Research on the Impact of Big Data on News Communication in Mobile Internet Terminal

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Abstract—**With the rapid development of big data technology, new forms and connotations of news communication have emerged. The new form of news communication based on big data technology shows great communication advantages and greatly meets the living needs of modern people. Big data technology realized data depth acquisition and utilization in different fields, improved the social value of data information, and promoted the rapid development of news communication. This paper combines the characteristics of big data technology, analyzes the positive impact of news communication and the need to pay attention, and proposes corresponding improvement recommendations to provide reference for the benign development of news communication in large data.**

Keywords—Big Data, News Communication

I. INTRODUCTION

In recent years, with the rapid development of internet technology and information technology, the large influx of data into all aspects of society[1]. Big data technologies with increasingly powerful cloud computing, to the news media industry has brought a huge change. Many new media communication forms, such as MicroBlog, WeChat and TouTiao, are established based on big data technology. Big data technology injects new vitality into the dissemination of news information and has a significant impact on the dissemination speed, source and presentation of news information. The use of big data technology news and information dissemination as the carrier has become an irresistible trend. Big data had a positive impact on the development of news media, while still brought some problems, authenticity and accuracy of the news media being increasingly the more attention. In order to promote the sound development of journalism and communication at big data technologies, we need to explore big data technology to disseminate specific impact on all aspects of news, analysis of the reasons behind the new phenomena generated. Of course, how to make use of the technical advantages of big data and combine the characteristics of the new media era to put forward specific measures to develop strengths and avoid weaknesses, so as to better serve news communication is also a hot issue at present[2].

II. POSITIVE IMPACT ANALYSIS OF BIG DATA ON THE FIELD OF NEWS COMMUNICATION

A. Improve the Timeliness of News Communication

In traditional media era, news communication often needs to interview the interviewer by 1-2 reporters according to the planned topic, then organize the editor, write a press release, and the release of the news, this needs to experience a complicated fee the process. In recent years, with the development of information technology, the role of paper medium in news communication gradually decreases. As shown in figure 1, it shows the change of newspaper printing in China in the past decade. As can be seen from the figure, 2020 national newspaper print reduction ratios reached 64% compared to 2011.
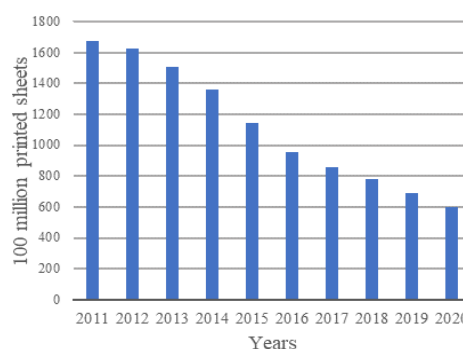

Fig. 1. China's newspaper printing total printing changes in 2011-2020

Traditional media forms such as newspapers, radio and television are single and lack of convenience. With the coming of the new media era, Tiktok and Kwai Chi are the main force in the development of the video media, which has attracted a lot of attention resources. With TouTiao, WeChat official account and micro-blog as the representative, the trend of new media development is still strong, and the absorption of the original readers is still accelerating. As shown in figure 2, the number of active users in China WeChat and MicroBlog two emerging media platforms have come, which can be seen from the figure that the number of users of two emerging media platforms grow rapidly.
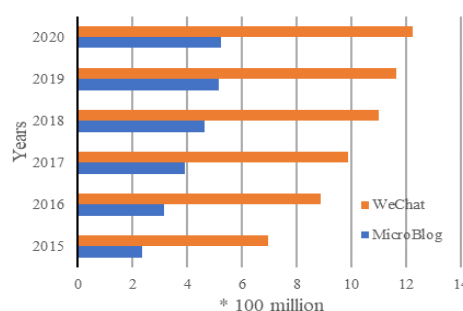

Fig. 2. WeChat and MicroBlog active users in recent years

These emerging media platforms have improved the

communication speed of news information because of the increase in data technology, so that the timeliness of news spreads is also a new level. In contrast the 2008 Wenchuan Earthquake and 2017 Jiuzhaigou Earthquake News Report, 32 minutes after the Wenchuan earthquake occurred, Xinhuanet released the earliest earthquake report through the network media. This news report is issued by the news staff rushed to the scene. The news report of Jiuzhaigou earthquake is 18 minutes after the earthquake. Relying on large data technology to complete the robot writing, and this news report is faster, accurate and comprehensive. This news report based on massive data is closer to the real goal, the cost is relatively low, and the new media can do the first time to push news information, do real-time update to the news event.

B. Big Data Changed News Audience Identity

During the traditional news communication process, the news practitioners and the audience are stable one-way relationships, and the news communication organization has information about the voice and authority[3]. The news audience is only the recipient of the news information. The news audience is difficult to communicate their views to the media on the news event in time, which is more similar to a one-way information dissemination. News practitioners also cannot get a view of the audience on the news event in time.

In the era of big data, through the internet and mobile terminals, traditional audience groups are currently transforming two identities of the communicator and participants in the news event. On the new media platform, the public can view news reports and news comments published by others. The public can forward and share news reports, and can express their opinions in the comment area. The application of big data technology has made more and more people to pay attention to the enthusiastic review of the comment area, and the high quality comments are also very important for new media platform's news reports. For new media platforms, it is possible to receive the public feedback from news events in real time, and use large data technology to integrate and analyze, thereby better reporting on news events. It can highly improve the efficiency of news communication. This is also an embodiment of the public as a news event participant.

C. News Communication Form is Diverse and Visualized

Traditional news spreads are often in the form of text plus pictures, sometimes adding data to illustrate. The purpose of the vast majority is to get readers' recognition and to enhance the persuasion of the article. In the big data age, massive data information gives news reports more performance opportunities. The form of news spreads is getting more diverse, and more and more trends present in data charts, data pictures, data video, comics, games, etc. As shown in figure 3, several common news spreads forms in recent years.
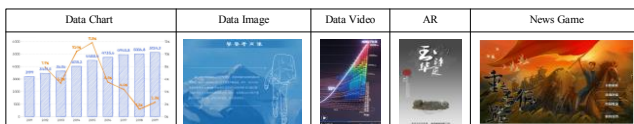

Fig. 3. Several common news spreads in big data era

As can be seen from figure 3, compared to the traditional news spread of the text,the news propagation form of the big

data era is more diverse, and it is more clearly understood that these exhibitions are more clear, fun, visibility, and more innovative. Big data realized visual news propagation It is also visually brings to the user intuitive impact. From the perspective of news audience, the content of news spread is more comprehensive and clear. From the perspective of news transmitters, to combine charts and complex information contributes to complex content simplification. This enhances the experience of the audience's experience in the news communication and improves scientific nature of news reports, making reading no longer boring.

D. Realization of News Communication for Accurate Push

In recent years, due to the production of massive data, many news media platforms rely on large data algorithms to achieve detailed categories of data news. This paper organizes the type of news module of several new media platforms in China, as shown in table I.

TABEL I NEWS PLATFORM COLUMN CLASSIFICATION IN BIG DATA ERA

News platform	Module category
TouTiao	Subscription, Recommend, Local, Hot spot, Video, Live, Novel
People's Daily	Recommend, Hot spot, Video, Local, Financial, Society, Culture
MicroBlog	Subscription, Recommend, Local, Hot spot, Video, Financial

As can be seen from table I, compared to traditional news communication, new media platform based on big data technology is more comprehensive for the information content of news content. Taking the People's Daily, it includes the recommended, hotspot, local, video and other sectors. While providing information services, the government platform, the public service platform, etc. are gradually built. While data and users are gradually expanded, through the depth calculation of big data, all-round, large-scale, multi-level users browse data are analyzed. Excavating the part of the user's possible concern in the news data, it realizes the accurate personalized news push to the user, which also avoids the information omissions of the user to make the user vain. As in table I, now the "recommended" module and "hot list" module that the new media platform is generally existing in the new media platform, to determine the preference of users on different news themes according to the big data algorithm, and realize the humanized push of the group or individual. It also improves the core competitiveness of the news communication platform.

III. BIG DATA ON NEGATIVE IMPACT ANALYSIS IN THE FIELD OF NEWS COMMUNICATION

The big data technology has developed rapidly, bringing huge impact and change to the news communication industry, but also brings some problems. some issues are inherent in traditional news communication, but more amplification in the big data era. Thanks to the technical support of the big data, everyone can spread the news with the new media platform through the computer and mobile phone side, which brings many rumors and false news. Many news is a one-sided, and the quality of the work is uneven. News information tends to appear in situations that news title are extremely inconsistent with the actual content, and cannot guarantee the authenticity of the work. Big data technology provides information on massive data for news

communicators, and constantly obtains information such as network public personal preferences[4]. This provides great space for the discharge of personal privacy, and has also breed a lot of copy and plagiarism.

A. The Authenticity and Accuracy of News Information are Questioned

In the era of big data, the generation and communication of news information is earlier, faster, and more convenient. the public has become the largest communication group in news information. The public news creation, forwarding, and comment is greatly freely freedom with large data technology based social platform. This also leads to a great impact on the authenticity and accuracy of news information. The Journalist Journal has recently released China's 2020 Top Ten Subscription News reports. This paper makes further statistics on the sources of false news in the report, and the results are shown in figure 4
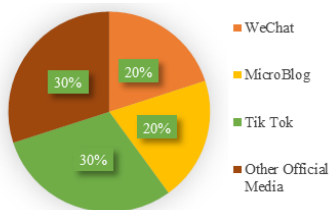

Fig. 4. China top ten seeds news in 2020 years

From figure 4, we can find that in 10 fake news, 7 fake news came from three new media platforms, WeChat, MicroBlog and TikTok, and 3 fake news came from other official media. Under the massive forwarding of social platforms, several of these fake news information once became the news hot spots on the network platform, resulting in many people's deep belief in its authenticity. In fact, if we carefully consider the internal logic of these fake news, we can find that the false element is very high. However, due to the lack of strict review mechanism of the new media platform, or due to user stickiness, the upload standard of false information is reduced. On the other hand, the news "hot search" section based on big data technology has also promoted the further fermentation of false news, and many news users believe in this kind of data news list.

At the same time, the number of reversal news has increased in recent years. Some information disseminators and publishers often release news information on the network platform through hearsay, resulting in untrue news and reversal. The frequent conversion of reverse news and the difference between before and after reports have challenged the social morality and trust system, and have a negative impact on the news parties and some groups, and even further lead to network violence. For example, in recent years, the "Henan Wang Fengya incident" and the "drowning children rescued by college students" have had a great negative impact. In addition, there may be false elements in the advertising and marketing promotion of news information released on many we media platforms.

B. The Quality of News has Seriously Declined, and the Depth and Breadth are Not Enough

Because the traditional news media has a strict news censorship system, there will be no big problem in news quality. With the rapid development of big data, the amount of news data is too large, many news lacks necessary review and content sorting, and the news quality is seriously declining. In addition to the lack of authenticity and accuracy of some news reports mentioned above, there are a lot of vicious and vulgar news flowing out continuously to win the audience's attention and traffic with exaggerated headlines and content with low values. In addition, many self media practitioners hype the concept of "traffic is king" and use some gorgeous words and popular truths to attract readers' attention. They often lack independent opinions on the problem itself, resulting in the lack of sufficient depth and breadth of news information. On the other hand, web crawlers and other technologies under big data technology will also be affected by human factors. Taking the "hot search" section of microblog platform as an example, in recent years, many companies have hired internet sailors to improve the popularity of news information by controlling the number of views, so as to realize its commercial value. Most of the news quality is shoddy. It has greatly destroyed the traditional news values.

C. Copy and Plagiarism of News Information Often Occur

Big data not only brings massive data to news communication, but also provides convenience for data acquisition. In the absence of professional ethics, many authors of we media copy and paste at will to form a press release. Due to the relaxation of the platform review mechanism, these news reports and comments are widely disseminated, making it difficult for the audience to distinguish between originality and plagiarism, which constitutes a violation of the copyright of news creators. On the other hand, as the new media platform is the collection place of data, for commercial interests, many platforms use web crawler technology to obtain news information and user comment information from other platforms, which constitutes the illusion of high news popularity of this platform. For journalists, the era of big data has reduced their measurement standard of plagiarism. Even if plagiarism exists, they still think they are just data porters. Compared with traditional news reports based on newspapers, the incidence of copy and plagiarism in the era of big data has increased, and the form is not limited to words, which can be found only with the help of strict censorship mechanism.

D. User's News Information Contact Surface is Gradually Single

Big data technology has brought a new communication mode for news information communication, namely accurate push communication. The accurate push of news information not only automatically seeks massive information for the audience, but also has an adverse impact on the audience's life. Accurate push analyzes users' browsing records and behavior data, and pushes customized news information through information integration. Only a few news information viewed by users can push a large number of news information of the same type, which can not meet the needs of users and even have a negative impact. Accurate push meets the user's preferences to a certain extent. For a single user, the news information contacted is continuously in the state of "single person and single side", which reduces the contact opportunities for other types of news information. In the long run, it will lead to users falling into the information cocoon, narrow their vision and further affect their world outlook.

E. Public Privacy Leaks are More Serious

Big data technology brings accurate push and real-time information feedback to news communication. The technical support lies in the collection of massive information. In the process of news information release, a large amount of personal information of the subjects of news events was exposed. Especially during the epidemic prevention and control period, some regions over disclosed the physical status and whereabouts of confirmed and suspected cases, resulting in the rapid fermentation of cyber violence such as human flesh search and verbal abuse, which caused great mental harm to the parties. On the other hand, driven by economic interests, news communication platforms often obtain unauthorized user data through the background, mine it, and sell it again. This kind of behavior will bring a lot of advertising and marketing promotion to users, or lead to telecom fraud, intimidation and extortion, and bring irreparable personal injury to privacy subjects.

IV. OPTIMIZATION STRATEGY FOR SOUND DEVELOPMENT OF NEWS COMMUNICATION IN THE ERA OF BIG DATA

A. Strengthen the Establishment of Authoritative Database and Realize Data Sharing

In the era of big data, although everyone is a data contributor, quality big data sources are often in the hands of the government and large companies. This limits the choice of news information data sources, because for many large companies, all kinds of data generated and collected in the process of operation are not published. The internal circulation of data sources easily leads to the formation of information barriers among companies, resulting in an increase in the number of statistics of information and differences in statistical samples. On the one hand, this will increase the probability of information disclosure. On the other hand, the differences in data collection and analysis methods are easy to cause public doubts about the authenticity of information. Therefore, the establishment of an authoritative database to realize the interconnection between big data provides a guarantee for the authenticity of data news and improves the timeliness of news release.

B. Establish a Strict Technical and Manual Review Mechanism

As the main media of news communication in the era of big data, new media platform should undertake corresponding social responsibilities and strengthen the audit of news information. From the technical level, new media platform should improve the identification ability of news data, increase the filtering ability of bad news content, and implement the real name identity information of news publishers. For the current news information released by authors of we media, improve the review standards and content recognition ability, and prohibit the release and dissemination of information with low quality and values.

For the contents that cannot be identified and judged by machine technology and algorithm, a special person shall be assigned to conduct secondary audit and inspection, and a technology manual dual content control system shall be established. For different types of news information, the corresponding professional personnel can be used for evaluation and audit, and the personnel of relevant universities and enterprises can be employed for compliance,

so as to increase the authority of audit and ensure the quality of news. For some false news information, columns such as "accurate rumor refutation" and "authoritative release" are specially set up to list the false news information separately and push it to the audience who has not read the news, so as to reduce the spread range of rumors. Taking the report of the earthquake in Jiuzhaigou in 2017 as an example, more than 20 media such as Sichuan Daily published 71 rumor refutation reports, which directly refuted the rumor. The authority of the media and the high transparency of information reduced the growth space of rumor.

In addition, in view of the phenomenon of copy and plagiarism of news information, special algorithm recognition technology is used to compare and verify the news content, and a special complaint and copyright maintenance channel is established. For example, in document [5], 33244 documents are detected by fingerprint algorithm combined with hash technology. The detection function is constructed by using Jaccard similarity coefficient. The definition of similarity coefficient is:

$$sim(a_j, a_k) = \frac{\left| hashSet_{a_j} \bigcap hashSet_{a_k} \right|}{\left| hashSet_{a_j} \bigcup hashSet_{a_k} \right|} \tag{1}$$

The final detection accuracy reached 97%, which shows that it is feasible to use advanced algorithms to detect plagiarism and plagiarism.

C. Sight for News Information to Spread Diversification, Depth

The accurate push of news information under big data has brought problems such as "information cocoon room". New media platforms should avoid over catering to the audience and pushing single news information to provide more comprehensive and diversified information. For the same type of news reports, provide news comment information with different views to avoid the fixation of audience thinking. At the same time, due to the convenience of new media platform creation, many news information only pay attention to the title, the content is biased towards entertainment, and there is a lack of in-depth interpretation of the causes of news events. For the new media platform, it is necessary to strengthen the push of in-depth news information, especially some hot issues. Columns can be set up to interpret news information.

D. Improve Relevant Legal System

The virtuality and anonymity of the internet lead to the situation of "traffic is the king" in news communication, and the phenomenon of false news and rumor has been banned repeatedly. On the one hand, it is because the current legal system is incomplete and the punishment mechanism is too light, resulting in the lack of awe of news and information publishers. On the other hand, it is also because the legal publicity and implementation are not timely, which leads many people to believe that their actions do not violate the law, which can be verified by the privacy leakage in the epidemic prevention and control. Accelerating the improvement of laws and regulations and opening online and offline real-time reporting channels are of great significance for the sound development of news communication under big

data.

E. Cultivate and Absorb Composite Talents

At this stage, the news communication industry is generally developing well, but many new media practitioners are forced to transform from traditional media platforms. New media platforms urgently need compound talents majoring in big data and news communication to promote the sound development of news communication in the era of big data. For colleges and universities, we should strengthen the cultivation of data awareness of students majoring in journalism and communication. Big data is not a partial sampling survey and relatively simple quantitative analysis. We need to strengthen the shaping of data scale, data mining and presentation ability. In addition, we should consolidate and learn the traditional news values, maintain the rigor of news, and cultivate the professional quality and professional ability of students majoring in news communication.

V. CONCLUSION

The development of big data has brought new vitality to the news communication industry. This paper analyzes the new characteristics of news communication under big data in detail, and gives the problems brought by big data to the news communication industry. Only by making rational use of the technical advantages of big data can we promote the better development of the news and communication industry. In view of the complex problems of the news communication industry under the current big data, we need to work together from many aspects and parties to solve them.

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