and Influence The popularity of the internet and social media constitutes an important platform for brand information dissemination. Brands can conduct precision marketing through social media platforms, interacting with consumers by publishing interesting and valuable content to enhance brand exposure and influence, thereby improving brand awareness. Additionally, recommendations from online influencers and opinion leaders have become important pathways for brands to increase awareness. Consumers encounter brand content and influencer recommendations through these platforms, thereby improving brand cognition and memory.

4.2.3 Employing Virtual Reality and Augmented Reality to Provide Immersive Brand Experiences The development of virtual reality (VR) and augmented reality (AR) technologies provides brands with entirely new display and experience methods. Consumers can more intuitively understand and experience brand products and services through VR and AR technologies. Brands can utilize VR technology to create virtual displays, virtual try-ons, and other scenarios, enabling consumers to understand products more intuitively. AR technology combines virtual content with the real world, providing consumers with opportunities to interact with brands. Through AR applications, consumers can view virtual product models in real environments, experience virtual shopping guides, and thereby increase brand cognition and interest, providing immersive brand experiences to meet diverse consumer needs.

4.2.4 Harnessing Artificial Intelligence and Big Data for More Precise Consumer Analysis The application of artificial intelligence (AI) and big data technologies enables brands to analyze consumer behavior and needs more accurately, thereby developing more effective marketing strategies that play important roles in brand cognition. By leveraging big data and AI, brands can more precisely understand consumer needs and preferences, achieving personalized marketing. Through personalized recommendations, customized shopping experiences, and individualized communication, brands can enhance consumer cognition and loyalty.

4.2.5 Utilizing the Internet of Things and Smart Devices to Provide More Convenient Services The development of the Internet of Things (IoT)

and smart devices provides brands with more marketing channels and methods. Brands can interact with consumers through smart devices, using smartphones, wearable devices, and smart home products to communicate and interact with consumers in real time, establishing more profound brand images in consumers' minds.

4.2.6 Leveraging Ecosystems and Platformization to Better Satisfy Consumer Needs Technological development continuously drives brands to establish their own ecosystems and platforms, integrating multiple resources to provide more comprehensive and convenient one-stop services. Through such ecosystems, brands can effectively integrate products, services, and related information to provide consumers with superior experiences. This approach not only enhances consumer satisfaction but also enables brands to gain deeper insights into consumer behavior and preferences through data analysis, thereby developing more precise marketing strategies that promote brand-consumer interaction and enhance brand loyalty.

4.2.7 Capitalizing on Environmental and Sustainability Concerns to Enhance Brand Image As consumer concern for environmental protection and sustainable development continues to grow, consumers increasingly prefer brands that demonstrate social responsibility and environmental consciousness. By participating in environmental protection activities and supporting social welfare projects, brands can establish deeper emotional connections with consumers.

4.3 New Trends in Technology-Driven Brand Communication and Interaction

Driven by technology, brand communication and consumer interaction demonstrate new trends. Technology-driven product innovation capabilities are user-centered, continuously mining needs to promote differentiated product development, which becomes an important driving force for brand long-term upgrading.

4.3.1 Integration of Virtual Experience and Physical Interaction Brands provide consumers with immersive virtual experiences through VR and AR technologies while integrating physical interaction. For example, setting up AR displays in physical stores allows consumers to interact with virtual elements through mobile phones or AR glasses, enhancing brand cognition and shopping experiences.

4.3.2 Cross-Platform and Multi-Channel Communication As consumers use multiple smart devices and platforms for information acquisition, brand communication tends toward cross-platform and multi-channel approaches. Brands need to establish presence across multiple digital channels

and provide consistent brand information and experience to meet diverse consumer needs.

4.3.3 Data-Driven Personalized Marketing Utilizing big data and AI, brands can more accurately understand consumer needs and preferences to achieve personalized marketing. Through personalized recommendations, customized shopping experiences, and individualized communication, brands can enhance consumer cognition and loyalty.

4.3.4 User-Generated Content and Social Interaction Consumers become a force for brand dissemination by sharing purchase experiences, brand evaluations, and interactive content through social media platforms. Brands need to actively participate in and guide user-generated content, strengthen interaction with consumers, and enhance brand cognition and influence.

4.3.5 Application of AI Assistants and Smart Customer Service AI assistants and smart customer service play important roles in brand interaction and customer service. Consumers can interact with brands, obtain product information, and make purchases through voice assistants, while smart customer service can provide instant support and answers. Through intelligent interaction and services, brands can enhance consumer cognition and satisfaction.

5. Application of Intelligent Technology in Brand Building

Successful intelligent technology companies require strong brand cognition. Apple shapes a unique image through minimalist product design, intuitive user interfaces, and high-quality user experiences, supported by “Think Different” and “Get a Mac” campaigns that attract loyal users. Google is renowned for its powerful search engine and innovative products like Google Maps and Translate, providing personalized search experiences that win user trust. Amazon builds brand cognition through its e-commerce platform and smart home devices like Echo and Alexa, emphasizing convenient shopping and efficient logistics. IBM Watson achieves remarkable results in healthcare, finance, and other industries through cognitive computing and machine learning, expanding market influence. Smart home brands satisfy needs for personalization, comfort, and convenience, driving consumer purchasing behavior.

6. Factors Influencing Consumer Behavior Transformation in the Intelligent Era

Technology and the intelligent era significantly influence consumer psychology and behavior. Intelligent technologies make information acquisition and communication instantaneous, increasing consumer expectations for immediate gratification and inclining them toward convenient methods such as online shopping

and smart payments. Simultaneously, technology enables consumers to better express individuality, leading to expectations for personalized products and services. The rise of social media makes purchase decisions subject to social influence, as consumers rely on others' opinions to evaluate product quality, with influencers playing important roles in this process. These changes pose challenges to traditional retail while creating new opportunities for enterprises.

7. Management Strategies Under Technology-Driven Brand Cognition Trends

Understanding consumers' technology usage habits and shopping behaviors is crucial for meeting their expectations. Brand managers should utilize intelligent technologies to create immersive brand experiences that enhance consumer engagement. Rapid decision-making and real-time response to market dynamics help brands adjust strategies promptly and establish good digital brand reputations through active communication and user evaluation management. With the development of big data and AI, intelligent advertising creation models have emerged that can accurately identify consumer needs and generate personalized advertisements, thereby enhancing brand cognition. Social media serves as an important channel for brand communication, and brands should strengthen their presence on these platforms. Brands must also focus on social responsibility and sustainable development, using technological innovation to improve efficiency, reduce resource consumption, and communicate social responsibility initiatives. Brand managers should actively respond to the challenges and opportunities of the intelligent era, maintaining competitiveness through personalized positioning and user participation.

8. Research Conclusion and Prospects

Research demonstrates that intelligent technologies positively influence brand cognition and consumer behavior. Brand managers should invest in virtual reality, augmented reality, and artificial intelligence to provide immersive experiences that enhance brand engagement. As consumers prefer personalized experiences, brands should utilize intelligent technologies to precisely meet needs and improve brand loyalty. Social media and online reviews significantly influence purchase decisions, requiring brand managers to emphasize social media interaction and actively respond to feedback to establish positive brand images and enhance trust. These findings help brand managers understand new trends and adjust strategies to maintain competitive advantages. Future research should focus on cross-cultural brand cognition and the importance of technology ethics in brand marketing to ensure compliance and protect consumer rights, providing profound insights for brand marketing theory and practice.

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