

# Risk Response in the New Media Age——Taking the Accurate Push of Tik Tok as the Example

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## ABSTRACT

Nowadays, society has stepped into the new media age. Big data technology and accurate push provide strong technical support for the Internet platform and significantly impact Internet users and the community. Among them, there are positive effects that meet the needs of the audience and provide favorable conditions for enterprises and governments to predict user behaviors and monitor network public opinions. There are also negative effects that affect people's lives and social stability, such as information cocoons, Internet addiction, and Internet fraud. Therefore, it is urgent to make a risk analysis of this social problem and put forward the corresponding solution. Taking Tik Tok as an example, this paper interprets the background of the birth and development of technology in the new media age by using the methods of investigation, observation, and literature research, analyzes the advantages and risks of big data, and explores the "information cocoon effect," "reverse domestication" and "superpanopticon." As a result, this paper puts forward the corresponding measures in three aspects: "goalkeeping" and "gatekeeping," "media literacy training," and "data security and control," so as to provide a reference for the society.

**Keywords:** *Tik Tok, new media, big data, accurate push, risk*

## 1. ANALYSIS OF TIMES BACKGROUND

The emergence and prosperity of big data have an imperceptible impact on people's lives in the new media age. With the rapid development of science and technology, digital media, and technology have brought convenience to people's lives, such as instant messaging, online shopping and online payment. At the same time, it strengthens the interaction between people, such as promoting the communication of virtual communities and further extending people's senses such as electronic scales, smartwatches, and so on.

In recent years, with the sustained development of China's economy and technology, the Statistical Reports on Internet Development in China released by CNNIC shows that as of December 20, 2020, the number of Internet users in China has reached 989 million, and the number of short video users has reached 873 million.[1] In addition to economic benefits, there are many hidden problems, such as privacy leakage and information fraud, which may not only threaten individuals on the Internet but also affect national security. In the "9.22" case of infringing citizens' personal information uncovered in 2017, lawbreakers embezzled more than 3 million

pieces of citizen information and committed cybercrimes on platforms such as DiDi and China UnionPay.[2] In November 2020, YTO Express appeared several "inside thieves" selling 400,000 pieces of personal information to Southeast Asia for unique benefits. In 2017, the "Eternal Blue" cyber virus attacked several Chinese websites to extort high ransoms, which infringed on national data security. Although the government issued the Cyber Security Law to control the improper behavior of new media operations that endanger the public and society, the speed of law formulation and introduction cannot keep pace with the update of the technology, and the rectification work is difficult. Thus it can be seen that the risks and crises arising from the arrival of the new media age cannot be ignored, and it is urgent to explore new coping ways.

As a leading short video social software, Tik Tok has more than 400 million daily active users as of January 5, 2021. According to the 2021 Tik Tok Data Report, it has become the most prominent short video platform in China.[3] The "algorithmic mechanism" is an essential factor for Tik Tok to win the market: by matching traffic pools to different video works, then judging whether to push them to a larger traffic pool

based on the data; classifying and evaluating videos by combining algorithms with the workforce, weighting video popularity and recommending excellent ones in a platform way; carrying out accurate push of videos according to users' viewing preferences, etc. The "accurate push" technology can effectively ensure that there is a phenomenon that users are stuck with information: the ratio of Tik Tok's average daily active users to monthly active users reached 0.45 in 2018, which means that each person may open the app 13.5 days a month on average. Failure to deal with the risk of "accurate push" will have a negative impact on the large audience and society.

Taking Tik Tok as the example, under the theoretical framework of "uses and gratifications theory," "information cocoons," "reverse domestication," "superpanopticon," and "gatekeeper." Through the use of literature analysis method and case analysis method, this paper studies and analyzes the risks and hazards in the new media age and puts forward some countermeasures.

## **2. TECHNICAL BASIS**

### ***2.1. Big Data***

Big data means a dataset whose size exceeds the ability of typical database software to collect, store, manage and analyze.[4] Massive data collection and processing in the background, "the next technical frontier to improve productivity after traditional IT," big data is favored by people because of its unique advantages, which imperceptibly affects information dissemination and social development.

Big data improves the efficiency of obtaining a large amount of information and effectively reduces costs, as well as supports disseminating information in the new media age. Massive data collection and storage have promoted the development of platforms such as Weibo and CNKI, which meet the social and educational needs of users; the government relies on big data's technology to update services and governance methods such as more advanced overall governance and intelligent engineering to do a good job in service work. However, it is mentioned in the Whirlpool and Prejudice in Big Data's Black Box that big data's foundation lies in data and models, which can be artificially intervened and set. Some of the information will be highlighted or omitted, resulting in the use of misleading information to be "packaged" by big data and spread to the public. In addition, big data can collect almost all users' personal information, considering that the background operation of big data's technology also needs technicians, which means that users' personal information is in the hands of business owners. Therefore, there will be the problem of user information leakage.

User portrait uses a large amount of data to model and analyzes real-world user information to judge user preferences and needs, a typical application of big data. It has the characteristic of "differentiation" that can clearly present the features of users and can provide efficient and targeted information according to the user's portrait technology, such as Tencent Sports is mainly for sports enthusiasts, while Mango TV is aimed at students and office workers. User portraits also have shortcomings: the adverse effects of excessive profit-seeking, such as predatory advertising, accurately identify vulnerable groups through big data analysis and peddle false or high-price promises in places where they both need and lack relevant knowledge, and use inequality to solidify social stratification.

### ***2.2. Accurate Push***

Accurate push mostly means that the new media prioritizes what people want to see according to big data's information processing. Nowadays, information collection and push can ensure that users of the information platform can browse the content and goods they are interested in, bringing much more benefits than undifferentiated push. The platform carries out accurate push, which enables users to receive a large number of homogeneous information they are interested in, satisfies the tastes of different groups, highlights the diversity and differentiation of users, and effectively promotes the personalized development of network users. The per capita time of using Tik Tok of the post-90s in each month is more than 1,000 minutes. However, it is precise because of the widespread use of society that there is a problem of "big data bias" derived from accurate push: the price seen by old customers is much higher than that of new users for the same goods or services.[CCTV reporter also found that your mobile phone booking shows that the price is higher than the cheap models in the Ctrip.

## **3. TECHNICAL ADVANTAGE AND POSITIVE EFFECT OF BIG DATA**

### ***3.1. Uses and Gratifications***

The "uses and gratifications" is a theory of audience behavior, which regards audience members as individuals with specific "needs" and their media contact activities as "using" media based on specific demand motivations so that these needs are "met." [5] Big data technology provides excellent support for information upload and storage and attracts a large number of users. People participate in network dissemination activities so that the dissemination of information gradually presents the characteristics of "fragmentation." In the process of dissemination, not only the complete information is divided into information fragments for dissemination, but also the

time when the audience obtains the information, and the behavior of receiving the information will also show the characteristics of "fragmentation."

The short video is generally no more than 5 minutes from ten seconds to one minute, which attracts the audience in the new media age with the characteristics of short time and intuitive content. At the beginning of Tik Tok, the optional length of time for video recording by the common user is 15 seconds. It needs more than 1,000 followers for 1 minute and more than 100,000 followers for more than 1 minute. Tik Tok has readjusted its video duration due to the rapid expansion of its user base, so it can now choose a video duration of 15 seconds, 1 minute or, 3 minutes, and longer videos are subject to platform review. What is more popular with the audience are videos within 15 seconds. Nearly half of the videos with more than 10 million likes in 2019 are less than 15 seconds. At present, people's pace of life is accelerating, especially in densely populated and more developed areas. The audience can only use their fragmented time to surf the Internet. The active peaks of Tik Tok users are from 12:00 to 13:00, from 18:00 to 19:00, and from 21:00 to 22:00. It can be seen that users use Tik Tok more during lunch or lunch break, after-work commuting, and private time in the evening. The content of this fragment information is short, so the audience can get much information in a short time, which meets the current needs.

In addition to the audience's fragmented reading habits are fully satisfied, the psychological satisfaction of the audience in the process of dissemination can also prove the theory of "uses and gratifications." While helping people relieve pressure and achieve the effect of entertainment, it can also provide an interactive platform for the audience. McQuail's survey of TV programs in 1969 put forward the effect of "mood transformation" on the different characteristics of all kinds of programs, which means that the audience can release the pressure and emotions in their daily life by watching the programs for entertainment. There are similarities between online short videos and TV programs, and Tik Tok has developed more services that are in line with the characteristics of the times based on big data, such as easy-to-remember video soundtracks or trendy video special effects, distinctive features can help people browse to their interests or get new information through the mobile screen. At the same time, it can also meet the psychological needs of users to interact with society, and strangers on the Tik Tok platform can like, comment, and share, realizing the connection among video makers, viewers and comment publishers, Then people's social psychology is greatly satisfied; it also allows people in need to show themselves through performing and recording their lives. The improvement of participation has dramatically promoted the transformation of the audience to the identity of users.

Tik Tok platform accurately grasps the needs of the audience in the new media age. It provides related services, enhancing the attractiveness and communication of the platform, showing a good trend of development as a whole. eMarketer predicts that the total number of active Tik Tok users in China will increase to 556 million by 2023, accounting for 60% of China Mobile's users.

### ***3.2. Behavior Anticipation and Public Opinion Monitoring***

The development of new media also plays a beneficial role for relevant enterprises, governments, and countries. The short video platform relies on big data to collect user portraits and preference information for the launching of goods or advertisements. The "interests" and "needs" of users can be judged by analyzing users' data. Based on accurate push technology, the platform can predict users' purchase intention and behavior, such as guiding users to buy goods sold under different video operating numbers through the "commodity window" of the Tik Tok platform and finally facilitates the realization of traffic. According to LastPost, Tik Tok's GMV exceeded RMB 500 billion yuan in 2020, increased more than three times that of 2019. In addition, big data also plays a great role in predicting the popular elements or style of a certain period of time, helping the platform or creator to accurately grasp the "eye attraction" time and launch goods and works in line with the current aesthetic, and even reach the level of leading the trend. For example, during the Spring Festival in 2021, Tik Tok used big data and user portraits to predict an increase in attention to Chinese tradition, followed by an increase in the accurate push of traditional Chinese handicrafts. According to the data report of the "New Year's Shopping Festival" released by Tik Tok e-commerce, the total turnover of the first Tik Tok New Year's Shopping Festival was 20.8 billion from January 4 to January 20, 2021, of which intangible cultural heritage handicrafts increased 13 times compared with "Double 11".

At the national and social levels, the public opinion monitoring under big data can clearly grasp the development of the situation, which is helpful to the actual world and the network society. For example, the Tik Tok platform monitors and jointly cracked down on a gang of "black and grey products" that use "group control software" to manipulate hundreds of mobile phones for automatic follow, likes, comments, automatic private messages and reply to user information, and ordered it to stop operation. A joint crackdown on users who infringe on children and upload pornographic videos has been launched with the Suining Public Security Bureau in Sichuan Province. Big data technology can help the platform and the

government predict developments, comprehensively monitor the people and things involved, and improve work efficiency for major events that have aroused widespread concern or violations of law and public order and customs. To a certain extent, avoid the deterioration of the situation and effectively maintain the stability of the society and the state.

#### **4. RISK AND HAZARD OF BIG DATA**

##### ***4.1. "Information Cocoons" and "Information Partiality"***

Sunstein in the United States put forward the concept of "information cocoons" in his book *Information Utopia-How People Generate knowledge*, which means that people tend to choose only the things they pay attention to and enjoy. In the context of new media, the information cocoon room effect is enhanced by big data technology, especially when people obtain network information through computers, mobile phones, and other mobile terminals. A large number of homogenized information is accurately delivered to different audience groups. After people search or click on a specific type of content of interest, the system will push more similar information to the user. Constantly browsing a large number of homogeneous information means that other information is less likely to be received, and there will be a gradual barrier between people and the outside world, which is like a "cocoon." The "information partiality" focuses more on the inert audience, emphasizing the active acquisition of partiality information by the audience, and the people of "partiality" are gradually less interested in the content outside the "barrier," resulting in a great reduction in the diversity of the information obtained. However, whether it is relative to passive or active, it will bring particular harm to the audience because the operators and managers behind big data are the business owners and staff who manipulate it. In the Internet environment, the competition between platforms and merchants never stops in order to attract more consumers and continue to cater to the tastes of users. For example, Toutiao or its Tik Tok uses big data and push technology to post a large number of videos for entertainment, such as jokes, songs, and dances, while the "barrier" blocks much information about knowledge like education, society, and current events. Even if there is no search when open the software again, there will be a large number of similar videos that have been viewed. Users can quickly get a large number of videos they are interested in, which creates inertia and harms life.

The reason is that in addition to merchants and platforms trying to improve user stickiness, users' own personalized needs also contribute to this phenomenon. As Negropte believes that personalized information such as "My Daily" is an enhancement of the

"information cocoons." In addition, it is also the practice of many platforms to satisfy people's curiosity with the "screaming effect" and to cling to the audience by means of pornography and parodies. The impact on people and society is obviously negative since the closed circle of information is likely to lead to the solidification of thinking and will inevitably lead to the evil influence of impetuous people and entertainment to death.

##### ***4.2. "Reverse Domestication" of Intellectual Media***

Humans and technology are a group of interrelated objects, and the interaction between them produces the result of "mutual construction" and "mutual training." [6] technical updates have given people more convenience, but now "reverse domestication" already exists, and these intelligent products that should be tamed and serve human beings are domesticating human beings quietly. Artificial intelligence, which is closely related to life, such as mobile phones, computers, electronic scales, millet bracelets, and so on, has been highly in line with the daily needs of human beings and has become an indispensable part of most people's lives. For people who use electronic scaled and millet bracelets to pay attention to their health or to lose weight, once they leave the assistance of such smart products, they will not be able to know the data indicators of their bodies, and their lives will be disturbed to vary degrees. The reason is that people rely on intelligence and cannot get rid of "reverse domestication." Similarly, big data technology, as strong support for information transmission, makes more and more people benefit from the convenience of intelligent media and become loyal users. According to the Insight report of the Post-90s in 2020 released by QuestMobile, as Internet aborigines, the post-90s spend more than 10,000 minutes on the Internet every month, and the monthly average daily use time is also close to 7.5 hours.

Tik Tok's push technology with algorithm as its core deprives people of time to a certain extent. When "browsing Tik Tok" has become a trend, some users can not help themselves be addicted to it after using Tik Tok. They even stay up late to browse short videos, which seriously consume the mind and spirit and affect their physical health. Some middle-aged and older people also have giddiness, dizziness, and insomnia caused by browsing Tik Tok for a long time, and the loss outweighs the gain. Some scholars believe that it is the interdependent and interactive relationship between human beings and media technology that produces "reverse domestication" in the process of interaction between human beings and media technology. [7]

In addition, reverse domestication is also reflected in solidifying people's entertainment concept, which is

confined to browsing video for entertainment. For example, reading books on a bus or a metro makes one person feel very different because other people have mobile phones in their hands. Even most people who look at mobile phones are browsing Tik Tok, so not playing with mobile phones has become an alternative. It can be seen that intelligent media has made some people heavily dependent, and "reverse domestication" has reached a degree that cannot be ignored.

#### **4.3. "Super Panopticon"**

Mark Post's theory of the "superpanopticon" is comprehensive surveillance of people made up of computer databases, which does not require people to intrude on people in buildings. The database is running continuously, secretly collecting information about users.[8]Electronic surveillance cameras are a unique embodiment of the superpanopticon. The government installs electronic surveillance in public places for the sake of law and order, and some people will buy their own monitoring and install it in front of their homes or at home, hoping to monitor the surrounding environment. Surveillance and anti-surveillance are contradictory. People want to know more about the environment and other people's information and do not want their information to be known. For example, with the progress of technology, the mobile phone accessories industry has produced peep-proof protection films so that the data displayed on the screen can only be read by users, and anyone watching on both sides can only see a dark picture.

However, as most of the Internet adopts the user's real name system, the audience cannot guarantee that they can be a transparent person in the network society, and the data monitoring of the platform will directly obtain the personal information and privacy of each user. Therefore, once there is a dereliction of duty or even worse behavior of the responsible personnel, users and their information will bear the brunt. Tik Tok continues to strengthen its algorithm to analyze users' "interests" and "thoughts" and obtain a large amount of user information. On July 30, 2020, the Beijing Internet Court ruled that the Beijing Microseeding Horizon Technology Co., Ltd., to which Tik Tok belongs, deals with its personal information without consent at the first instance, which constitutes an infringement on the rights and interests of users Ling XX's personal information. Once the platform is exposed to the scandal of user privacy leakage, it will lead to a crisis of trust among the audience, which will seriously lead to confusion of public opinion.

## **5. CONCLUSION AND SUGGESTIONS**

### **5.1. "Goalkeeping" and "Gatekeeping"**

The concept of "gatekeeper" was put forward for the first time in the Channel of Group Life. Its author Kurt Lewin believes that gatekeeper exists in the channel of information flow. They put the information that meets the group norms or the value standards of the gatekeepers into the communication channel. Big data supports the uploading and downloading vast amounts of information on the Internet, which is a mixture of true and false information. Freedom of speech and uneven content prevail in the self-media. Therefore, the platform and enterprises should try their best to improve the number of homogeneous video push and the overall video quality.

Appropriately reduce the intensity of accurate push, do not use big data technology to fritter away users by making use of different "weaknesses," or "points of interest" shown by the audience in order to achieve economic purposes; strict screening should also be carried out to block or remove videos that do not meet the standard. The push standard should take the social and public interest as the first consideration[9], reduce eye-catching entertainment information, and increase the push of high-quality knowledge, education, or current affairs news in line with social value, and increase the types of video push, to maintain "diversity" development and change the trend of extreme "personalization."

To mobilize enterprises to assume social responsibility is on the one hand, and the "gatekeeping" work is even more inseparable from the strength of the country. Tik Tok launched the anti-addiction system in 2018 to take social responsibility into account. However, there are still users who can't help themselves and unscrupulous video-makers to disturb social order. In 2021, it was reported by the Office against "Pornographic and Illegal Publications" that its platform had spread pornographic and vulgar information. Xinhua News Agency commented that "the larger the platform and the larger the enterprise, the more responsibilities and obligations they have to bear" and "only by keeping the bottom line can we achieve sustainable development."Therefore, the country and enterprises should work together to play the role of "gatekeeper," constantly improve the standards of the platform in response to social problems and consider more for the public to promote sustainable development.

### **5.2. Media Education Guidance**

Netizens' media literacy, that is, how to obtain, analyze, evaluate and transmit various forms of information, and improvement of information judgment and understanding, will become a powerful boost to

harmonious development. The previous paragraph mentioned that there are many Internet users, and their influence on public opinion is getting stronger and stronger. The aesthetic ability, self-control ability, and social responsibility of this group are actually the most important. People need to know more about their network environment and correctly interpret the technologies such as big data and algorithms. We should also improve the judgment of vulgar novelty hunting information and the initiative of rejection, and strengthen the awareness of privacy protection.

In addition to netizens' self-demands, the media should bear the responsibility of actively guiding the audience, calling for standardizing the education of the use of media, increasing the exposure of improper behavior, and letting the audience understand the current situation and existing problems. Such as the popularization of information cocoons and the promotion of anti-addiction, reducing the harm caused by blocking and solidification, and promoting the healthy development of the real society and the network society. The guidance and education of the audience group, especially the young people in school, is crucial, and the school and family are also an important part. It is suggested that schools increase the education on the popularization and information security of current information technology to enrich the spiritual world of teenagers.

### **5.3. Support and Control of Data Security**

Data security is an important area where risks occur frequently. Although platforms and enterprises constantly update firewalls and strengthen the security protection of databases, the problem of leakage of users' personal information still occurs from time to time. The reason is that the safe operation technology of the data system cannot keep pace with the times, and it also lies in the malicious theft and personal gain within the platform. In view of this problem, enterprises should be encouraged to play the function of "positive externalities" [10], which means that the economic activities of one financial entity lead to additional economic benefits for other economic entities. At the same time, the beneficiaries do not have to pay the economical price. The government should provide policy and technical support to enterprises, reduce the economic and technical pressure of enterprises, effectively reduce the need for enterprises to resell user information, and prevent external infringement.

The government should also give full play to the coercive power to keep pace with the times and improve the relevant laws and regulations. At present, there are only two laws related to the leakage of personal information in China: the Criminal Law of the People's Republic of China contains the crime of infringing upon citizens' personal information and refusing to perform

the obligations of information network security management. There is also a Cyber Security Law of the People's Republic of China.[11] In fact, there is still room for improvement in this aspect in China, and the basis for governance and punishment is a "legal basis." The use of the Internet, big data technology infringe upon citizens' information security in various ways and constantly improve the relevant laws to keep up with the pace of the times to provide the public with a sense of security in society.

The speed of development and change of the network environment is changing quickly. The new media environment needs to make joint efforts in response to the problems mentioned above in different aspects, constantly carry out the investigation, reflection, and improvement, give full play to its initiative to actively analyze and formulate reasonable countermeasures, and work together to create a more harmonious and progressive new media environment.

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