Optimization and Innovation of the Operation Model of Mobile Social E-commerce under AI Empowerment: Taking the Female Community Platform "Little Red Book" as an Example

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Abstract: This article takes the female community platform "Little Red Book" as an example to explore the optimization and innovation of mobile community e-commerce operation mode under Artificial Intelligence (AI) empowerment. Firstly, the relevant concepts were defined, and then the unique attributes of mobile community e-commerce were analyzed. As a typical representative of mobile community e-commerce, Little Red Book introduces the background and characteristics of its platform, analyzes its mobile community operation mode, and focuses on exploring how to establish a mobile community e-commerce platform and effective operation mode under the empowerment of AI technology, to provide some reference and inspiration for the development and operation of Little Red Book and other e-commerce platform enterprises.

Keywords: Mobile social e-commerce; Little Red Book; Female community platform; AI; User experience; UGC

1. Introduction

Mobile community e-commerce is a new business model derived from the community economy ecosystem, which promotes the realization of product and service monetization by mobilizing the activity and dissemination power of community members [1]. Mobile community e-commerce, due to its unique community attributes and interactivity, has brought consumers a brand new shopping experience. The integration of AI technology has improved its operational efficiency and service quality, jointly promoting the arrival of the intelligent era. In this context, with the continuous improvement of women's social and economic status today, the mobile community e-commerce platform Little Red Book, mainly focused on "her economy," has developed rapidly and become a spokesperson for young, fashionable, and quality-oriented lifestyles [2]. As of the end of 2023, Little Red Book has over 100 million registered users, covering all age groups and regions. Users are mainly concentrated in first and second-tier cities, with female users as the main focus, becoming a large-scale female community

platform [3]. Therefore, this article selects Little Red Book as a case study, aiming to explore how AI technology empowers Little Red Book and its mobile community e-commerce operation mode applications and promote its innovative development, providing useful reference and inspiration for the operation and development of other e-commerce platforms in the AI era.

2. Definition of relevant concepts

2.1. Community concept

"Community" is a group of people established based on social relationships. In the context of the Internet, the initial meaning of community is to gather people with the same interests together, and users can establish an orderly and connected place according to their single purpose or needs to help further cohesion and contact.

2.2. Basic concepts of mobile community e-commerce

Mobile community e-commerce refers to the application of social elements such as attention, sharing, communication, discussion, and interaction in the transaction process of e-commerce, using mobile tools and means [4]. It is reflected in consumer store selection before purchase, product comparison, communication, and interaction through instant messages, forums, and other means during the shopping process, as well as consumer evaluation and shopping-sharing activities after purchasing goods. Mobile community e-commerce has two major attributes: openness and sharing. Openness refers to the comprehensive opening of the platform, users, and market, allowing users to freely enter and exit the mobile community network according to their needs. Meanwhile, sharing typically refers to the sharing of resources, services, and other aspects in mobile communities, bridging the supply and demand sides, and promoting emotional and trust interaction and sharing among users [5].

2.3. AI concept

AI is a branch of computer science aimed at developing theories, methods, technologies, and application systems that can simulate, extend, and expand human intelligence, including robotics, language recognition, image recognition, natural language processing, and expert systems. AI technology has become an emerging science and technology with enormous innovation potential [6].

3. Analysis of mobile community e-commerce models

In recent years, mobile community e-commerce has developed rapidly. The operation modes of mobile community e-commerce are mainly divided into the following three types according to different operation modes. Firstly, the content-based community e-commerce model conveys the products needed to users through content that leverages weak social relationships. Typical representatives include platforms such as Little Red Book, Mushroom Street, Little Volcano, TikTok, and Kwai [7]. Secondly, group buying community e-commerce is an application of the "self-purchase to save money, sharing to make money" model for users, with a full supply chain process, utilizing social circles and relationships to share and drive product sales. Typical representatives include platforms such as Yunji Weidian, Global Catcher, and Beidian. Thirdly, group buying type community e-commerce mainly focuses on small community group buying, formed by users with highly similar interests and hobbies gathered together, emphasizing sharing and communication, high-quality and affordable products, and emphasizing user experience. Typical representatives include platforms such as Pinduoduo, Taobao Special Edition, and JD.com Pingou [8].

4. The advantages of integrating mobile community e-commerce and AI

In the current context, the deep integration of mobile community e-commerce and artificial intelligence (AI) has brought significant benefits. The main advantages lie in the following aspects: firstly, the improvement of operational efficiency. The integration of AI enables e-commerce systems to efficiently process and analyze large amounts of data, simplifying workflows, reducing human errors, and improving overall operational efficiency [6]. Secondly, the service quality has been enhanced. By responding to user needs and issues in real-time, AI technology can provide customized service experiences, which not only enhances consumer satisfaction but also enhances brand loyalty. Thirdly, it promotes the sustained growth and progress of the industry. Through this integration, mobile community e-commerce can more accurately meet consumer needs while maintaining industry competitiveness and innovation [9].

5. Analysis of Little Red Book's mobile community model and AI empowerment optimization

5.1. Introduction to Little Red Book platform mode

Little Red Book was founded in 2013 and is a popular new type of community e-commerce platform aimed at providing users with a high-quality product sharing and purchasing experience. The slogan of The Little Red Book platform is "discovering the beauty of life" and its mission is to help people better enjoy a rich and fulfilling life. It helps users discover various beautiful things through sharing, recommending, and purchasing on the platform. Through sharing, discovering, and purchasing, the three closely combine to form the core value of Little Red Book, which has gained high recognition from users. With the progress and growth of society, Little Red Book continues to optimize and introduce high-quality products, provide purchasing channels, allow users to "discover," experience, and share, transform user needs into action, and achieve the transformation from "traffic flow" to "value," that is, "traffic monetization."

With the continuous popularization of technologies such as big data and artificial intelligence, Little Red Book has introduced machine learning to accurately and efficiently match massive amounts of information and people, while optimizing its business model and operations. Little Red Book's users are mainly female, accounting for about 70%. Among the top 20 internet celebrities, female fans account for over 90%, which distinguishes Little Red Book from other social media platforms. Little Red Book has become one of the female-dominated community e-commerce platforms, representing the current trend of "her economy." In 2017, People's Daily received the "China Brand Award" representing China's consumer technology industry. In 2019, it was selected as one of the "2019 Forbes China's Most Innovative Enterprises." Little Red Book has been widely recognized by the industry for its unique business model and brand culture and has won multiple honors both domestically and internationally [3]. It has been designated as a "Chinese brand" by the People's Daily and is referred to as the "Amazon + Instagram" model by authoritative overseas media.

5.2. Optimization of Little Red Book's operational model under AI empowerment

As a typical female community content social e-commerce platform, Little Red Book's introduction of AI technology has improved user experience and continuously optimized its operating mode, mainly including the following aspects:

(1) AI assists User-Generated Content (UGC) production mode and enriches content innovation: Little Red Book utilizes AI technology to assist in the production model of UGC, enriching its content innovation. Its core lies in stimulating and aggregating user creativity, with UGC as the cornerstone, constructing a dynamic and highly interactive community environment [10,11]. In this community, users enthusiastically

share their experiences and insights. The authentic and enthusiastic interactive atmosphere not only deeply engages existing users, but also continuously attracts new users to join. To continuously optimize the user experience, Little Red Book cleverly integrates AI technology into it. Through advanced intelligent recommendation algorithms, in-depth analysis of user behavior, content quality, and interactive data can accurately grasp user interests and needs, thereby presenting personalized and tailored content and service recommendations to users. Simultaneously, AI also serves as a powerful assistant for content creation, providing data analysis and optimization suggestions to help create more influential and attractive content, further stimulating user engagement [12].

(2) AI empowers community-based operations to reach consumers: Little Red Book utilizes AI technology to empower community-based operations and reach consumers, meeting their diverse needs and inspiring emotional resonance [12]. Through AI technology, Little Red Book has enhanced and refined community operations, achieved deep integration between brands and communities, built precise user profiles, provided more precise target user groups, and helped businesses develop effective marketing strategies. Little Red Book transforms user needs into actual sales momentum leveraging insights into customer diversity and the strength of the community. Communities have become a bridge of communication between brands and consumers, enabling brands to reach their target users more accurately. On this basis, Little Red Book utilizes the influence of the community to effectively convert community traffic into actual purchasing power. Concurrently, Little Red Book meticulously plans brand community activities through AI to help strengthen the commercial connection between the brand and consumers, while touching the hearts of consumers through activities, attempting to establish deep emotional identification and resonance [13]. Under the "internet celebrity economy," once an emotionally charged "internet celebrity/fan" relationship is established, it will go beyond simple commercial transactions and become an emotional connection and resonance, strengthening fan loyalty [3,14].

(3) Intelligent customer service and interaction: AI technology provides intelligent customer service and interactive functions for Little Red Book. Through tools such as chatbots, Little Red Book can quickly respond to user questions and needs, providing personalized services and solutions. This not only improves the user experience but also reduces the burden of manual customer service and improves operational efficiency. Meanwhile, intelligent interactive functions can enhance the interaction and engagement between users and the platform, promoting user participation and sharing.

(4) Data-driven precision marketing: With the strong support of AI technology, Little Red Book has achieved data-driven precision marketing. Through in-depth analysis of user data, Little Red Book can accurately grasp user preferences and behavior patterns, presenting personalized content recommendations and product choices for users [6]. At the same time, a carefully designed algorithm system ensures the efficiency and accuracy of content recommendation, with each step carefully polished to ensure that high-quality content stands out, receives wider exposure, and actively interacts with users. Targeting the female user group, Little Red Book presents diverse content on the homepage, meeting the diverse interests and needs of users, thereby improving user satisfaction and platform attractiveness [15]. This precision marketing strategy not only promotes sales effectiveness but also enhances the emotional connection between users and the platform, injecting vitality into the continuous growth of the brand.

6. Conclusion

Under the empowerment of AI technology, the operation mode of mobile community e-commerce is undergoing significant optimization and innovation. This article takes the female community platform "Little

Red Book" as an example to deeply explore the key role of AI in community e-commerce operations. Firstly, research has found that Little Red Book has successfully built a commercial closed loop by adopting the UGC production model, enriching platform content, and improving user engagement. Secondly, through refined community operations, Little Red Book has effectively reached and attracted a large number of consumers. The introduction of intelligent customer service systems has improved user experience and platform interactivity. The most important thing is that by using AI technology for data analysis, Little Red Book has achieved precise marketing and delivery of content, greatly improving marketing efficiency and user satisfaction. In summary, AI technology has brought new opportunities for the operation of mobile community e-commerce, injecting strong impetus into the continuous innovation and development of the industry. Future research can further explore how to maintain the competitive advantage of mobile community e-commerce in a constantly changing market environment, as well as how to innovate operational models to meet the increasingly diverse needs of users.

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