

Analysis on the Application of Psychological and Business Strategies of Douyin to Build up Consumer's Addiction

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Abstract. The modern society has been developing rapidly, and the Internet has become one of the most revolutionary development throughout the eras. Nowadays, people's high reliance on the Internet inevitably leads to the development of diverse online products, one of which is the occurrence of the short video applications. A typical representation of a successfully run short video platform is Douyin, which is the research objective of this paper. This research aims to investigate the strategic mechanisms utilized in the platform Douyin, in terms of both psychological and commercial aspects. This paper focuses specifically on how the use of strategies forms a habit-forming technological product which causes individual's high addiction. To conclude, the hook model and recommendation algorithms can be the main mechanisms that cause user addiction to Douyin platform.

1 Introduction

The phenomenal and rapid growth of online technologies has significantly impacted people's modern life around the globe. Innovation of mobile technologies has successfully shifted people's reliance on wired technologies to mobile ones, which require less space and bring more convenience. With the surge of electronic devices such as mobile phones, tablets, and laptops, the number of users of such has also increased dramatically. According to Statista's survey released in February 2022 [1], China's registered mobile Internet users increased from 302.73 million in 2010 to 1028.74 million in 2021, accounting for one-fifth of the world's total. According to the China Internet Network Information Center (CNNIC), "the share of Chinese users accessing the internet via mobile phone had already surpassed users who accessed the Internet via PC since 2014." Douyin, the Chinese version of an app known as TikTok, established on the 11th of March 2016 in Beijing, and is now playing a national leading role in the industry, turning itself into one of the most welcomed apps for people. Referring to the Insider Intelligence website [2], the data displays that 639.4 million active daily users are on Douyin, and it is predicted to expand up to 835 million in 2025. According to its official site [3], the platform's obligation is to inspire creativity, inspire life, and help people maintain a beautiful life. Therefore, various kinds of videos with positive and original content are promoted on the platform of Douyin, which contributes to a person's great life.

This paper aims to investigate the commercial and psychological strategies behind the platform Douyin and reveal the mechanisms which generate addiction through an analysis of principles and theories. The author studies

how Douyin uses different strategies to build up its product and successfully play a leading role in the modern video platform industry. Moreover, its social influence, especially its negative impacts to consumers are analyzed in this paper in order to better understand its product from more dimensions.

2 Strategies of Douyin for Stimulating User Interest

2.1 The Hook Model

In the book 'Hooked' written by Nir Eyal [4], four concepts, also referred to as the hook model, of how to build habit-forming products are elaborately analyzed. The four principles are the four psychological stages a consumer proceeds through, and in the end, they are a loop that build a habit-forming product. The 4 stages start with a trigger, then an action that accomplishes the trigger, next with a variable reward given to the action, and eventually with the investment that gives values to the user. Figure 1 from the website ProductPlan visually presents the hook model [5], illustrating 4 principles that act as a loop, resulting in consumers' frequent and voluntary reliance on a product.

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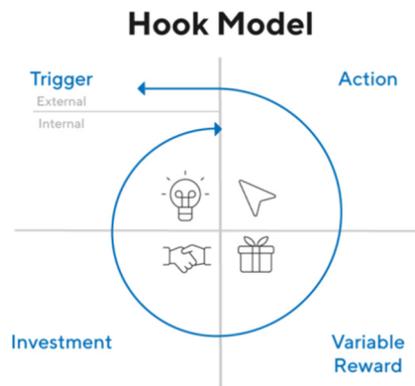


Fig. 1. The Hook Model [5].

Trigger. Trigger is an actuator that stimulates behavior, which initiates people’s thoughts of something immediately. There are two types of triggers, external trigger and internal trigger.

External Trigger. External trigger refers to the elements delivered from the outside environment that provokes thought. In the case of Douyin, the design of the app icon, the video notification, and the viral music and dance all contribute to the form of external triggers. These triggers can link with each other. When people think of the music and dance, they automatically relate to the fact that these specific elements occurred repeatedly in Douyin, then the image of Douyin’s icon appears in their mind. In addition, Douyin also initiates collaboration with assorted platforms to construct more external triggers. According to the Douyin official site about collaboration [6], platforms across different industries, such as ‘Mao Yan Entertainment’ from the entertainment industry, ‘Blast Boy’ from the gaming industry, and ‘Capcut’ from the video editing industry, all work with Douyin. For instance, a user can directly select a range of music from his or her Douyin saved list when using Capcut, and can also directly share the video edited in Capcut to Douyin without switching the app. According to the official site of Capcut [7], Douyin and Capcut collaborate simultaneously to ensure the creation of high-quality content and its widespread distribution to users, offering great closed-loop marketing for the content creator and advertisement sponsor, due to the successful spread of data and insight. The external triggers of Douyin tempt consumers into not only thinking about the app when related content appears but also raise people’s level of interest or attention to the app by collaborating with numerous apps across diversified industries.

Internal Trigger. The internal triggers are triggers that elicit connections to ideas or emotions, which are usually intangible and varied. Negative emotions that last for a short period of time, such as boredom, depression, and loneliness, are some of the typical emotions that link with triggers. Surprisingly, Douyin has the ability to satisfy these emotions together. Boredom can lead consumers to use Douyin to watch videos, which creates a task filled with diversity for people to distract their focus from boredom and to enjoy. Depressed emotions can lead people to use Douyin to search for positive videos that can motivate them. Loneliness leads consumers to connect with followers or friends through commenting,

mentioning, or even starting lives and meeting new people on the platform. All of these internal triggers are linked with the desire of using the app.

With both external and internal triggers clearly present in Douyin, the next step in the loop is the action.

Action. With the expectations formed by triggers, consumers demand an action where they take tangible behavior to satisfy the triggers. However, the action should meet three elements according to the Fogg Behavior Model [8], where B (behavior)=MAT (M for motivation, A for ability, and T for trigger). Triggers already exist for Douyin users. The concept of motivation indicates the presence of pleasure, hope, and social acceptance. For one thing, Douyin offers a limitless range of videos, which is a pleasure and hope for the consumers, as they may hope to find joy and positivity by viewing the content. This corresponds with Douyin’s core value mentioned before, which is to inspire creativity, inspire life, and help people maintain a beautiful life. For another, people’s need for social acceptance can also be satisfied with the interaction with other users on Douyin, such as following each other, giving likes, comments, and reposts. All of these build up one’s self-confidence and social acceptance. After motivation and trigger are both secured, Douyin continues to drive the consumers to feel that they have the ability to take an action. Douyin provides short videos that last for only around fifteen seconds to ten minutes [9]. Therefore, users can take a low extra cost to make videos on Douyin since it only requires one mobile device and can be accessed in any external environment as long as the internet is available. It is also very approachable for users to create content quickly, because shooting short videos is time-saving and only requires a few clicks on the screen. Due to the convenience, the number of Douyin users has increased a lot, allowing the platform to be more interactive as more people are willing and able to spend time and energy on it.

Variable Award. The next stage in the loop is the variable award, which is about receiving a reward that is not fixed, therefore it is different each time. The variable award has the same effect as any fixed award, which is encouraging consumers with things that please them, so that they can constantly build up trust, affection, and reliance with the platform. From the perspective of content creators, they must hope their videos to be viewed by more people when the videos are posted publicly. Since videos posted on Douyin are usually short and the platform has a very strong and active user base, one of the most appealing awards for the users is the rapid distribution of their videos. Douyin delivers the video to abundant users, which usually results in the creator receiving likes, comments, reposts, and duets. These positive feedbacks from other users act as an award since positive feedback is a signal of popularity that allows the creator to be more engaged and motivated. It is a variable award but a fixed one due to the diversity of content. Each time the content varies with the music, setting, character, video length, etc, it indicates that each video posted on the platform is unique. Thus, the award varies each time, depending on the quality of content and number of followers. This mechanism inextricably stimulates consumers to create content in the long term, with the goal of producing better content,

gaining more views, and eventually growing to be an account with a high number of followers.

When considering the point of view of the non-content creator, the mere video-watching consumers, there is also variable awards. All of the videos in Douyin appear on the 'for you page' with full-screen mode according to the system's recommendation algorithms. The curiosity is formed each time when a user scrolls the screen in order to switch to a new video. The consumer cannot predict the content of the next video, so every scroll brings originality and exploration, which encourages them to keep scrolling and immersing with a sense of mysterious and addictive experience.

The presence of variable awards is vital for turning a product into habit forming. Everyone needs new dimensions within a product to feel actively engaged and interested in the long term. If users always know what award they will receive in advance, the expectation for and willingness to use a product can be gradually reduced. The variable award is an important factor contributing to a product's life cycle, focusing on creating an experience beyond what users expect.

Investment. The final step in the hook model is the investment, where consumers invest time, effort, money, and emotions into using a product. The voluntary investment corresponds with the expectation of a gratified output. An increase in investment over time depends on the amount of output a consumer receives. The more investment there is, the more dependence and addiction to Douyin one can form, particularly with the surge of views and followers as variable awards, which causes further investment.

Investment does not mean to force users to spend money, but to shape users' habit-forming behavior toward a product so as to build up trust. Investment also provides a respected and personal interpretation of the product experience, which may help improve the product by reporting any issues or suggesting any advice to the platform. Investment influences the previous three stages of the hook model, leading triggers to be formed more easily, actions to be more feasible to occur, and rewards to be more attractive and desirable.

2.2 Recommendation Algorithms

The recommendation algorithm is a systematic and logical calculation method that deduces accurate and complete recommendation data in the video page of Douyin. It helps the app to obtain efficient output within a limited time and input. Powerful algorithms not only save users' time and cost in finding high-quality content but also enable an efficient operation of the platform. Douyin has rapidly expanded into the Chinese market and accumulated a massive portion of users in a short period of time, and one of the reasons for its success is inevitably the intelligent algorithm system. Douyin adopts an algorithm to determine the dissemination of videos mainly from two dimensions.

Targeting on Users' Personal Information. When a new user registers and logs in to the account, personal information such as name, age, gender, city of residence,

and career are all being filled out. It is the first data set the algorithm system is supposed to be in control of. In addition, there is also a choice of logging in using a third-party social account, which leads the algorithm to explore some previously existing personal information and historical social behavior, enabling the system to further investigate the user's behavior, habits, and interest efficiently [10]. The next content that appears on the screen is the selection of labels about interesting fields, including but not limited to comedy, animation, gaming, food, healthy lifestyle, sport, fashion and etc. It is compulsory to complete the selection of some areas of interest before starting the app.

Targeting on Users' Online Interactions. In the digital era, "the users are no longer just passive receivers and consumers of information, but also active senders and producers [11]." Therefore, another method of calculating precise recommendations is based on an analysis of users' social interaction, which can be classified into two categories. The first category is calculated according to the connection of accounts among the user's friends, family, and phone contacts, who are mutual friends on the platform with the user. The algorithmic mechanism is tracking the number of interactions between the user and the friends, where if the more are detected, the closer connection of such social relationship Douyin will assume the user is having. Therefore, it is highly feasible that the algorithm recommends similar or the same content that the friend has liked to the user's page, with the assumption of close friends share a similar field of interest.

The other category is based on analyzing users' interaction of comments, likes, and reposts with unfollowed accounts or non-mutual friends. When the Algorithm detects that a user often likes videos from the same creator, the system infers a high likelihood of the user keep liking new videos made by that creator. As a result, the platform identifies such phenomenon as an attribute of the user's interest, resulting in frequently promoting videos of that creator to the user's page. In other cases, when a user often likes videos of the same type, such as videos using the same hashtags, then the Algorithm will learn to customize such videos into the user's field of interest, thus increasing the chances of users watching such videos.

The recommendation algorithmic mechanism successfully helps Douyin to pinpoint an individual user's domains of interest. This can help raise user stickiness with the product, further enhance users' dependence on the platform, and increase usage time and frequency.

3 Problems of Douyin's Addiction Strategies

3.1 Creating Limited Vision

The utilization of both the hook model and the recommendation algorithmic mechanism systematically meets the needs of the consumer by providing a habit-forming product with customized and personalized content according to the user's preferences. However, the most evident drawbacks are also due to such mechanisms.

Only offering content favored by consumers in a video platform limits the growth of users' vision, narrowing their perception of information and knowledge. Consequently, such mechanisms may result in one's solidification of ideas to an extent, leading the audience get immersed in the virtual world built up in Douyin.

3.2 Losing Self-control

The 4-step loop discussed in the hook model illustrates how consumers can form a habit of using Douyin, which results in an outcome of losing the ability to stop. Once consumers have formed the habit of checking Douyin in their free time, such habit can be worsened to a circumstance where consumers lose self-control and intentionally create spare time to check Douyin videos even during their working time. It is an over-reliance that may cause the loss of self-discipline and make people feel unable to focus on reality.

4 Conclusion

In conclusion, Douyin efficiently utilized the strategies mentioned above to form a highly addictive platform for its users. When shaping its habit-forming product, Douyin adopts the hook model containing four stages, namely the stage of trigger, action, variable award, and investment. The adoption of hook model makes users generate a systematic and complete psychological mindset. Such mindset is the direct trigger that connect Douyin with its users closely, leading the consumers to be highly reliant with the platform. Additionally, the platform's precisely designed recommendation algorithm system calculates the user's field of interest by referring to the past searching record, liked content, interacted account, etc, to form a favorably personalized recommendation page, or known as the "for you page". Application of such a method ensures the information with a high possibility of interest to the users will be disseminated on the page. This has caused users to almost exclusively watch the videos of a similar genre without feeling exhausted since they are interested in those topics. Negative impacts also arise as a consequence of these successful mechanisms. Limited vision due to recommendation algorithms is inevitable, and a loss of self-control due to the addictive system may also interfere with consumer's real life, causing a lack of self-discipline and focus on reality.

In terms of the recommendation algorithms, this paper does not demonstrate the systematic calculation process which involves professional knowledge in mathematics. Therefore, future research can be improved by precisely illustrating the calculation steps of the algorithms, showing a clear and logical process of how exactly data are gathered and analyzed.

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