

Analysis of Network Effect Enhancement Method of Short-video Platform under the Background of MCN Mechanism Popularization - Taking Douyin as an Example

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Abstract: Recently, with the rapid development of Internet entertainment, China's Multi-Channel Network markets (MCN) has been expanding, and MCN have significant advantages in many aspects. Meanwhile, Douyin has also maintained a forward development trend since its launch. Therefore, the research topic is to explore how to enhance Network Effects of short video platform on Douyin in the context of the extensive MCN. During the research process, the necessity and scientific nature of Douyin + MCN is analyzed by SWOT analysis, and it is concluded that Douyin + MCN is a Positive Trans-Boundary Network Effect Model, which accords with the law of "Winner-takes-all". Finally, countermeasures are proposed for the future challenges of Douyin + MCN. Therefore, in order to further expand Network Effect, Douyin should make use of MCN to achieve high-quality video content, seize the dominant position, control the content direction, appropriately subsidize MCN, balance the market development, encourage the development of small and medium-sized MCN, and avoid the situation of one or several dominant MCN. Besides, it is suggested to create a better creation environment, attract more users, and ultimately achieve the purpose of maximizing Network Effects.

Keywords: Douyin, MCN, network effect, short-video platform

1. Introduction

In 2018, short video platforms provided new opportunities for mass content creation in the context of fierce Internet competition [1]. Nowadays, short video platforms representative of Douyin occupy a large proportion of the Internet market shares. Even though in the process of competition between homogenized products and enterprises on the market, Douyin has a very optimistic development prospect. Meanwhile, from 2017 to 2020, the number of MCNs increased from 1,700 to 28,000, and it is possible to increase to 30,000 or even above [2].

In the field of Network Effects of the Internet Platform, there has been some research from multiple perspectives. Peipei Zhang claimed in research that not only can MCN be a crucial portion of the Internet chain, but it also alternatives the pattern of the Internet industry and bring a new media

marketing model [3]. However, some scholars have questioned the platform +MCN model. For example, some studies suggest that the MCN model is popular in Douyin, but at the same time, there are also problems such as excessive restrictions on the platform, difficulties in making profits, and the prominent Matthew Effect in the industry [4]. Meanwhile, for the continuous optimization of Network Effects, some studies have proposed that when the Network Effects reach a certain degree and tend to saturation, the quality of MCN should be controlled. Otherwise, reverse Network Effects would be resulted [5]. In addition, the reason for the rapid and high-quality development of the Douyin platform is due to the increasingly deep cooperation with MCN, which contributes to the Positive Transboundary Network Effect. However, in the field of Douyin +MCN, there is still a lack of systematic summary and future prospects of their cooperation.

Therefore, with the aim of exploring the Positive Transboundary Network Effect model of Douyin +MCN, this research summarizes the current disadvantages and challenges of Douyin +MCN and proposes corresponding countermeasures and future development approaches. Firstly, this paper introduces the characteristics, operation modes, and service contents of Douyin and MCN, respectively. Secondly, through SWOT analysis, this paper analyzes the situation before Douyin cooperated with MCN and the inevitable trend to realize Douyin +MCN. Next, the theory of the Positive Transboundary Network Effect is used to summarize the cooperation mode of Douyin +MCN. At last, it discusses these challenges that Douyin +MCN would face in the future and puts forward corresponding countermeasures.

2. Overview of Douyin and MCN

2.1. Overview of the Douyin Platform

2.1.1. Development of Douyin

Douyin is a music creative short-video social software for all ages of social platforms. Since Douyin officially launched in September 2016, the development process of Douyin is mainly divided into the following three stages: 1) Functional development stage: Douyin is in charge of the operation mechanism of “Complete Decentralization” and features “Video + music” to initially build a community Internet platform integrating multiple functions; 2) Communication operation and user growth stage: Douyin enhances product exposure through a large amount of advertising, celebrity settlement, cooperating with commercial brands and other ways to achieve rapid growth of user base; 3) Construction stage of business system and community environment: Douyin focuses on business model construction, improves the community attributes of Douyin, and builds a large platform integrating multiple functions.

2.1.2. Features of Douyin

The reason why Douyin stands out among many short-video apps is because of its excellent platform operation and marketing features. First of all, compared to traditional long-video platforms, videos in Douyin are mostly about 15 seconds, covering life, entertainment, food, tourism, and other aspects. Secondly, Douyin will use algorithms to analyze user behaviors and interests, form effective user portraits and analyze data, and accurately show users videos they may be interested in so as to improve user retention rate and online time. Moreover, Douyin has a variety of built-in filters and sound effects to give users a better visual and auditory experience when taking videos. Furthermore, “Douyin Mall” opened up the Internet short-video platform innovation. Not only can “Douyin Mall” can serve as a way to retain customers and expand the commercial market, but also as a platform connecting consumers with merchants and brands.

2.1.3. The Targeted Population of Douyin

According to Moonfox data, one in every three Douyin users in China was below 26 years old. The video-based social networking platform, known as Douyin internationally, attracted a total of 730 million monthly active users in its home country as measured in November 2022. Meanwhile, this year, the proportion of users aged between 26 and 35 and above 36 were, respectively, 32.7% and 41% [6]. Therefore, it can be concluded that the main targeted group for Douyin is the youth, especially teenagers.

2.1.4. The Status of Douyin Brand

Douyin is an important player in China and around the world. In China, based on a database from Moonfox, experts projected that Douyin's user base in the Chinese market would very likely surpass 835 million by 2025. Over half of the internet users accessed their Douyin account via mobile device. Besides, Douyin also has a profound influence worldwide. Viewing from leading entertainment and video streaming apps worldwide in 2022 by downloads, Douyin occupied first place in the world with 672 million downloads [6].

2.1.5. Revenue from the Douyin Platform

Douyin has been among the top ten most valuable brands in the world with 65.67 billion U.S. dollars, which experienced a drama increase and had over three times the value in 2021[6]. Specifically, Douyin's main sources of revenue include advertising and virtual gifts, such as tips. Advertising is one of the most important sources of revenue for Douyin, which generates revenue by providing brands with the opportunity to place ads. In addition, users can buy virtual gifts for their favorite creators on Douyin to support and motivate them, which can also bring some revenue to Douyin.

2.2. Description of the MCN Mechanism

2.2.1. Definition of MCN Institution

Multi-Channel Network Markets (MCN) is a professional management company that manages multiple content creators. It aims to provide creators with a full range of services and support, including content production, promotional marketing, and commercial realization. Different MCNs may have different positioning and service scope, but generally, they are able to provide high-quality resources for creators, conduct management and training, and provide diversified ways of realization.

2.2.2. The Operation Mode of MCN

The operation mode of MCN mainly includes the following aspects: 1) recruitment and management of video creators; 2) Providing resource support for potential creators; 3) Commercializing the video content of the creator; 4) Analyzing and optimizing operational data. The specific operation process and overview are as follows: First, MCN seeks potential creators through online or offline channels and then manages and trains them after signing contracts to enhance their content creation ability and influence. Next, the agency will provide the creators with high-quality resource support, such as platform traffic, brand resources, advertising, and other means to gain customers to help them expand their influence and cash ability. At the same time, it provides diversified realization ways to realize its own commercial realization. Besides, through data analysis tools to monitor and analyze the performance of creators, it could find and optimize and adjust problems to improve the performance and revenue of creators.

2.2.3. The Development Status of MCN Organization

At present, the MCN industry is developing very fast, showing a rapid growth trend in the world. According to the data of iiMedia Research, in the year-on-year growth rate and forecast of China's MCN industry market size from 2016 to 2023, according to relevant statistics, the number of global MCNs has exceeded 1,000, and the number is still increasing. The growth rate of China's MCN industry market size in 2021 is 36.8%, the growth rate of China's MCN industry market size in 2022 is 28.9%, and the growth rate of China's MCN industry market size is predicted to reach 26.1% in 2023 [2].

Some MCNs are starting to dig deeper into the vertical, have more quality resources and creators, and also provide more professional and high-quality services. Many creators are getting better resources, support, professional training, and influence. And MCN provides creators with increasingly diverse ways to monetize. In the domestic Douyin platform, the MCN, with a complete operation model and a large number of artists, are mainly Wuyou Media and Bee Culture. Most of Douyin's creators are from these two institutions. In short, MCN has become an indispensable part of the digital content creation industry chain and has a broad prospect for future development.

3. Background analysis and purpose of cooperation between Douyin and MCN for realizing Network Effects

3.1. SWOT Analysis on Douyin before the introduction of MCN

In order to expand the Network Effects of Douyin to a greater extent, we use the SWOT method to evaluate the advantages and problems of Douyin and provide advice on the development of Douyin in the new operation mode of "Douyin+MCN." The SWOT method will analyze the strengths, weaknesses, opportunities, and threats of Douyin before the collaboration between Douyin and MCN based on the internal and external competitive environment of the platform.

3.1.1. Internal Strengths

A Huge and Excellent User Base-Bringing Continuous High-Quality Content. According to iiMedia Research, Douyin ranks first in the ranking of short video platforms which are most frequently used by surveyed users with a 45.2% share, and it is also the most frequently used short video product by users under 25 years old and 25-40 years old [7]. This shows that the platform has a large number of young users who are more promising and creative as the source of constant motivation in the short video creation process.

Individualized Recommendation Algorithm with a Simple and Smooth Page, Continuously Increasing the User Stickiness. Douyin's recommendation is algorithmic plays a key role in keeping users. The platform uses the collaborative filtering recommendation algorithm to accurately match the content with users and recommend content that meets their needs and preferences. In addition to the concise page of Douyin, users can watch videos by scrolling up and down after entering the app, and the simple operation increases the frequency of the audience's use [8].

3.1.2. External Opportunities

MCN Foster the Development of Douyin. With the development of the short video industry, other industries, such as MCN, have emerged. iiMedia Research shows that the growth rate of the number of MCN agencies remained stable in 2021 and will exceed 60,000 in 2025 [9]. The existence of these MCN agencies has undoubtedly given a new direction to the development strategy of the platform.

The E-commerce Industry and Live-Streaming Industry are Growing Rapidly. As people's fragmented time increases and information technology improves, the development of the e-commerce industry is pushed to a new high. And short video platforms have also boosted the development of the live-streaming e-commerce industry. iiMedia Research shows that in 2021, the total scale of China's live-streaming e-commerce industry will reach 1,201.2 billion yuan, and the scale is expected to reach 2,137.3 billion yuan by 2025 [10], which shows the rapid trend of its development.

3.1.3. Internal Weaknesses

Serious Video Homogenization and Insufficient Supply of Original Content. The problems of video homogenization and the insufficient supply of original content have always influenced Douyin terribly. In order to stimulate creators to make higher quality content, the platform often launches some video challenges to arouse creators' enthusiasm and provide some innovative ideas. Although it can encourage creators to make new and original video content to a certain extent, the problem that follows is that creators are likely to shoot videos on the same topic, which is a big hit, so the problem of video homogenization is more serious. In addition, some bloggers may plagiarize other's work to get more followers, which also worsens the problem of homogenized content and does not contribute to content diversity.

Distortion of the value of some video content. Due to the huge user base and inadequate auditing mechanism, some short videos are vulgar and of low quality, transmitting distorted values, which is not conducive to the development of the platform and affects its reputation of it. Especially for young people who have not yet formed complete values may not have the ability to distinguish right from wrong when facing a large amount of content with distorted values on the platform, and they may not be able to judge correctly whether the video content has positive meanings but just imitate it, which is extremely harmful to the growth of young people.

3.1.4. External Threats

Low User Stickiness and High Difficulty in Converting Private Traffic. Fans on the short video platform belong to the public traffic, while the private traffic is the loyal fans of the bloggers on the platform. At the beginning of the development of the Douyin e-commerce industry, some bloggers often face the problem that large amounts of fans watch the blogger's live broadcast, but a few fans place an order [1], which means the conversion degree of private traffic is not high enough, which leads to the reduction of user stickiness.

Homogeneous Competition in the Market is Highlighted. The continuous development of the short video industry has made more and more short video platforms appear in front of the public's eyes, and in many cases, bloggers, they will put their videos on various platforms, e.g., Xigua, Kuaishou, Bilibili, etc., which leads to a gradual convergence of video contents on various platforms. Therefore, how to stand out in such homogeneous competition is another problem Douyin encountered in the process of development.

3.2. Advantages of Douyin +MCN

Douyin, which is in a period of rapid development, has been cooperating with MCN with various operating characteristics since 2018, after the entry of MCN, the platform not only expanded its original advantages but also provided new ideas for solving the original problems, such as lack of originality and homogeneity of video content, thus expanding the network effect of the Douyin platform.

First, MCN can act as integrated managers of the growing number of Internet celebrities, reducing administrative costs and direct management complexity. In this aspect, MCN is similar to brokerage

companies, which can handle a series of work related to artists without the direct involvement of the Douyin platform. Secondly, MCN can undertake the task of ensuring the quality, quantity, and richness of video. As the operating subject of enterprises, MCN has KPI indicators on the number of videos and the number of views in most cases. In line with the operation strategy of the high-quality video platform provided by the Douyin platform, it can also further expand a wider and more segmented customer group and enhance the network effect. In addition, in order to further build Douyin's business model and accelerate commercial realization, Douyin uses MCN as an intermediary platform to provide a docking platform and operation services for commercial operations. Large MCNs bring their own traffic and attract a variety of outside companies to come in and sponsor them.

4. Under Douyin +MCN, the realization of the Network Effect model

4.1. Douyin +MCN is Positive Trans-boundary Network Effect

Network Effect refers to the principle that the utility obtained by users from the consumption of information goods and services (network products) increases with the augment of the number of users or network access parties [11]. Network Effects can be divided into Same-side Effects and Cross-side Effects, which are both positive and negative, respectively. Cross-side network Effects emphasize that an increase in the number of users on one side of a platform has an impact on the utility of users on the other side [12]. On the other hand, all the activities and effects occur in the industrial chain. Meanwhile, positive network effects mean that the changes of users on one side of the platform change homologously as those on the other side, while reverse Network Effects mean that the changes of users on one side of the platform change in the opposite direction. To sum up, Douyin, as a platform positioned to provide high-quality content, works with MCN to link users and consumers and achieve a Positive Cross-edge Network Effect.

4.2. The Positive Cross-edge Network Effect model of Douyin +MCN

The essence of the Network Effect is synergy value, which cannot be obtained by users themselves and is the result of interaction between diverse users. The Network Effect of Douyin +MCN is the interaction effect of the MCN terminal, Douyin, users, or manufacturers.

4.2.1. The Positive Cross-edge Network Effect of Douyin +MCN from the Institutional End to the User, Enterprise, and Merchant End is Obvious

The cooperation between Douyin and MCN is reflected in the clear regulation of rights and obligations, promoting the continuous production of high-quality content on the platform, and thus completing the Positive Network Effect between Douyin and MCN to users. For example, from the perspective of MCN's rights regulations, MCN agencies are allowed to sign the original celebrities in Douyin station, obtain a number of exclusive resource inclines, including hot topic challenges, and obtain priority in advertising orders. At the same time, MCN must complete the specified amount of video production and expand the vertical category direction according to the requirements of Douyin. Therefore, MCN provides quantitative, tremendous, and high-quality content services for the Douyin platform and its users, attracting more subscribers, merchants, and enterprises to visit or settle in Douyin and further realizing the strategic goals of community building and business model construction of the Douyin platform.

4.2.2. The Positive Cross-edge Network Effect from Users, Enterprises, and Merchants in Douyin to MCN is also obvious.

Many users flood into Douyin, increasing the demand for high-quality videos and forcing MCN to further cooperate with the Douyin platform to produce more suitable content and services. Meanwhile, the settlement of merchants and enterprises has increased the demand for operating based on the network blogger and KOL business model and also spawned more MCN and a more complete and comprehensive cooperation model of Douyin +MCN.

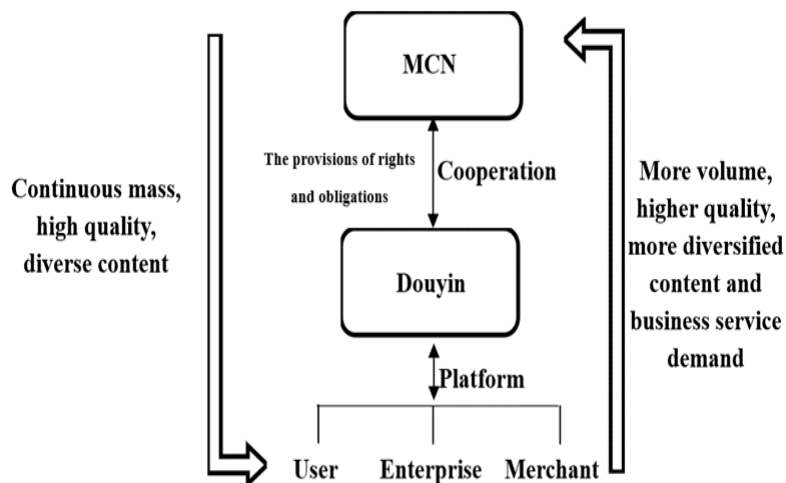


Figure 1: The Positive Cross-edge Network Effect model of Douyin +MCN.

4.3. Douyin +MCN in Line with the ‘Winner-Takes-All’ Law

The Positive Cross-edge Network Effect is apparent, and its data is growing rapidly. The law of “Winner-takes-all” means that the final winner of a market competition occupies all or most of the market share. The Positive Cross-edge Network Effect of “Winner-takes-all” on Douyin +MCN is reflected both on the content side and the user side. In terms of content supply, within one year since its establishment in 2018, Douyin has realized the accumulation of content at double speed by cultivating creators, certifying and cooperating with MCN companies, and cultivating “celebrities” within the platform. At the same time, in terms of the number of users, the massive, diversified, and high-quality content promoted the extremely rapid growth of Douyin from 0 users to 100 million users to 250 million users within two years, which quickly occupied the market crowded out the market share of Kuaishou, which originally entered the market first.

5. Analysis of the Competitive Relationship between Douyin +MCN and Future Network Effect Challenge Analysis and Countermeasures

5.1. Future Network Effects Challenge Analysis under the Competitive Cooperation Relationship of Douyin +MCN

The top MCN grows and tends to monopolize the market, which is not conducive to the expansion of the network effect. At present, many accounts on Douyin that have a large number of fans belong to the same company, and the daily traffic growth of the platform is limited, which means the daily online hours and an online number of users are generally within a certain range, this also means that the total amount of traffic is likely to flow mostly to their own creators with the operation of one or

several MCN, leading many individual creators to encounter traffic difficulties and gradually lose their passion for creation. In addition, that will hand over the control of public opinion when the traffic is monopolized in one company, which brings great potential problems for the platform [1].

Additionally, Douyin lacks effective control over MCN, which is not conducive to promoting network effects with the content supply. Initially, Douyin issued some subsidy policies to attract a large number of MCNs to the platform so that the quality of video content could be improved. This policy was effective to some certain, while for some MCNs, in order to get more profits, they just produce videos that are of low quality but meet the minimum requirements of the topic. In this case, the subsidy policy backfires.

Creators' over-reliance on MCN squeezes individual creators, which is not beneficial to expand network effects. The top MCN's absolute possession of traffic, audience groups, and manufacturers leaves less room for individual creators, resulting in weaker creative motivation, which is not helpful for more creators to enter Douyin.

5.2. The Strategies of Expanding Network Effects in the Mold “Douyin+MCN”

5.2.1. Encourage the E-Commerce Industry, Creating more Revenue

The platform should continue to invite MCN to generate high-quality videos. With the help of MCN, the quality of advertising content and live content on the platform will be improved and a more systematic and perfect business model will be formed to attract more businesses to trade on the platform so as to create more revenue for the platform, realizing the expansion of the network effect.

5.2.2. Co-Creating the Topic Discussion to Expand the Network Scale

The platform, with the cooperation of MCN, can produce high-quality video content by creating diverse topics for discussion and leading the value of videos to a certain extent. It is easier to realize value co-creation between the platform and the two-sided market with the interactive technology of the Internet, and the utility increases to expand the network scale and stimulate the platform network effect so as to promote the development of the platform. Use the algorithm to recommend personalized and customized topics to different creators to stimulate creative inspiration and appropriately distribute traffic to topics that need attention. For example, caring for left-behind children, paying attention to autistic patients, or other topics. Sublimate the theme of short video content and attract the attention of users in niche areas so that these topics can gain people's attention, which can expand the network effect.

5.2.3. Improve the Quality of Each Link and Promote the Conversion of Private Traffic

With the support of MCN, bloggers can improve the quality of each process, from writing the initial script, filming, and production in the middle stage to editing and processing in the later stage, and MCN should conduct accurate traffic attraction after the release of the video, using algorithmic recommendation technology to recommend the video to relevant users. In addition, MCN should assist bloggers in actively interacting with their fans after the release of the video, and if necessary, seek cooperation with brands for bloggers and conduct activities such as lucky draws in the comment section of the videos to improve user stickiness and promote the conversion of public traffic to private traffic.

5.2.4. Improve Audit Technology and Control Subsidies to Improve Video Quality

When introducing MCN, the platform should first control the subsidies to reduce the possibility of low-quality video content output. Secondly, in terms of auditing, the platform should increase the

technical investment and financial investment in this area and use information technology means to screen out videos with low quality or distorted values for downgrading. In addition, the platform should introduce clear and explicit rules of the censorship system, and have the videos initially audited by MCN before they are released, so as to improve the possibility of high-quality videos.

5.2.5. Individual Creators and Contracted Creators Should be Encouraged at the Same Time to Create a Better Creative Environment

The platform should issue relevant policies to control the situation of one or several MCNs dominating the market, for example, encouraging the development of small and medium-sized MCNs, playing the initiative of traffic distribution to tilt the traffic moderately, and giving subsidies and assistance in the running to make the market develop in a balanced way [13]. Thus, it can achieve the role of encouraging the development of MCN while supporting the creation of individual creators, which also provides a better creative environment for creators and enrich the video content. Moreover, it will make more users willing to use the app in the role of creators and thus expand the network effect.

6. Conclusion

Douyin provides a fertile ground for MCN to grow, and MCN provides new possibilities for Douyin. In order to expand the network effect, the platform should continue to encourage MCN to enter and have good and mutually beneficial cooperation with MCN. With the help of MCN, Douyin can strictly control the various processes of video creation, improve the quality of live streaming content, encourage the e-commerce industry to create more revenue, establish relevant topics to inspire creators and attract users to focus on niche areas, and accurately drain traffic to improve the conversion degree of private traffic so that the network effect can be expanded in all aspects. In addition, faced with the threat posed by the MCN, the platform should firmly grasp the dominant power, lead the view of the content, moderately subsidize MCN, balance the market development, and encourage the development of small and medium-sized MCN to create a better environment and attract more users to maximize the network effect.

This study also has some limitations. At present, in the academic world, there have been a large number of studies on the development of MCN, but there are fewer relevant studies from the perspective of short video platforms discussing the future planning of their own development with the help of MCN, and even fewer involving the network effect. Therefore, the article lacks literature related to the topic. In addition, due to the lack of experience of our team, the suggestions for the future development of the Douyin platform may be rather one-sided and lack careful consideration.

The development mode of “Douyin+ MCN” has been a major trend, and in the future, the research about this mode should be extended to more aspects and more in-depth research; in addition, the development mode of “Douyin + MCN” should be extended to different short video platforms, and the related issues brought by the mode of “short video platform + MCN” also have great research value and space.

References

- [1] Li, J, Z.: *The profit model of MCN operation of short video platform: a case based on “Jieyin” platform*, *Industrial Economics Review*, 50(03):188-200 (2022).
- [2] Iimedia Data. *China MCN industry development and user consumption research data*.
- [3] Zhang, P, P.: *Netflix “factory”: the development history, emergence logic, and future trends of MCN agencies*. *Future Communication*, 28(01):48-54 (2021).
- [4] Zhu, X, L.: *On the bottleneck and optimization of the development of short video MCN agencies--Jitterbug as an example*. *Audiovisual*, No.156(04):15-17 (2020).

- [5] Zhou, W, H., Qiu, Y, J., Jin, K, K., et al.: *The mechanism of the role of e-commerce platform and bilateral market value co-creation on network effect - based on Taobao case study. Soft Science*, 29(04):83-89 (2015).
- [6] Moonfox, *Estimated number of Douyin (TikTok) users in China from 2021 to 2025 (in millions), 2021*
- [7] IiMedia Consulting. *Research Report on the Competitive Situation of China's Short Video Head Market in 2020-2021.*
- [8] Lu, Y, R.: *Jieyin's short video differentiation strategy. Jiangsu Business Theory*, 456(10):20-24 (2022).
- [9] IiMedia Consulting.: *China MCN Industry Development Research Report 2022-2023.*
- [10] Iimedia Consulting.: *China Live Streaming E-Commerce Industry Operation Big Data Analysis and Trends Research Report, 2022-2023.*
- [11] Gong, L, M., Jiang, S, S.: *Frontiers of research on strategic management of platform-based business ecosystems: perspectives and objects Foreign Economics and Management*, 38(6): 38-50, 62 (2016).
- [12] McIntyre, D, P., Srinivasan, A.: *Networks, platforms, and strategy: Emerging views and next steps. Strategic Management Journal*, 38(1): 141-160 (2017).
- [13] Ren, X, C.: *The innovative development path of short video MCN agencies--an analysis based on Jitterbug. Publishing Wide Angle*, 381(03):82-84 (2021).