

## Research Article

# Platform Logic: Understanding the Influence of AI on Information Dissemination Mechanisms of Chinese New Media Platforms

Xifeng Chen and Han Wu 

Nanning Normal University, Nanning 530001, China

Correspondence should be addressed to Han Wu; 060033@nnnu.edu.cn

Received 16 February 2022; Accepted 21 June 2022; Published 31 August 2022

Academic Editor: Wen-Tsao Pan

Copyright © 2022 Xifeng Chen and Han Wu. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The development of technologies in the field of artificial intelligence is redefining the modes of information dissemination. However, it is hard to understand its influence from the perspective of the platform alone. Based on “platform logic” defined by José van Dijck, this article analyzes information dissemination from perspectives of underlayer platform, mid-layer monitoring, and upper-layer application and explores the influence of artificial intelligence and the changes in the patterns of information dissemination of Chinese new media platforms. In this paper, CiteSpace software is used to analyze the literature on artificial intelligence information dissemination on CNKI and the development trend of artificial intelligence information dissemination is summarized and discussed.

## 1. Introduction

Artificial intelligence (AI) is an important subdiscipline of computer science. It was first defined during Dartmouth Conference in 1956 as a technology that can research, develop, and create a “brain of machine” that is akin to that of humans and enables machines to think and learn like humans. (1) In recent years, tech giants represented by Google have turned their attention to the field of AI, trying to improve the intelligence of their platforms and devices through machine learning [1, 2]. They have successively introduced algorithms such as Dropout and RankBrain to strengthen their advantages in content. According to the research trends of tech giants such as Google, Apple, and Amazon, we can easily understand how AI technology is adopted in the world today. However, while the development of the Chinese Internet, an “independently-formed system” is relatively independent, the application and development of AI technology in China is a part of the world’s information dissemination technology that cannot be ignored [3–5]. Therefore, this paper attempts to analyze the information dissemination mechanism of new media

platforms in China, and then discuss the influence of AI technology. Meanwhile, through the quantitative analysis of Chinese literature, this paper tries to trace the trend of the application and development of AI technology in information dissemination in China [6, 7].

## 2. The Influence of AI on Information Dissemination Patterns of New Media Platforms in China

In terms of analytical frameworks, José’s “platform logic” seems to be the best solution as we found it hard not to study the impact of technology in the context of platforms. But it is worth noting that José pays more attention to the “connectivity” and “connectedness” that is an investigation logic that combines actor-network theory and political economy theory brought by platforms in the process of information dissemination. (2) This paper disintegrates the investigation logic of José, focuses on the analysis of “platform”, and explores how AI technology affects the underlayer, middle and upper layers of Chinese new media platforms [8–10].

*2.1. Under Layer.* The often-emphasized capabilities of the underlayer of Chinese new media mainly include four categories: security protection capability, cloud acceleration capability, machine learning capability, and model correction capability. Among them, machine learning and model correction capabilities serve the middle and upper-layers application of AI technology. With the deepening of theoretical and technical research in the field of machine learning and data mining, the current underlying technologies of the software system have yielded excellent application results in Internet content processing and other large-scale and complex applications such as data model, category scale, and performance bottleneck. “PaddlePaddle” is a framework launched by Baidu Inc. Focusing on news production technology, the framework has an excellent performance in natural language processing, image recognition, intelligent information recommendation, and other aspects. Chinese media have begun to utilize this framework to build technological underlayer of platforms. At the same time, with model correction capability, platforms can analyze and learn the feedback data, excavate the deep-seated value elements in the data, convert them into a part of system operation model and apply them in the later system-assisted production process. It can be seen that AI technology has been integrated into the underlying design of Chinese new media platforms, which has greatly strengthened their information transmission capabilities.

*2.2. Middle Layer.* The middle layer of a platform usually refers to the system adopted by content producers and platform managers. Generally speaking, the middle ground of the Chinese media mainly includes four parts: content pool, intelligent production, intelligent release, and communication analysis. Content pool is mainly for news production. It is an integral part of data management middle ground that can sort the data by weight, classify the data and display data structure and correlation by utilizing advanced content classification and aggregation algorithms based on real-time news and clues all over the web captured with big data technology, so as to provide journalists with sufficient pre-information in producing news. Intelligent production mainly improves the links of “compilation” and “review”. With the integration and utilization of technologies such as AI, big data capturing, and content pool linkage, content producers are enabled to focus on improving the depth of content and the novelty of perspective, and hand over the basic work such as article polishing and review to the platform algorithm. Intelligent release is mainly an AI service tailored to the content requirements of different platforms in China. By learning the differences in contents and forms of different platforms with AI technology, a new type of content distribution can be realized in a form of “different ways of presentation of the same content and one-click release on different platforms,” thus simplifying the distribution process of creative content. Finally, propagation analysis. As the information channel has entered the digital era, the evaluation of communication effect is no longer carried out through telephone interview, questionnaire

survey, opinion climate perception, and other methods, and data analyst has gradually become an indispensable position in the media industry. However, intelligent communication analysis can be completed “without data analyst”. This means that analysis on big data and text can be completed with AI technology, and that AI can do the work of data analyst to a large extent and provide more convenient and effective services in the analyzing communication effect for media practitioners (Table 1).

*2.3. Upper Layer.* AI’s role on the audience side mainly embodies in the forms of final presentation of information and experience of audience, mainly improving audience’s perception of the content being disseminated. AI technology can help tackle the problems such as information barrier and asymmetry in the process of information dissemination. The major role of AI in this respect focuses on improving users’ experience. The fire at Notre Dame Cathedral in Paris on April 15, 2019, helped promote the application of AI technology in protecting and inheriting cultural heritage. Today, an increasing number of tourists can travel around the world via live streaming or visit scenic spots via smart devices. Xinhua News Agency developed a 2D AI Virtual Anchor in 2018 along with Sogou, Inc. and launched its 3D version in the following years. In 2021, Xinhua News Agency introduced a smart studio that allowed the free switching of multiple scenes during the National Two Sessions. AI anchors can efficiently complete information collection and output with relatively small errors and improve audience experience. With the development of science and technology, people are paying more attention to the visualization of news. Transforming information dissemination media from the screen into a virtual scene allows the audience to experience on-site atmosphere and truly understand and feel the situations of news and brings a greater sense of immersion to users (Figure 1).

### **3. Explore the Development Trend of Information Transmission mode on new Media Platforms in China**

In this study, the cooccurrence, correlation, and time series of the research objects were analyzed by means of scientific knowledge Atlas. To analyze a large number of literature, it is necessary to find the correlation between literature, and then find the continuation relationship between different articles. This relationship is often reflected in the cooccurrence and chronological order of keywords. CiteSpace has a variety of data analysis methods such as keyword cooccurrence and time zone cooccurrence, which can show the relationship between documents in a visual way. Therefore, this study will use the word frequency statistics, keyword cooccurrence analysis, and time zone view functions of CiteSpace.5.8.R3 to further analyze the collected literature.

In this study, literature related to the research on the information transmission mode of China’s new media platforms from 2008 to 2022 were selected from the database of CNKI. The advanced search function of CNKI was used,

TABLE 1: Application of middle-level artificial intelligence technology in three self-built platforms of Chinese media.

Application	The Beijing news	The paper	The cover
Intelligent information collection	-	√	√
Text content analysis	-	√	√
Image identification	-	√	√
Phonetic recognition	-	√	√
Machine translation	-	-	-
Intelligent error-correction	-	-	-
AI writing	-	-	√
Automatic video editing	-	-	-
Virtual studio	-	√	√
AI audit	-	√	√
Personalized recommendation	√	√	√
Intelligent distribution	√	√	√
Copyright tracing	√	√	√
Propagation analysis	-	√	√
User portrait	-	√	√

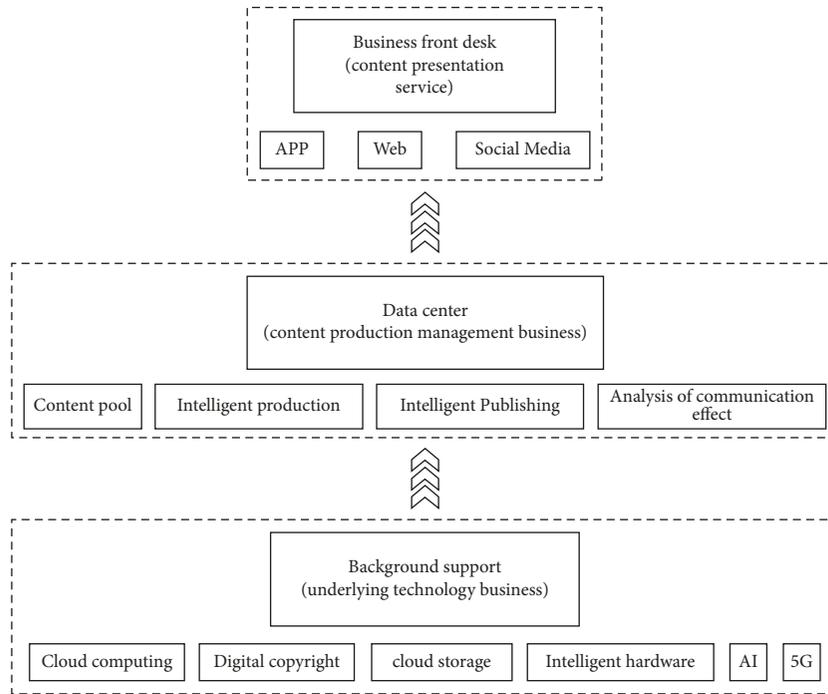


FIGURE 1: Three-tier architecture of information dissemination on Chinese platform.

and the search options were set as “Theme (artificial intelligence)” or “Theme (platform)” or “Theme (new media).” The publication time range is set as “January 1, 2001–March 20, 2022,” the subject is “News and Media,” the search language is set as “Chinese,” and the search time is set as March 20, 2022. A total of 527 journal articles were obtained after retrieval, and the data fields included author’s name, author’s unit, article name, published journal, publication year, keywords, and abstract. Data collation was completed by two volunteers who had been trained by CiteSpace for one week and the researcher. First, the two volunteers screened all the literature independently, and then the researcher compared and reviewed the screening results. After sorting out the literature irrelevant to the research object and

without author information, a total of 318 valid literature were obtained.

In the literature on the research of the information transmission mode of new media platforms in China, the more times and frequency a keyword appears repeatedly, the higher it is, the research hotspot in this field. CiteSpace software was used to take keywords as analysis units, the time slice was set to 1, the threshold was set to 50, and the keyword cooccurrence map was formed, as shown in Figure 2. [11].

The diameter of node circle represents the frequency of occurrence of keywords. The larger the diameter is, the higher the frequency of occurrence is. The font size of keywords represents the different degree of importance. In

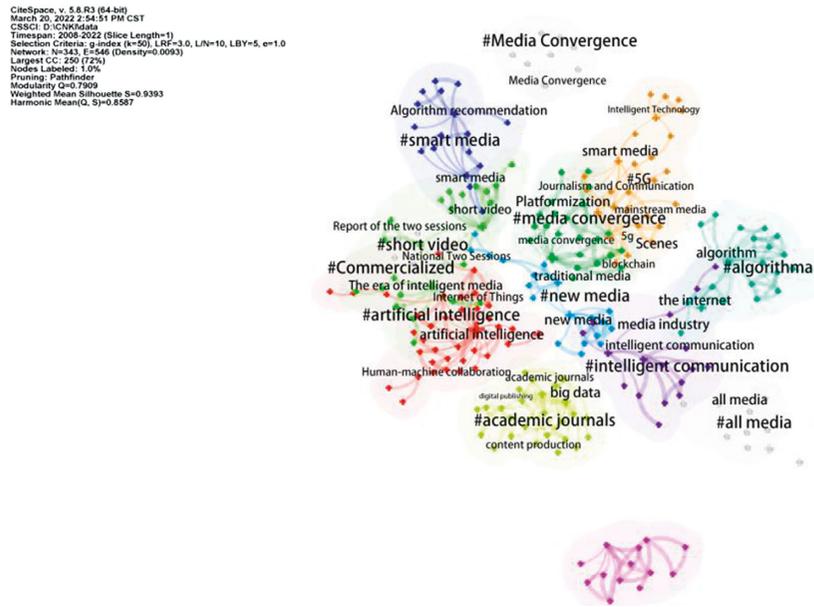


FIGURE 2: Artificial intelligence information transmission research keywords cooccurrence graph.

previous studies, algorithms, big data, media convergence, intelligent communication, and so on are all high-frequency hot spots in the research field of the information communication mode of new media platforms in China.

The “Time Zone View” function of CiteSpace is used to draw the hot time zone Atlas of the research on the information transmission mode of China’s new media platforms from 2008 to 2022. Keywords with high frequency and rapid growth in this field can be seen in different periods. By summarizing the keywords and the combined cluster identifiers, it can be found that there are three major future trends in the research on artificial intelligence information transmission.

**3.1. Application of Artificial Intelligence in Media Information Dissemination.** From Table 2, we can find that two keywords rank first: artificial intelligence and media convergence. Through the analysis of CiteSpace, we also develop the future research fields mainly in these two aspects from the trend chart. Artificial intelligence has reached a stage of rapid development in information transmission. Accordingly, China has issued some strategies and plans for the planning and development of artificial intelligence. The country fully supports the development of artificial intelligence and proposes to speed up the application of artificial intelligence in various fields. [12] In recent years, artificial intelligence has made remarkable achievements in the application of fusion media. From the perspective of content production of fusion media, information collection, content production, and information dissemination are three main processes, and artificial intelligence has played an unexpected role in these three processes. It is a very critical process for the information sources of financial media. In this process, artificial intelligence in our big data can collect and analyze the most suitable materials in a faster, more accurate, and

more comprehensive way, so as to efficiently collect news clues. In terms of content production, artificial intelligence can save a lot of manpower, material resources, and time. In the process of content production, content can be efficiently produced through intelligent arrangement and other means. In the process of information transmission, more highlights the role of artificial intelligence, artificial intelligence technology can provide more abundant auxiliary means, such as our virtual host, in 2019 the People’s Daily “blended”, and in 2019 its “small” and so on, artificial intelligence technology to combine media play an important role in the spread of enhancing the reality of news content production. It can be seen that the application of artificial intelligence in the information dissemination of Rong media will be a field of further in-depth research in the future, so that artificial intelligence can serve human beings and promote the information dissemination of Rong media.

**3.2. Research on New Media Information Dissemination in the Context of Big Data.** From Figure 2, big data, we can find that algorithm media integration, intelligent transmission are a high-frequency hot spot in the field of artificial intelligence information dissemination study, as is known to all, the emergence of large data change the spread of information, for the traditional media information dissemination, the emergence of new media to speed up the process of information transmission, new media information dissemination ability has highlighted the limitation of the traditional media, breakthroughs have been made in time, space, and national boundaries. From the traditional single information transmission chain to the multi-information transmission chain, the data news in the era of big data has been produced. The transmission modes and channels of data information are richer and the transmission effect is more efficient. Big data provides favorable conditions for the

TABLE 2: Keywords of artificial intelligence information dissemination research under platform logic.

Keyword	Frequency (each time)	Year of first occurrence
Artificial intelligence	95	2008
Media convergence	37	2018
Big data	17	2016
Metaverse	16	2008
Intelligent use	16	2008
Short video	16	2017
5g	15	2019
New media	15	2017
Extraterritorial forces	14	2008
Smart media	13	2018
Intelligent communication	11	2017
Social account	11	2008
Algorithm	11	2018
False propaganda	11	2008
Intellectual media era	10	2018
Algorithm recommendation	9	2018
All media	7	2019
Academic journals	7	2017
Digital publishing	7	2018
Intelligent technology	7	2019
Mainstream media	6	2018
Technology empowerment	6	2019
Smart media	6	2017
Media industry	5	2017
Traditional media	5	2017
Blockchain	5	2018

development of new media but also brings unprecedented challenges to the information dissemination of new media. In this new field, although we have many advantages, we still have a lot to explore in the new media information dissemination under the background of big data. For example, we need to reposition and explore the requirements of new media personnel. For example, the degree and rationality of information collection in big data need to make many standards to restrict. In addition, in the new media information dissemination under the background of big data, our audience may be both the audience and the originator of information dissemination. New media information dissemination under the background of big data is a double-edged sword, and how to control and make good use of this "sword" needs our in-depth discussion and research.

*3.3. Research on Algorithm Ethics in the Era of Artificial Intelligence.* It can be seen that one of the research hotspots of artificial intelligence information transmission will be "algorithm ethics." We live in an age of algorithms, and they are creating algorithms and being changed by algorithms. Among the ethical issues involved in artificial intelligence, the most important one to be concerned about is algorithm ethics. Algorithms have penetrated every detail of our lives, influencing our cognition/thinking and decisions. The best action to take in a given situation is the best interpretation of the data. These algorithms enhance or replace human analysis and decision-making, usually depending on the scope or scale of data and rules [13]. In the ethical issues of algorithms, we often see algorithm bias/algorithm

discrimination. "Big data killing" is the most common kind of algorithm discrimination. Overpricing a segment of the population that does not care about price in ways that we cannot detect. The imputation of our algorithm is also a problem that is very complicated, ethical issues of the algorithm is a new field, and we need to start from the most basic encoding and the set of algorithm, to try to keep under the age of the artificial intelligence algorithms process that appears in the form of human understanding, to make clear the relation between artificial intelligence and human, and to evade the risks of artificial intelligence.

#### 4. Conclusion

As mentioned above, the front desk is mainly for the information receiver to realize the optimal presentation and personalized push of information. The middle stage is mainly for operators to complete operation support. The background is mainly for background managers to realize the bottom operation of various systems. The ability of China's media industry is often the embodiment of the cooperative combat ability of the front, middle, and back office. In this paper, CiteSpace software is used to analyze the literature on the research of artificial intelligence information dissemination on CNKI, and the development trend of artificial intelligence information dissemination is summarized and discussed. As Xi pointed out, we should "explore the application of artificial intelligence in news gathering, production, distribution, reception, and feedback, and harness the 'algorithm' with mainstream value orientation to comprehensively improve the guidance of public opinion"

[14]. Artificial intelligence provides an important technical force for the dissemination of new media information. In the context of the big data algorithm, intelligent dissemination is more accurate and efficient. However, accurate information dissemination is not equal to the intelligent dissemination of algorithms in the context of big data. These keywords are relatively new research fields, which need us to further explore and excavate, so that artificial intelligence can better serve the information dissemination of fusion media [15–17].

### Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

### Conflicts of Interest

The authors declare that they have no conflicts of interest.

### Acknowledgments

The study was supported by the Guangxi “Bagui Scholars” Construction Project; high Level Innovation Team project of Guangxi Universities.

### References

- [1] A. B. Nick, *History of Artificial Intelligence*, p. 6, Posts and Telecom Press, Beijing, 2017.
- [2] R. Li, M. Ma, L. Li et al., “The protective effect of autophagy on DNA damage in mouse spermatocyte-derived cells exposed to 1800 MHz radiofrequency electromagnetic fields,” *Cellular Physiology and Biochemistry*, vol. 48, no. 1, pp. 29–41, 2018.
- [3] S. Yang, J. Wang, B. Deng, M. R. Azghadi, and B. Linares-Barranco, “Neuromorphic context-dependent learning framework with fault-tolerant spike routing,” *IEEE Transactions on Neural Networks and Learning Systems*, pp. 1–15, 2021.
- [4] Z. Lv, Z. Yu, S. Xie, and A. Alamri, “Deep learning-based smart predictive evaluation for interactive multimedia-enabled smart healthcare,” *ACM Transactions on Multimedia Computing, Communications, and Applications*, vol. 18, no. 1s, pp. 1–20, 2022.
- [5] Z. Lv, S. Lv, H. Feng, and H. Lv, “Clinical characteristics and analysis of risk factors for disease progression of COVID-19: a retrospective Cohort Study,” *International Journal of Biological Sciences*, vol. 17, no. 1, pp. 1–7, 2021.
- [6] S. S. Sun and Q. Sun, “Analysis on ‘information cocoon’ effect of new media in the era of big data and countermeasures,” *New Media Research*, no. 22, pp. 7–10, 2018.
- [7] X. H. Wang and Y. Y. Jin, “Response of government public opinion to public emergencies based on artificial intelligence technology,” *New Media Research*, no. 15, pp. 56–59, 2020.
- [8] Q. Sun, K. Lin, C. Si, Y. Xu, S. Li, and P. Gope, “A secure and anonymous communicate scheme over the internet of things,” *ACM Transactions on Sensor Networks*, 2022.
- [9] B. Yu, “The impact of the internet on industrial green productivity: evidence from China,” *Technological Forecasting and Social Change*, vol. 177, p. 121527, 2022.
- [10] W. Zheng, L. Yin, X. Chen, Z. Ma, S. Liu, and B. Yang, “Knowledge base graph embedding module design for Visual question answering model,” *Pattern Recognition*, vol. 120, p. 108153, 2021.
- [11] C. Xifeng and W. Han, “The impact of artificial intelligence on information dissemination mechanisms-bibliometric analysis based on CiteSpace,” *Applied Science and Innovative Research*, vol. 6, no. 1, p. p39, 2022.
- [12] J. Q. Qiu and C. F. Chen, “Selection of ‘black box’ opening methods based on artificial intelligence and algorithmic news transparency,” *Journal of Zhengzhou University (Philosophy and Social Sciences Edition)*, no. 05, pp. 84–88, 2018.
- [13] W. Zheng, X. Liu, X. Ni, L. Yin, and B. Yang, “Improving visual reasoning through semantic representation,” *IEEE Access*, vol. 9, pp. 91476–91486, 2021.
- [14] W. Zheng, X. Liu, and L. Yin, “Sentence representation method based on multi-layer semantic network,” *Applied Sciences*, vol. 11, no. 3, p. 1316, 2021.
- [15] F Guo, “The state council on the issuance of a new generation of artificial intelligence development plan guo fa [2017]35,” *Bulletin of The State Council of the People’s Republic of China*, no. 22, pp. 7–21, 2017.
- [16] M Brent, “The ethics of algorithms :mapping the debate,” *Big Data & Society*, pp. 4-5, 2016.
- [17] J. P. Xi, “Accelerating the development of media integration and constructing the pattern of all-media communication,” *Qiushi*, no. 6, p. 7, 2019.