Available Online: 20 June 2025 DOI: 10.54254/2753-7102/2025.24344

Algorithmic chains and social media mazes: the filter bubble dilemma in Xiaohongshu's marketing strategy

Jiali Chen[1*], Chenlu Ding[1]

[1]Lingnan Unversity, Hong Kong, China

*Corresponding Author. Email: chenjiali0829@outlook.com

Abstract. Social media platforms such as Xiaohongshu have reinvented brand marketing through user-generated content (UGC) and personalized advertising. However, the platform's unique content ecosystem and algorithmic recommendation mechanism have exacerbated the "information cocoon" phenomenon and even created an "echo chamber" effect. This paper explores Xiaohongshu's marketing strategy, including content creation, community interaction and commercial promotion, and analyzes how it builds a closed loop of homogenized content and limits users' exposure to diverse perspectives through excessive marketing. The study reveals that the platform's reliance on UGC, influencer-driven content and targeted advertising reinforces group identity and narrows consumer choice, which in turn hinders the development of a more diverse and informed user base. Through comparisons with other social media platforms, such as Weibo and Douyin, this paper highlights the different impacts of algorithmic recommendations and social interactions in the formation of information cocoons. The findings suggest that social media platforms should find a balance between marketing strategies and the promotion of diverse content to ensure that users are exposed to more diverse perspectives and thus make more informed and autonomous decisions.

Keywords: marketing strategy, information cocoon, user-generated content, homogenization, community interaction, algorithmic recommendation, echo chamber, social media influence.

1. Introduction

In the digital era, social media has become an important position for brand marketing. Xiaohongshu, as a social e-commerce platform with the core concept of "planting grass", is rapidly emerging with its unique content ecosystem and strong user stickiness. As of 2024, Xiaohongshu's monthly activity has reached 260 million, covering beauty, fashion, travel and other fields [1]. According to the latest data, more than 70% of users are between the ages of 18 and 34, with more than 60% female users. This user structure provides good marketing opportunities for brands.

However, Xiaohongshu has not only become an important channel for users to share their life experiences and consumer recommendations, but has also significantly exacerbated the phenomenon of "information cocoon" due to its unique marketing strategy [2]. The "information cocoon" refers to the phenomenon that people in the Internet environment only select the information they are interested in and agree with to receive, thus gradually forming a closed information space, like a cocoon that wraps itself up [2]. With the increasing popularity of social media platforms, the problem of information cocoon has become more and more serious, and has become one of the important factors affecting individual cognition, public opinion and social pluralism.

Xiaohongshu, as an application focusing on content sharing and community interaction, has become increasingly homogeneous in its content creation, leading to a scarcity of personalized expression. At the same time, the platform's recommendation algorithm filters out non-consensus information by tracking user behavior, so that users can only be exposed to content that is highly compatible with their interests, thus solidifying the narrowness of group identity and opinion formation [3]. Driven by commercial interests, Xiaohongshu also continuously pushes out advertising information targeting specific user interests, exacerbating the homogenization of information content and forming a closed information loop. This series of factors intertwine to cause users to subconsciously fall into an information cocoon, limiting their exposure to and understanding of diverse perspectives and information.

This paper will explore Xiaohongshu's marketing strategies in terms of content creation, community interaction and commercial push, and analyze how these strategies work together to promote the formation of the information cocoon phenomenon. At the same time, this paper will also compare and analyze the differences in marketing strategies and algorithmic

pushing of other domestic mainstream social media platforms, and explore how they play different roles in the information cocoon phenomenon, in order to reveal the deeper mechanisms and social impacts behind these platforms, and thus provide new perspectives and theoretical support for the fields of social sciences, media research, and network communication.

2. Marketing strategy and the information cocoon

2.1. Content creation convergence

As a user-generated content (UGC)-centered platform, Xiaohongshu has always encouraged users to explore and create unique content, providing a place to share their lives and exchange ideas [4]. However, with the increase in users and the constant influx of content creators, the phenomenon of homogenization has emerged on Xiaohongshu, and many creators have fallen into the quagmire of imitation in order to retain fans and gain traffic, further exacerbating the formation of the information cocoon and leading to the proliferation of topics that should be novel and interesting, which have become uninteresting and ubiquitous.

The topic of "Rongchang Braised Goose Brother" originated from the "feeding Brother" who kept "riding on" Speed's popularity during his live stream in China. As his attention grew, more and more people became curious about the taste of the braised goose he kept feeding Speed, and the platform was filled with similar notes. Users' repeated exposure to similar content and posts limits their access to broader information. In this situation, consumers' choices are gradually influenced. They are no longer based on personal taste and needs, but following the trend has become a collective behavior, forming a "herd effect". The formation of an information cocoon may also lead users to grow tired of the platform, reducing its usage frequency and stickiness.

This phenomenon is not an isolated case, but a common trend in the social media environment. Homogenization is not only manifested in content topics, such as product reviews, usage tips and travel sharing, etc., but also in language, style, composition and other aspects showing highly similar characteristics. When users are exposed to content that is highly compatible with their own interests and perspectives for a long period of time, the platform gradually develops the phenomenon of “information cocoon”, i.e., users only receive similar information, which further strengthens their existing preferences and perceptions, and limits exposure to multiple perspectives. In this closed information environment, their consumption choices tend to become single-minded and blind. This consumption behavior not only reflects an individual's following of fashion trends, but also aptly illustrates the powerful ability of brands or content creators to use social media to influence and guide consumers. With the increase of homogenized content, the platform ecology is gradually caught in a vicious circle: the lack of quality content makes users bleak, and the loss of users affects the generation of new content, ultimately leading to more products that are superficial, and in-depth exchanges and high-quality consumption that are gradually marginalized.

Today's consumer culture is not only about the circulation of goods, but also about the reconstruction of lifestyles and values. How to correctly treat the influence of consumerism and social media is a self-reflection that every user and content creator as well as platform should do.

2.2. Information filtering and group consensus in community interaction

Xiaohongshu is both a content sharing platform and a social interaction platform [5]. Users influence content dissemination through behaviors such as liking, commenting, and sharing, tend to communicate with like-minded people, and pay attention to bloggers who have similar preferences and life experiences as their own. This circled social behavior promotes healthy communication among users at the initial stage, but in the long run, it may lead to homogenization of views and deepening of prejudices, thus forming a closed social circle and reinforcing the formation of an information cocoon.

Take the cooperative marketing between Nana Ouyang and UBRAS as an example, she posted UBRAS-related marketing posts in Xiaohongshu several times, which enhanced users' goodwill towards the brand by virtue of her public influence and her delivery of fashionable and healthy lifestyles. Many followers purchased the brand's products without sufficient information because they trusted her. As shown in Figure 1, UBRAS doubled its sales in just a few months through Nana Ouyang's promotion on Xiaohongshu and successfully established itself in the lingerie community, a phenomenon that had not occurred before in the brand's marketing on other platforms. Over a long period of community interaction, a relatively closed social circle was formed between Nana Ouyang's loyal fans and UBRAS' real consumers. They continue to share their experiences with the brand, tips and special offers on Xiaohongshu, forming an “information cocoon” that belongs to UBRAS alone. The information here is not only limited to the brand and the product itself, but also covers a broader discussion of lifestyle and fashion concepts, which often subconsciously strengthens the sense of identification with the brand [6].

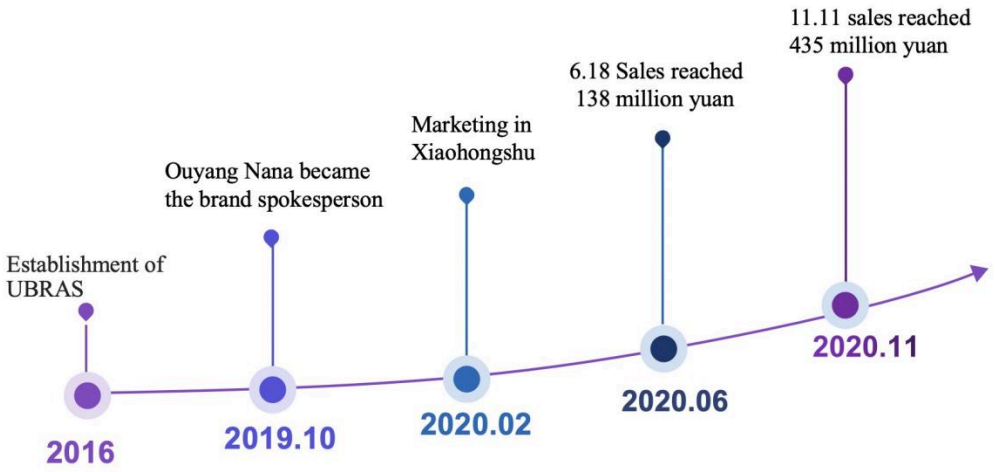

Figure1. The development of UBRAS

The group consensus of Xiaohongshu Influencer, exemplified by Nana Ouyang, has exacerbated this phenomenon to a certain extent.Influencer is not only a spokesperson in brand communication, but also plays the role of guiding, educating and communicating. Ouyang Nana closely integrates herself with the UBRAS brand so that fans subconsciously see the two as one. This influence extends beyond the product itself to the shaping of life attitudes and consumer concepts. When fans frequently see Ouyang Nana-related content on Xiaohongshu, they form a collective awareness of the brand, which is deepened through constant interaction and sharing, making the brand image take root in users' minds. However, this Influencer-centered communication model may weaken individuals' ability to think, create cognitive bias, and make them rely more on the influence of idols than on their own real needs when consuming.

Highly centralized and hierarchical social interactions hinder the dissemination of multiple viewpoints [7], making it difficult for users to access voices that differ from their own, thus creating a cognitive “echo chamber”. In the future, in the face of this trend, both platforms and users need to reflect on how to enjoy the convenience of social interaction while maintaining independent thinking and diversified exposure to information, so as to avoid blind consumption and deepening prejudice.

2.3. Commercial interests and advertisement push

The core of Xiaohongshu's ad push mechanism lies in the capture and analysis of user data. By capturing users' search records, browsing history, likes, comments, and purchasing behaviors, the platform builds a detailed user profile and delivers ads that are highly relevant to their interests, a personalized recommendation that can help users quickly find the products they are interested in [2]. However, advertisers often focus on short-term traffic guidance and sales conversion, while ignoring users' long-term needs and experiences. Once users show a strong interest in a certain type of product, the platform will keep pushing relevant ads, leading users into a cycle of continuous consumption. Although this strategy can improve sales in the short term, it limits the user's access to other products and brands, further exacerbating the formation of the information cocoon.

As a well-known domestic skincare brand, Perrier utilizes Xiaohongshu, a social platform, to precisely target user profiles and place content [8] to achieve effective marketing goals. In the early stage, Perrier matched user profiles with advertisement content, and selected users were prioritized by the system to push these advertisements when they logged into Xiaohongshu, and were even frequently exposed to Perrier-related UGC content in subsequent content streams. After purchase, Xiaohongshu will increase the frequency of similar content pushed to them. Meanwhile, users' interactive behaviors (e.g., likes and comments) continue to optimize the accuracy of the platform's portrait of them, reinforcing the brand's influence [4].

In this case, the algorithm captures each user's online behavior and provides them with more “personalized” content, which results in users being gradually isolated from their own circles of interest, despite the fact that their original intention was to improve their experience. The information cocoon not only affects users' consumption decisions, but also subtly changes their perception of the world. When users are immersed in an area of interest receiving highly relevant information about it, they may miss out on other important perspectives or choices. This limitation of choices somehow affects users' ability to think deeply and make judgments. After forming a habit, users often lack the desire to try new products and brands, and ultimately rely on “safe” products recommended by algorithms.

The Xiaohongshu platform uses the user's personal data to make precise recommendations, which is essentially an act of maximizing commercial interests. But behind the precision marketing, it also makes us wonder whether the platform has the

responsibility to ensure the diversity of information and the right to choose.

3. Differences in information bubbles from marketing and algorithmic pushes

Compared with Xiaohongshu, although Douyin and Weibo also use precision recommendation algorithms, there are obvious differences in information bubbles from marketing strategies, algorithmic bases, and traffic distribution due to differences in platform positioning and user interaction.

Table 1. Comparative analysis of multi-dimensional ecosystem features in main social platforms

Platforms Dimensions	Xiaohongshu	Douyin	Weibo
Platform Characteristics	UGC Oriented Social Communit	Entertainment-Driven Short Video Platform	Open-Access Social Platform
Marketing Characteristics	Vertical Communities for Female Audiences	Interest-driven Fragmented Content	Content Driven by Trending Topics
Algorithmic Foundations	User Interest Tags	Personalized Recommendation	Trending Search Rankings
	Online Community	Collaborative Filtering Technology	Influencers
	/	/	Celebrity Effect
Traffic Allocation	User engagement authenticity	High-interaction content	Diversified content
	High-viscosity interest communities	Lightweight and fragmented	Deep platform impact
	Precise content recommendation	Amplification of traffic pool effects	Strong economic intervention
Information Cocoons	Strong limitations	Over-entertainment	Clear segmentation of user groups
	Gender bias	Regional and cultural stratification	Risk of opinion polarization
	Limited depth	Content homogenization	/

According to Table 1, we can see through user-generated content (UGC) and accurate recommendations, Xiaohongshu builds a closed information cocoon around user interests, limiting the breadth of vision. Douyin relies on the instant feedback of short videos, and its entertainment-first algorithm strengthens user interests, weakens content diversity, and immerses users in homogenized content. Weibo, on the other hand, is centered on hot topics and circled communities, which are more public, but the information segregation between circles exacerbates group bias and makes it difficult for users to break through information barriers by communicating within their own circles [9].

In terms of marketing strategies, Xiaohongshu and jingyin rely more on algorithms to recommend homogenized content, while Weibo promotes content through platform interventions and hot search lists. All three mechanisms may lead to the formation of an information cocoon, but with different manifestations and degrees of influence. Xiaohongshu and Douyin's cocoon is mainly manifested in the homogenization and homogenization of content, while Weibo manifests itself in the rapid birth and decay of topics and platform intervention.

Behind this difference, Weibo's strategy is particularly noteworthy. It plays a key role in building an information cocoon by deeply intervening in information flow dissemination through hot search lists and star content recommendation algorithms.2023 Sina's financial report shows that Weibo has more than 600 million monthly active users, of which 70% of the traffic comes from hot search lists and celebrity content, with click-through rates of hot search content accounting for 40% of the platform's total traffic.

Taking the promotion of Korean Kpop as an example, Weibo demonstrates cultural diversity at the macro level through circle segregation, but the phenomenon of information cocoon is formed at the micro level. According to Future Intelligence's report, there are an average of seven or eight Kpop-related hot searches on Weibo every day, and various marketing numbers post at least two to three Korean celebrity updates every day. These features aggregate fan activity such as posts, views and interactions, driving huge engagement. For example, BLACKPINK's Super Topic has recorded over 13 million posts and 18.5 billion views. Meanwhile, Weibo's “Hot” list - comprised of trending topics - is largely determined by user interaction, including post volume and search activity. The system often promotes both organic fan content and commercially-driven promotional material, helping to boost K-pop's exposure.

In China, Kpop groups such as BLACKPINK have gained huge fan interactions and revenues through marketing and promotion on Weibo, a burgeoning phenomenon that is not simply the natural spread of culture, but the result of low-cost interventions by platforms and capital. Compared to other platforms, Weibo's traffic promotion costs are low. 2020 comparisons

of single-user advertising revenues show that B-station was ¥22.5, Douyin was ¥12.3, and Weibo was ¥11.7 [10], which allows capital and brands to promote the explosion of marketing and advertising content such as Kpop on Weibo with relatively small investments. This strategy has exacerbated the formation of the information cocoon phenomenon despite the huge economic benefits it has brought.

By pushing pop culture symbols (e.g., Kpop stars) to specific circles of users through its Hotlist and Super Topic functions, Weibo reinforces cultural homogeneity and concentrates users' content consumption in specific areas, making it difficult for them to be exposed to diverse cultures. Although Korean pop culture seems to be “hot” in the Chinese market, it is still a niche culture, and its dissemination is more limited to specific fan groups. At the same time, super topics and recommendation algorithms reinforce the consistency of opinions and similarity of interests within fan groups, forming circle segregation and weakening cross-circle information dissemination.

The platform's traffic tilt and capital intervention prioritize pushing commercialized content, reducing the visibility of non-commercial content and information diversity. More than 50% of Weibo's trending topics involve commercial promotion, marketing ad revenue accounts for 75% of total revenue, and user satisfaction with content diversity has declined by 20% year-on-year [11]. Bandwagon ads encroach on original content channels, further limiting users' access to a wide range of information, resulting in 65% of users believing content recommendations are one-dimensional and 55% dissatisfied with too many ads [12]. Recommendation algorithms reinforce established user preferences, creating a feedback loop that exacerbates content homogenization. In addition, hot search lists focus public attention on specific hotspots (e.g., K-pop stars) and diminish attention to other social issues. These phenomena exacerbate the information cocoon effect, undermine user trust, and threaten the platform's long-term brand image.

Similar to Weibo, Jitterbit was once overly reliant on entertainment content and homogenized marketing strategies, which led to the information cocoon phenomenon, attracting a large number of low-quality users and ultimately triggering a loss of users and damage to the brand image. In recent years, Jitterbug has actively promoted changes in the ecosphere. The success of the Oriental Selection live broadcast, for example, is closely related to the collaborative filtering algorithm [13] of Jitterbites to push the stream. In the early stage of the live broadcast, the platform streaming accounted for more than 40% of its traffic structure, driving the live broadcast viewership and sales to record highs, with an average of 6.61 million viewers and an average of more than 10 million yuan in sales [14]. The platform push streaming significantly increased brand exposure, while enhancing fan interaction and purchase conversion. Through the innovative bilingual live streaming format, Oriental Selection broke the limitations of entertaining and homogenized content, attracted a large number of users, and promoted the positive transformation of Douyin's content ecosystem.

However, despite the strong traffic support provided by Douyin, the conversion rate of Oriental Selection on its own APP is still low, showing that its reliance on Douyin's traffic push creates a new information segregation phenomenon. Despite obtaining huge traffic through Douyin, its brand's traffic control ability and user migration effect are limited. This suggests that while Douyin's accurate algorithmic traffic push has boosted the presence of highly culturally literate and knowledge-based content on the platform, it has also created a new information cocoon. Users may mistakenly think that they have gotten rid of homogenized content, but they are actually still restricted to a new type of cocoon designed by the platform's algorithms. In this information cocoon, users' choices are once again guided and limited by the platform. Despite the greater value and depth of content types, users' access to and exploration of other information remains limited. This situation shows that while platforms are promoting the transformation of the content ecosystem, they are also inadvertently shaping a new information segregation environment.

Compared with Douyin and Weibo, Xiaohongshu's content ecology is relatively healthy, but it may also unintentionally amplify certain biases and stereotypes in the process of placing UGC precision marketing. As the platform's main user group is female, some creators, in order to attract traffic, publish biased content that deliberately amplifies gender oppositions, and even label men as “low-intelligence” or “unromantic” while portraying women as “victims” . In August 2024, Yourkris, a foreign beauty blogger on Rednote, posted emotional notes when she parted with her boyfriend, which triggered widespread attention and hot discussion among Chinese netizens. Many netizens comfort her with distinctive "Chinglish" messages, such as "you are beautiful, he is ugly, you are a swan, he is a toad", these unique messages not only resonated in China, but also hit the Internet, foreign netizens on X spicy comments. Xiaohongshu uses its CES (Community Engagement Score) algorithm to recommend content based on user interactions (e.g., likes, comments, shares, etc.) and decide whether or not to further engage with the content. The CES (Community Engagement Score) algorithm recommends content based on user interactions (e.g., likes, comments, shares, etc.) and decides whether to push further. This algorithm tends to push emotional and controversial content to increase user engagement and form a single community, which causes some users to be immersed in a single narrative for a long period of time, reinforcing pre-existing biases and creating an information cocoon effect. The ensuing echo chamber effect further amplifies the same viewpoints and marginalizes different opinions. This not only reduces the diversity of platform content, but also exacerbates the crisis of trust and even deepens group antagonism. Today, CES scoring metrics have become richer and more diverse, but the bias of this algorithm may still lead platforms to recommend emotional and controversial content to increase user engagement, while content regulation and guidance may be insufficient.

4. Conclusion

Social media platforms of this type, represented by Xiaohongshu, have reshaped the digital marketing landscape through the business model of “community + e-commerce” [15], where precision marketing and algorithmic recommendations create highly personalized consumer experiences. However, the phenomenon of excessive marketing information bubbles makes users only have access to content that matches their own consumption preferences, thus limiting the breadth of their vision and thinking. Xiaohongshu's unique combination of content creation, community interaction, and commercial promotion has led to this information cocoon phenomenon, which has left users trapped in an “echo chamber”, where their choices are limited to algorithms. Their choices are limited to what the algorithm recommends. This cycle is further fueled by influencer-driven content that reinforces group identity and collective bias. This not only inhibits the exchange of diverse values, but also makes users myopic and one-sided in their information choices, leading to misunderstandings of the market and poor consumer decisions, and subconsciously affects the cultural diversity and value formation of society.

Although Xiaohongshu offers excellent marketing opportunities due to its large and active user base, the consequences of algorithmic curation and content homogenization pose a serious challenge to information diversity and user autonomy. By comparing the closed information environment constructed by Xiaohongshu's UGC and accurate recommendations, the homogenized content reinforced by Douyin's short-video feedback mechanism, and the information segregation exacerbated by Weibo's hot searches and circled communities, it can be seen that while these platform strategies bring economic benefits, they also weaken the diversity of information, amplify user bias, and damage the platform's long-term brand image. Therefore, in pursuing commercial interests, platforms must find a balance between content diversity and user autonomy and choice, and break the limitations of the information cocoon.

To this end, social platforms should more actively explore ways to balance commercial interests and user needs, promote the dissemination of authentic and diverse information, break the limitations of the information cocoon, and allow users to enjoy personalized services while being exposed to a richer range of perspectives and experiences, so as to cultivate a more comprehensive vision and judgment. Only by effectively breaking down the barriers of the information cocoon can future social platforms truly become bridges for communication and understanding rather than islands of information[7]. Platforms also need to take on more social responsibility to provide users with convenience while creating an open, diversified and positive network environment, in order to allow social platforms to promote the development of consumption and culture, while promoting a more rational and tolerant social atmosphere.

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