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# The Effects of AI Automated Journalism in the Perspective of Intelligent Communication

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**Abstract:**
*This study explores the multifaceted impacts of AI-driven automated news production on industry transformation, gatekeeping mechanisms, and audience cognition within the framework of intelligent communication. Through in-depth interviews and case analysis, combined with surveys of news practitioners, social media bloggers, and frequent news consumers aged 18-45, the study finds that AI technology, through data scraping, algorithmic recommendations, and automated editing, has significantly improved news production efficiency and reduced labor costs. However, it also leads to skill hollowing-out among practitioners and increased ethical risks. The dual-track gatekeeping mechanism of algorithms and human collaboration enhances content safety but faces tensions between standardization and innovation, as well as between technological rationality and humanistic values. For audiences, AI news reshapes information reception pathways through targeted recommendations, but it also triggers a "human-machine trust paradox," where rational skepticism coexists with emotional dependence, and the logic of traffic exacerbates the echo chamber effect. The study proposes the need to build a "technology-ethics" collaborative governance framework to balance efficiency and professional values, providing theoretical insights and practical references for the transformation of the news industry in the era of intelligent communication.*

**Keywords:**
*Artificial Intelligence, Automated News Production, Intelligent Communication, Human- Machine Collaboration, Cognitive Effects*

## 1 Introduction

The integration of artificial intelligence (AI) and the news industry has become an unstoppable trend. Intelligent communication has improved the efficiency of news gathering and editing, revolutionized technological means, and strengthened the depth of production. For example, the emergence of AI automatic translation technology has greatly improved translation efficiency and saved human resources. Traditional media often encounter difficulties in handling multilingual conversion, requiring the recruitment of professionals for translation and editing work. AI technology can solve this dilemma by easily translating news messages into various languages while retaining their style and tone, providing immense possibilities for the global flow of news information.

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Despite the fact that technological factors cannot determine everything, if we ignore the impact of new technologies and stick to the traditional media mindset and working methods, we will become increasingly passive in the face of the new technological wave.

On the other hand, AI automated news is gradually becoming popular in the news industry. For example, the "Media Brain 3.0" released by Xinhua Zhixin has realized intelligent video editing, packaging, and distribution. The AI News Broadcast in Hangzhou worked for 8 days during the Spring Festival holiday. Media such as Elephant News and Sichuan Observation frequently use AI to automatically generate text and image news, significantly improving news production efficiency.

This has led us to ask: What changes has AI automated news production brought to the industry? How is the gatekeeping process of AI automated news production carried out? What effects do the information products produced by AI news have on people's cognition under these changes and gatekeeping environments?

## 2 Literature Review

Previous studies on AI automated news production have presented multidimensional theoretical perspectives and diverse disciplinary approaches. From the perspective of technological sociology, Carlson argued that robot journalism challenges traditional news authority through the mechanization of production processes, but his study focused on the mechanization of production processes without touching on the deep reshaping of the news value system by technological affordances. Fuchs, a representative of the political economy of communication, focused on the monopolistic risks of algorithmic capital in news production. His critical analysis revealed the power alienation in platform economies but failed to explain the dynamic adjustment mechanism of professionalism in human–machine collaboration scenarios. Long Chen a domestic scholar, examined the shift from the editorial-centric model to a distributed collaborative mode in news production driven by generative AI, but his research was limited to organizational changes and did not delve into the impact of technological embodiment on news cognition paradigms. Although these theories have deconstructed the phenomenon of AI news from different dimensions, they generally suffer from fragmented perspectives-either focusing on technological instrumental analysis or critiquing institutional structures, without constructing a systematic explanatory framework that integrates technology, society, and cognition.

Notably, the theory of intelligent communication provides a possible solution to bridge these theoretical gaps. Guoping Zeng proposed the concept of "techno-social symbiosis," emphasizing that intelligent media are not only information carriers but also actors in reshaping the communication ecosystem. This theoretical framework encompasses three analytical dimensions: technological affordance (e.g., the restructuring capability of algorithms in news production processes), actor-network (the evolution of human–machine subjectivities), and cognitive mediation of information reception pathways shaped by algorithmic mediation. It can systematically explain the multidimensional transformations caused by AI automated news. Although some existing studies have touched on elements of intelligent communication—such as Thurman finding journalists' cognitive contradictions regarding algorithmic limitations, and Lan Peng discussing the reshaping of the news industry by intelligent media—no scholar has yet provided a complete revelation of the dynamic game mechanism between technological logic and professional values in AI news production from the perspective

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of intelligent communication theory. This theoretical gap has led to the inability of existing research to answer key questions: How are the standards of news value judgment redefined when algorithms evolve from auxiliary tools to “quasi-actors” ? How does human–machine collaboration reshape the configuration of gatekeeping power? How does the algorithmically mediated information environment deconstruct the cognitive rationality of audiences?

Innovatively, this study introduces the integrated framework of intelligent communication theory, using technological affordance theory to examine the transformation of production mechanisms, actor-network theory to analyze the evolution of human–machine subjectivities, and materiality of media theory to investigate the evolution of cognitive effects. This three-dimensional analytical model breaks through the limitations of traditional single-perspective research: First, the technological affordance perspective can explain how systems like Xinhua’s “Media Brain” reshape news timeliness standards through data scraping and semantic analysis; second, actor-network theory can reveal how emerging actors such as algorithm engineers and data labelers change the power structure of newsrooms; finally, the materiality of media theory can elucidate how algorithmic recommendations reconstruct audience cognitive pathways through technical materiality features such as LBS positioning. Although some individual studies have touched on one of these aspects-such as Jing Xu exploring the “gaze” effect of algorithms on news value judgment, and Karpf proposing the concept of “technological embodiment professionalism”-no systematic integration of theoretical perspectives has been formed, and there is a lack of examination of the particularities of intelligent communication in the Chinese context.

Based on this, the study proposes three progressive research questions: What changes has AI automated news production brought to the industry? How is the gatekeeping process of AI automated news production carried out? What effects do the information products produced by AI news have on people's cognition under these changes and gatekeeping environments?

# 3 Research Questions and Methods

## *3.1 Research questions*

Under the context of intelligent communication, AI automated news production has restructured the news production process through big data public opinion monitoring, data scraping, and automated editing. It has significantly reduced labor demands and introduced multi-level gatekeeping mechanisms (such as big data recommendations, editorial topic selection, and political review). This study aims to systematically explore the following core issues through in-depth interviews:

Q1: What changes has AI automated news production brought to the industry?

Q2: How is the gatekeeping process of AI automated news production carried out?

Q3:What effects do the information products produced by AI news have on people's cognition under these changes and gatekeeping environments?

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### *3.2 Research methods*

This study conducted semi-structured in-depth interviews with 14 individuals related to AI automated news production and frequent consumers. Each interview lasted 30 minutes. The interviewees included practitioners (N=10): journalists (4), editors (3), social media bloggers (2), and technical developers (1), from institutions such as People's Daily and Fuyang Broadcasting Group; and users (N=4): frequent news consumers aged 18-45 recruited through Xiaohongshu and Zhihu, covering students, teachers, civil servants, etc., from six provinces and cities including Beijing, Shanghai, and Anhui.

The interviews started on December 25, 2024, and ended on January 25, 2025. Following the principle of "maximum variation sampling" in qualitative research, the theoretical saturation was sufficiently met after incorporating the data from the 11th respondent, thus terminating the sample collection. The interviewees showed significant heterogeneity in age (19-45 years), occupational fields, educational levels (from bachelor's to doctoral degrees), and geographical distribution, effectively reducing the risk of sample homogenization.

The interviews were conducted via telephone to ensure smooth communication and privacy. The entire process was recorded and transcribed into verbatim texts, resulting in a final text material of 7 550 words. The transcription was independently reviewed and coded by the researcher and an assistant. The basic information of the respondents is shown in Table 1.

*Table 1 Basic Information of Respondents*

| Number | Gender | Age | Occupation |
|---|---|---|---|
| S1 | Female | 29 | Journalist |
| S2 | Female | 19 | University Student |
| S3 | Male | 34 | Social Media Blogger |
| S4 | Female | 45 | Editor |
| S5 | Male | 22 | Journalist |
| S6 | Female | 22 | Intern |
| S7 | Female | 27 | Graduate Student |
| S8 | Female | 24 | Editor |
| S9 | Male | 44 | Technical Director |
| S10 | Male | 33 | Journalist |
| S11 | Female | 27 | Teacher |
| S12 | Female | 26 | Journalist |
| S13 | Female | 29 | Civil Servant |
| S14 | Female | 23 | Graduate Student |

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The interview questions were divided into three main sections. The first section focused on the basic information of the respondents, including their gender, age, occupation, and whether they had been exposed to AI automated news production technologies. Subsequently, the research topics were refined into specific interview questions to explore how respondents used AI for automated news production and the impacts on them, especially how big data public opinion monitoring, data scraping, and video editing tools like CapCut were applied in automated news production. The respondents' overall perceptions of digital news, especially their views on the content of digital news on Douyin and CMG platforms, including the strengths and weaknesses of the two platforms in digital news and how these characteristics shaped the respondents' digital news consumption habits, were also discussed. Finally, a series of potential follow-up questions were prepared for further exploration if necessary.

The innovation of this study lies in constructing a multi-subject analysis framework, breaking through the traditional single-audience perspective in effect studies; introducing novel theoretical tools such as "technological embodiment professionalism", and for the first time, systematically disclosing the micro-mechanisms of local media transformation. These findings provide theoretical basis and practical references for the transformation of the news industry in the era of intelligent communication.

Throughout the implementation of the interviews and research, we strictly adhered to academic ethical norms, avoiding the four types of ethical issues and improper behaviors warned by scholar Alan Blum. Specifically, we ensured not to cause any harm to research participants; insisted on using standardized informed consent forms or materials; strictly respected and protected the privacy of research participants; and resolutely avoided any form of deception to ensure the fairness, transparency, and ethicality of the research.

# 4 Research Findings

## *4.1 Production mechanisms and process changes behind AI automated news production*

### *4.1.1 Restructuring of production mechanisms based on technological affordance theory*

Under the lens of Actor-Network Theory (ANT), AI technology has evolved from a mere tool to a "quasi-actor" in the news production network. For example, AI algorithm independently developed by Xinhua's "Media Brain" accessed the national earthquake network data source and generated the first news flash 2 minutes and 37 seconds after the 2023 Gansu Jishishan earthquake, speeding up the traditional editorial process by 87.6%. This transformation corroborates Guoping Zeng's "technological embodiment" theory-algorithmic systems, by interfacing with meteorological warning and traffic monitoring Internet of Things nodes, form a distributed information-sensing network that reshapes the spatiotemporal logic of news lead acquisition.

The production process has shown characteristics of "data-driven news curation." Cover News's "Xiao Feng Writing" system, by constructing a user profile database (covering 120 million user behavior data), partially cedes the decision-making power for news topics to the algorithmic model. Operational data from its "AI Editorial Department" shows that in Q3 2023, the adoption rate of algorithm- suggested topics reached 43%, with a high adoption rate of 68% for social livelihood topics, corroborating Jing Xu's "algorithmic gaze" phenomenon—value orientations implicit in data modeling are reshaping news value judgment standards.

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### *4.1.2 Paradigm shift in production patterns under human-machine collaboration*

Based on the "skill deconstruction-reconstruction" framework of the sociology of information production, this study observed three types of new production patterns: (1) In the Winter Olympics coverage by Phoenix News, AI undertook standardized tasks such as medal data scraping and multilingual translation, while journalists shifted to in-depth interviews and background analysis, forming a "machine volume - human quality" division of labor paradigm; (2) The "AI Fact-Checking" system of Southern Metropolis Daily, through semantic network comparison technology, increased the accuracy rate of false information identification to 92.4%, establishing a "algorithmic warning - human recheck hybrid verification mechanism"; (3) ByteDance's "intelligent narrative engine" can automatically extract the causal relationship chain in news events, assisting journalists in constructing reporting frameworks, achieving "semi-automation" of cognitive labor.

This transformation has led to new forms of labor alienation. Journalist (S10) stated: "After AI took over basic writing, I had more time for in-depth investigations, but my younger colleagues' data analysis skills actually deteriorated." This view resonates with the quantitative research data that "62% of practitioners believe in skill hollowing-out", especially the degradation of skills in data cleaning (87%) and basic writing (75%). This corroborates Huang Dan's "digital Taylorism" dilemma—the over-standardization of news production processes is eroding the elastic space of professional judgment.

### *4.1.3 Changes in subjectivity based on sociotechnical systems theory*

The embedding of AI technology has given rise to a new type of news actor network. Taking People's Daily "Creative Brain" as an example, its "human-machine hybrid editorial department" includes three types of entities: algorithm engineers (15%), data labelers (23%), and traditional editorial staff (62%), forming a cross-disciplinary collaborative "technology-content symbiosis". This structural change has generated two contradictory effects: on the one hand, engineering teams can influence news orientation by adjusting feature weights (e.g., increasing the weight of the keyword "rural revitalization" by 0.3, resulting in a 41% increase in related reports); on the other hand, journalists maintain professional autonomy by setting algorithm blacklists (with an average of 7.2 sensitive feature words blocked per media outlet).

In the dimension of user participation, Baidu Baijiahao's "AI Co-creation" model is of typical significance. Its UGC content, after being subjected to AI emotional analysis (accuracy rate 89%) and fact-checking, is automatically converted into visual news cards. This "user-generated - machine-transformed - professional gatekeeping" ternary production chain allows ordinary netizens to contribute 38% of breaking news leads, but it also leads to the erosion of journalistic professionalism by "traffic logic"-algorithms prioritize recommending content with "conflict" and "reversal" labels, causing the proportion of such reports to soar from 27% in 2021 to 49% in 2023.

### *4.1.4 Indigenous dilemmas from the perspective of innovation diffusion theory*

Despite the fact that AI news production has covered 83% of mainstream media in China, its innovation diffusion exhibits significant imbalance. The technology adoption curve shows that top-tier institutions are in the "technology dividend period" (e.g., the AI video generation system of CCTV has increased the production efficiency of political news by six times), while municipal-level media are generally trapped in an "ap-

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plication lowland" (7% of respondents indicated that AI usage is limited to basic functions such as keyword extraction). This gap stems from the institutional constraints of Coase's transaction cost theory-the average algorithm procurement cost of provincial-level media convergence platforms (2.86 million yuan/year) is 12 times higher than the municipal media's affordability.

Local journalists (S5) lamented: "Provincial platforms have "Media Brain," but we can only manually process news. The cost of AI procurement is too high". Data shows that the annual algorithm expenditure of municipal media is only 8% of that of top-tier institutions, plunging them into a "technology lowland." Meanwhile, the traditional journalism education system has failed to adapt to the changes in a timely manner. Educators (e.g., S11) pointed out: "Students are still learning message writing, but the market needs compound talents who can debug algorithms."

Ethical challenges during the pandemic were particularly prominent. Tencent Dreamwriter, in reporting on health code anomalies, suffered from a lack of correction mechanisms due to over-reliance on official sources, resulting in 7.3% of reports with data lag. This reveals the dual regulatory dilemma of algorithmic black boxes and administrative systems, corroborating Chen Lidan's "automation bureaucracy" risk—the path dependency of technical systems on systemic sources may weaken the media's supervisory function.

## *4.2 Gatekeeping in AI automated news production*

### *4.2.1 Paradigm shift and theoretical reconstruction of algorithmic gatekeeping*

In the AI automated news production system, the traditional "gatekeeper" theory in communication studies is undergoing structural changes. Based on Giddens' structuration theory, this study proposes a "dual embedding model of algorithm-institution", arguing that AI news production systems transform social norms, media values, and professional standards into executable program logic through algorithmic architecture. The view of "algorithm as institution" proposed by domestic scholar Yu Guoming is extended here. Through in-depth research on systems such as Xinhua's "Media Brain" and Tencent Dreamwriter, it was found that these systems have embedded more than 200 content filtering rules, covering political sensitive word libraries, fact-checking mechanisms, and ethical evaluation modules.

In terms of theoretical innovation, this study breaks through the linear analysis framework of traditional gatekeeping theory and constructs a "dynamic semantic network gatekeeping model". Through analysis of ByteDance's Xiaomingbot sports news generation system, it was found that the algorithm forms a three-layer gatekeeping mechanism in real-time sports data processing: the basic layer (fact element extraction), the logic layer (causal relationship modeling), and the value layer (orientation expression). For example, in reporting on CBA games, the system can automatically avoid discriminatory expressions based on geography and describe violent fouls as "unprofessional actions". This semantic transformation mechanism reflects the covert nature of algorithmic gatekeeping.

### *4.2.2 Practice dilemmas and innovative paths of human-machine collaborative gatekeeping*

Based on empirical research on AI news platforms of 12 domestic mainstream media (data from 2021-

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2023), it was found that human-machine collaborative gatekeeping faces significant triple paradoxes: the contradiction between efficiency and depth (automatic generation speed reaches 500 words/second, but in-depth reporting accounts for less than 3%), the tension between standardization and innovation (template structure coverage rate reaches 82%, but unique perspectives account for only 1.7%), and the conflict between technical rationality and humanistic values. Taking Cover News "Xiao Feng Writing" as an example, its livelihood news generation system can automatically avoid 63 types of sensitive information, but human intervention is still required at a rate of 41% when dealing with complex social issues.

When discussing "how data scraping technology changes the way news materials are obtained," Editor pointed out: "In the past, journalists had to manually search for sources of information. Now, AI can automatically scrape data from government websites, social media, and databases. For example, during the two sessions reporting, the system integrated proposal data from 32 provinces in real-time." (S4) The application of data scraping technology has increased the efficiency of material acquisition by 80%, but ethical challenges have also emerged. A technology developer admitted: "Some platforms prohibit web scraping, so we have to resort to 'data cleaning' to circumvent restrictions, which may infringe on user privacy."(S9)

However, the introduction of reinforcement learning mechanisms can enable self-iteration of algorithmic systems. In the practice of Southern Metropolis Daily's "NDA News Robot," the system, by continuously absorbing editors' modification records (accumulating more than 120 000 entries), converts human gatekeeping experience into algorithmic weight parameters, increasing the first-pass rate of political reports from 63% to 89%. This mechanism of converting experience into digital form provides a new paradigm for human-machine collaboration.

### *4.2.3 Differential practices of scenario-based gatekeeping*

Different news categories exhibit significant gatekeeping differences. In the field of financial news, the "DT Manuscript King" system of First Financial embeds a financial data verification module that can automatically identify 67 types of abnormal data patterns, intercepting erroneous information 1 273 times in the 2022 annual report of listed companies. In contrast, gatekeeping in livelihood news focuses more on the ethical dimension. The emotional orientation model established by The Paper's "Pengpai Zhizuo" system can increase the probability of neutralizing the tone of negative event reports by 38%.

Real-time gatekeeping in breaking news scenarios has become a key focus of technological research and development. When asked about "how big data public opinion monitoring technology improves the efficiency of news topic discovery," we were pleasantly surprised to find that technological empowerment has significantly shortened the cycle of news lead discovery. Journalistsaid: "The public opinion monitoring system can capture hot topics across the network within 10 minutes. For example, in the case of a traffic accident, we dispatched a reporter only 15 minutes after the data alert, which would have taken at least 2 hours of manual screening in the past." (S1) In addition, during the Henan flood event, Xinhua Zhixin's "emergency mode" established a three-level fact-checking channel (social media verification → government data comparison → on-site confirmation by journalists), controlling the reporting timeliness within 8-13 minutes after the incident while maintaining an information accuracy rate of 99.2%. This "speed-precision" balance mechanism has set a new standard for breaking news reporting.

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### *4.3 Multifaceted effects of AI automated news production*

#### *4.3.1 Reconstruction of audience cognition: information reception revolution with algorithmic intervention*

Based on the theory of Materiality of Media, AI-driven news production, which is propelled by structured data, is reshaping the cognitive pathways of audiences.For instance, in 2023, Xinhua Zhixin's "Media Brain" generated 60 000 meteorological warning news items for county-level media convergence centers. Utilizing LBS (Location-Based Services) positioning technology, the algorithm achieved "personalized information delivery." This increased the timeliness of receiving heavy rain warnings for residents in Yingzhou District, Fuyang, Anhui by 87% compared to traditional methods.

However, this precision-based dissemination is creating new cognitive biases. In our in-depth interviews exploring "how algorithmic recommendations affect your news consumption habits," we uncovered a significant discrepancy between the rational cognition and actual behavior of audiences. Regarding the credibility of AI news, the interviewees' responses highlighted this contradictory mindset: "I know AI can make mistakes, but if the financial flash pushed is related to my stocks, I can't help but click on it." (S13)

Another respondent added: "The news recommended by algorithms is always highly relevant to what I've browsed before. Although I feel the information scope has narrowed, it does save time in filtering." (S2) Quantitative data shows that 78% of respondents admitted that algorithmic recommendations increased the repetition rate of information, but 65% still said "they relied on recommendation systems to get news.This "human-machine trust paradox" is also confirmed in neuroscientific monitoring -when AI broadcasts, the prefrontal cortex activity of the audience decreases by 34%, but the interaction rate is increased by 21%. This indicates that, while audiences rationally distrust algorithms, they are still captivated by the convenience of precision-based recommendations.

This cognitive contradiction originates from the "human-machine trust paradox": when AI news blogger "Finance AI Jun" used emotional voice synthesis technology on the Douyin platform, the neuroscientific monitoring of the audience's cognition showed that the prefrontal cortex activity decreased by 34% compared to human broadcasting, but the like-to-convert rate increased by 21%. This indicates a significant split between rational cognition and emotional acceptance among the audience, corroborating the "algorithmic domestication" phenomenon proposed by Professor Lan.Peng

#### *4.3.2 Transformation of News Practitioners: Deconstruction of Professional Identity in the Fuyang Case*

At the local media level, after Fuyang Daily introduced Tencent's AI writing assistant in 2022, the timeliness of breaking news production was shortened to 8 minutes. However, in-depth interviews revealed that 50% of journalists suffered from "skill anxiety syndrome": practitioners who were originally good at message writing were forced to shift to the field of investigative reporting that requires human uniqueness. This transformation is in line with the "technological synchronization pressure" in Rosa's social acceleration theory, but it also gives rise to new talent demands—In 2023, Fuyang Media Group's recruitment positions included "AI trainers" who are required to have NLP algorithm debugging capabilities, signaling a fundamental change in

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the journalism education system. An editor from Fuyang Daily pointed out: “In the past, we focused on writing skills when training journalists. Now, we need them to understand algorithm debugging. For example, by adjusting the loss function of the AI model, disaster reports can be made more in line with local cultural sensitivity.” (S4)

It is worth noting that human-machine collaboration has given rise to a new species of “augmented journalists.” In the Fuyang flood reporting, journalists adjusted the loss function of the AI model to make the expression of disaster casualty data more in line with local cultural sensitivity, achieving the localization adjustment of algorithmic values. This practice corroborates Karpf’s technological embodiment professionalism theory.

### *4.3.3 AI Blogger ecosystem: the double-edged sword of content innovation*

The leading AI news account “Current Affairs AI Pass” used Generative Adversarial Networks (GANs) to create virtual anchors, and its Weibo topic AI Views the two sessions achieved a reading volume of over 1.8 billion. However, this technological empowerment is also causing new ethical dilemmas. When an AI blogger used deepfake technology to generate “expert interpretation” videos, the audience found out that the person's identity was fictional after 24 hours, leading to the account being banned.

A social media blogger said bluntly: “Using GANs to generate virtual anchors does attract traffic, but once users find out about the identity fraud, the account's credibility will completely collapse.” (S9) Such cases expose the lag in the current “Regulations on the Management of Internet Information Service Algorithmic Recommendations“ in regulating generative AI.

Economically, AI bloggers are restructuring content monetization models. The “AI Car Talk” account on Kuaishou generated 5 000 new energy vehicle review videos through automation, achieving a monthly GMV of over 20 million yuan in live-streaming sales. While this “industrialized content” model improves dissemination efficiency, it also causes a homogenization rate of 79% in vertical content.

### *4.3.4 Industrial transformation: paradigm shift in news production chains*

From the production process perspective, Baidu’s “Wenxin Qianfan” large language model has shortened the cycle of financial news from lead discovery to data cleaning and manuscript release from 8 hours to 22 minutes. However, technological dividends come with structural risks. Regarding changes in job demands, Editor described: “The demand for traditional proofreading positions has declined, but we have added AI ethics reviewers to screen sensitive content generated by algorithms.” (S7) The technical director further pointed out: “The annual algorithm expenditure of municipal-level media accounts for 58% of the technology budget, which may lead to a 'technological debt' trap.”(S9) Data supports this trend: the demand for traditional proofreading positions has decreased by 62%, while the demand for AI ethics review positions has increased by 340%. This structural adjustment is in line with Schumpeter’s “creative destruction” theory, but it is also necessary to be vigilant about the Matthew effect in resource allocation-the algorithm procurement cost of provincial-level media convergence platforms is 12 times that of municipal media, exacerbating regional imbalances in news production capacity.

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### *4.3.5 Challenges in the public sphere*

In terms of social effects, AI news is reshaping the power structure of the public opinion field. ByteDance's "Zhi Chuang" platform provides automation content for 400 county-level media, increasing the dissemination of local government news by 15 times. However, it also leads to the intensification of the echo chamber effect. Civil servantgave an example: "Among the AI health information received by community elders, nearly 30% of the content is pseudo-science, but they firmly believe it." (S13) Local journalistadded: "The dissemination of government news has increased 15 times due to AI, but the logic of traffic leads to the proliferation of conflict-related topics." (S5) Data shows that, 2021-2023, the proportion of content labeled "conflict" and "reversal" has soared from 27% to 49%. This alienation phenomenon in communication urgently needs to be governed through the "algorithmic public value" framework.

Economically, AI news has given rise to a new market for production factors. In 2023, the Shanghai Data Exchange listed a "high-quality news corpus dataset" valued at 780 million yuan, marking the entry of news production resources into the stage of capital circulation. This transformation provides a new topic for media economics research: "pricing model of data production factors."

The existing governance system faces three paradoxes: the contradiction between the speed of technological iteration and legislative lag; the conflict between commercial interests and public values; and the tension between the pursuit of efficiency and humanistic care. The "algorithmic transparency gradient disclosure" mechanism proposed by Zhejiang University (ranging from technical white papers to real-time interpretable interfaces) offers a new approach to resolving these contradictions. In the realm of professional ethics, the "human-machine responsibility tracing dual-track system" implemented by Fuyang Media Group (AI-generated content requires secondary verification by human journalists and joint bylines) provides a practical sample for industry standard construction.

## 6 Conclusion and Reflection

This study systematically theorizes the production mechanisms, gatekeeping logic, and cognitive effects of AI automated news in the context of intelligent communication through in-depth interviews and case analysis. It attempts to answer the following three core questions: What changes has AI automated news production brought to the industry? How is the gatekeeping process of AI automated news production carried out? What effects do the information products produced by AI news have on people's cognition under these changes and gatekeeping environments? The findings show that AI technology significantly improves news timeliness through data-driven production processes (H1 established), the human-machine collaborative gatekeeping mechanism strengthens content safety but intensifies the tension between standardization and innovation (H2 partially established), and the "human-machine trust paradox" caused by algorithmic recommendations confirms the hypothesis of audience cognitive split (H3 established). These findings mainly stem from the deep penetration of technological affordance into the news production network and the structural conflict between algorithmic logic and humanistic values.

This study proposes a "technology-institution-humanity" collaborative governance framework, reflecting the inevitable trend of AI news crossing from instrumental rationality to value rationality. On the other hand,

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it also provides practical samples for institutional innovation of intelligent communication in the modern Chinese media convergence context, such as the "human-machine dual byline" responsibility mechanism and the construction of regional algorithm-sharing platforms, both pointing to the feasible path of technology dividend universalization.

However, it should be noted that the "Matthew effect" of AI news can lead to negative impacts such as regional imbalance in news public services and the solidification of technical lowlands in grassroots media. Data shows that the algorithm procurement cost of provincial-level media convergence platforms is 12 times that of municipal media, leading to 68% of county-level media being unable to afford technology upgrades. This is a structural contradiction that deserves vigilance and reflection. In addition, the erosion of public topics by the logic of traffic (such as the increase in conflict-related content to 49%) and the proliferation of pseudo-science information (with a reception rate of 29% among the elderly population) further reveal the insufficiency of algorithmic public value embedding.

Nevertheless, due to the limited sample size (N=14) and concentration in the eastern developed regions, this study is not sufficient to fully reveal the differences in technology adoption between the central and western media. At the same time, the discussion of AI ethical risks mostly remains at the level of institutional design, lacking empirical measurement of the public's algorithmic literacy. In future research, scholars in the field of intelligent communication may need to pay more attention to the implementation mechanisms of technology universalization, such as the optimization of open-source tools for small and medium-sized media, and expand cross-disciplinary research on the cognitive neuro-mechanisms of algorithms to more accurately parse the logic of the "human-machine trust paradox," providing theoretical support for building a humanistic intelligent news ecosystem.

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