

Intervention and Proliferation: Research on the Application Regulation of the Global Media Industry in the Era of Generative AI

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Abstract

Amidst the dawn of the generative AI era, the global media industry stands at a crossroads, confronted with unprecedented opportunities and challenges. This study explores the development status and regulatory issues of the global media industry in the generative AI era. It examines the opportunities and challenges posed by the integration of generative AI into news production, focusing on trust evaluation, positional strategies, and ethical considerations. Using NewsGPT as a case study, we highlight the efficiency gains but also the risks to news authenticity and credibility. We argue for ethical governance frameworks that balance technological possibilities with human values, ensuring that news dissemination remains true to principles of authenticity, objectivity, and fairness. This balanced approach is crucial for harnessing the power of generative AI while preserving the news industry's credibility and responsibilities.

Keywords

Generative AI; Media Industry; Application Regulation; News; NewsGPT.

1. Introduction

Amidst the dawn of the generative AI era, the global media industry stands at a crossroads, confronted with unprecedented opportunities and challenges. This study delves into the trust evaluation, industry status, positional strategies, and ethical considerations sparked by technological changes as generative AI integrates into news production, aiming to provide an analytical strategy for the application regulations of the global media industry in the generative AI era.

2. Literature Review

2.1. Overview of the Development of the Application of the global media industry in the Era of Generative AI

Both China and the United States attach great importance to the role of artificial intelligence in promoting the digital economy. According to a recent report by the Romanian website Economedia.ro, the United States ranked first in artificial intelligence venture capital investment in 2023, with an investment of 70 billion, while China ranked second with 15 billion. In the 2022 AI 2000 list, which recognizes the most influential scholars in artificial intelligence globally, the United States had the highest number of selected and nominated scholars, with 1,146 scholars accounting for 57.3%. China ranked second with 232 scholars, accounting for 11.6%. However, according to the 2023 AI Index Report from Stanford University, China leads the world with a 29.07% citation rate in artificial intelligence journals. China and the United States account for 75% of global blockchain-related patented technologies, 50% of global

internet expenditure, 75% of the cloud computing market, and 90% of the market value of the world's top 70 largest digital platforms.

The United States continues to maintain its leading position in the field of artificial intelligence. Through the "whole-of-government" and "whole-of-society" models, the US integrates various forces to accelerate the iteration and upgrading of artificial intelligence, thus maintaining its leading edge. In terms of computing power, eight of the top 15 semiconductor manufacturers globally belong to the US, especially holding a clear advantage in electronic design automation (EDA) and semiconductor manufacturing equipment (SME). Many world-leading chips are manufactured by American companies such as NVIDIA, Intel, Apple, Google, and AMD. With regard to algorithms, the most widely used software frameworks, including TensorFlow, CNTK, and Caffe, are all developed by American companies. In terms of data, the US emphasizes rules such as "cross-border data free flow" and "non-mandatory localization of computing facilities," aiming to grasp the initiative in data flow and usage, and enhance the ability of data aggregation to American enterprises and the domestic market.

The application of generative AI in news production has shown a diverse trend, with different countries and regions adopting distinct strategies and positions in responding to the challenges brought by generative AI. For instance, on March 13, 2024, the European Parliament passed the "Artificial Intelligence Act," indicating that the European Union (EU) places greater emphasis on protecting the authenticity and objectivity of news. In contrast, following the introduction of the "2023 AI Research, Innovation, and Responsibility Act" in November 2023, the United States has focused more on utilizing AI technology to enhance the efficiency and attractiveness of news reporting. These differences reflect cognitive disparities in news values and functions across different cultural and social backgrounds.

Concurrently, we have observed that there are still some common issues in the application of generative AI in news production, such as technological maturity, data privacy protection, and ethical and moral norms.

As generative AI expands and deepens its role in news production, news content, integrated with generative technology, has achieved a novel multimodal intelligent interaction mode, representing a brand-new media form. The technological mechanism of generative AI not only shapes a new symbiotic relationship between humans and machines, but also breaks down the traditional boundaries between humans, machines, and information resources, reshaping the generation and utilization patterns of information resources. Under the influence of generative AI, the human-machine relationship increasingly emphasizes mutual integration and collaboration, jointly driving progress in the field of news dissemination. However, with the widespread application of generative AI in news practice, the risk of ethical misconduct in news has gradually emerged. The crisis of human autonomy has become a fundamental challenge that urgently needs to be addressed in the symbiotic relationship between humans and machines. While generative AI replaces human journalists' mental labor, enhancing efficiency, it may also trigger new alienation phenomena, threatening humans' dominant position in news dissemination.

Therefore, it is necessary to establish clear principles for technology usage, examine the value and limitations of generative AI technology, and ensure its healthy and sustainable development. We should closely monitor issues of news authenticity, accuracy, and credibility that may arise from generative AI, and establish necessary regulatory mechanisms for the technology. At the same time, we need to conduct ethical governance of technology based on the possibilities of technological development and human ethical values, balancing the relationship between technology and life, and ensuring that news dissemination activities always adhere to the principles of authenticity, objectivity, and fairness.

2.2. A review of research on the application of the global media industry in the era of generative AI

Gradually, as generative AI deepens its application in news production, public trust and willingness to consume news generated by this technology are expected to gradually increase (Heim & Chan-Olmsted, 2023). While there are minor negative impacts on audience perception of the credibility of news generated by generative AI, overall, it has no significant effect on their evaluation of such news (Wang & Huang, 2024). For instance, a study analyzing how Spanish media and the public perceive generative AI selected eight national newspapers as samples, encompassing both hybrid newspapers (El Pais, La Vanguardia, ABC, El Mundo) and digitally native newspapers (El Espanol, Okdiario, elDiario.es, Publico). The study suggests that the primary purpose of Spanish individuals utilizing generative AI is to seek resources in the fields of economy, education, and science, adopting a generally neutral stance towards it (Gomez-Calderon & Ceballos, 2024).

What impact has generative AI affected on the global media industry? Ultimately, the booming development of generative AI and automation technologies in the news industry has given rise to the emergence of synthetic media (Crusafon, 2022). The dependency of the news industry on generative AI is becoming increasingly evident, with communication agencies being the first to invest in developing and distributing synthetic content to benchmark media (Ufarte-Ruiz, Murcia-Verdu, & Tunez-Lopez, 2023). However, media editors and journalists have also recognized the significant risks associated with the inaccuracy and lack of "empathy" demonstrated by generative AI (Gutierrez-Caneda, Vazquez-Herrero, & Lopez-Garcia, 2023). This has sparked reflections among the Spanish public on the revolutionary role played by automated news producers in the journalism industry, suggesting that the economic conditions and characteristics of each country may have a significant impact on the application of generative AI in the news field (Fernandez & Rodriguez-Pallares & Perez-Serrano, 2024). Some media outlets and websites have collaborated with various generative AI products featuring fact-checking capabilities, reshaping the discourse, text, and production processes of news producers. Generative AI is gradually challenging the authority of fact-checkers and increasingly influencing the news industry (Lelo, 2024). According to a study, regulatory frameworks for generative AI rarely encompass the media, but when they do, they tend to associate them with issues such as misinformation, data privacy, AI literacy, diversity, inclusivity, and social responsibility (Porlezza, 2023). Nonetheless, the algorithmic biases of generative AI can influence its regulatory applications (Nah & Luo & Kim & Chen & Mitson & Joo, 2024).

3. Methodology & Results

This study explores the trust evaluation, industry status, positional strategies, and ethical considerations triggered by technological changes as generative AI integrates into news production. It confirms the necessity and importance of regulating the application of generative AI in the global media industry during this era. With the deepening application of generative AI, its combination with virtual reality technology as a media form will create a new multi-modal intelligent interaction mode. The human-machine relationship under the influence of generative AI emphasizes the integration and collaboration between humans and computers. It is necessary to establish principles for technology use, examining both the value and limitations of technology. We need to focus on the authenticity, accuracy, and credibility of news triggered by generative AI, establish necessary regulations for technology, conduct ethical governance based on the possibilities of technological development and human ethical values, and balance the relationship between technology and life. Furthermore, this study emphasizes the importance of independent development of generative AI technology in news production.

3.1. Analysis of Application Platforms for the News Industry in the Era of Generative Artificial Intelligence

To analyze the characteristics of the global media industry's application in the era of generative artificial intelligence, this paper takes the NewsGPT website, the world's first fully automated news generation platform, as the research platform. Focusing on its iconic generative AI ethics news, we use "AI" and "ethics" as search keywords and employ content analysis to study its discourse characteristics and application attributes during the period from the establishment of the website to November 13, 2023. Using Python, we collected 27 original articles on generative AI ethics news from the NewsGPT website. After data screening, cleaning, and classification, 19 articles were selected as research samples. Then, using Rost CM 6 software and a dictionary-based approach, we performed word segmentation analysis on the research samples to complete data preprocessing and transformation.

Firstly, WordCloud was used to generate a TOP100 word cloud diagram of word frequency for NewsGPT's generative AI ethics news, as shown in Figure 1. High-frequency words in the text include artificial intelligence, investigation, ethics, House of Representatives, conduct, and litigation. Secondly, ucinet was employed to create a semantic network diagram of NewsGPT's generative AI ethics news, depicted in Figure 2. The words ethics, conduct, government, behavior, results, manipulation, and United States have numerous semantic network relationships. Finally, Excel was utilized to produce a proportional diagram of the emotional attributes of NewsGPT's generative AI ethics news, presented in Figure 3. The research samples show a balanced proportion of various emotional attributes, with neutral emotions accounting for the largest proportion of 39%. However, the 33% negative sentiment seriously affects NewsGPT's news value stance.



Figure 1. NewsGPT generative AI ethical news text word frequency TOP100 word cloud map

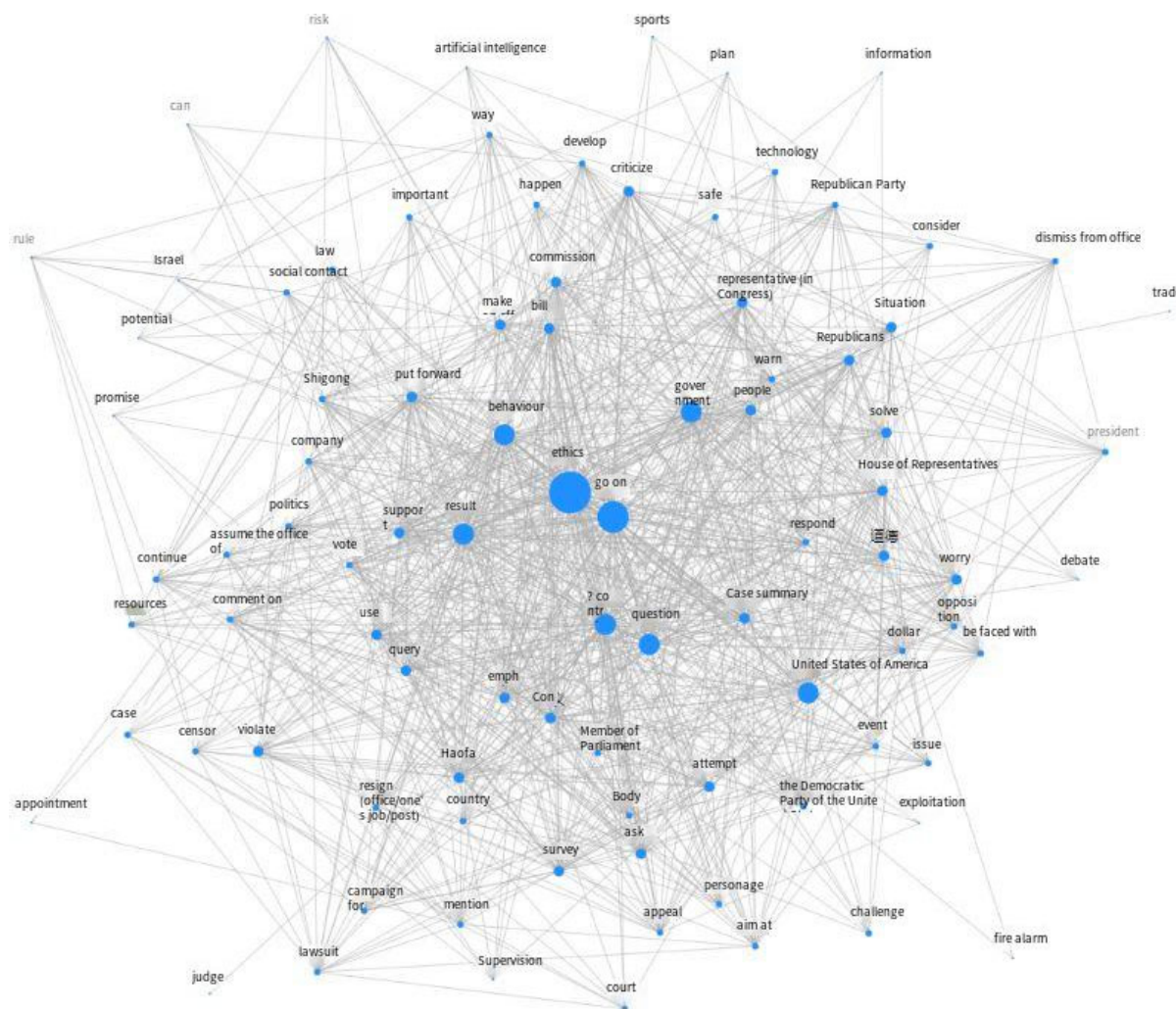


Figure 2. NewsGPT's generative AI ethical news semantic network diagram

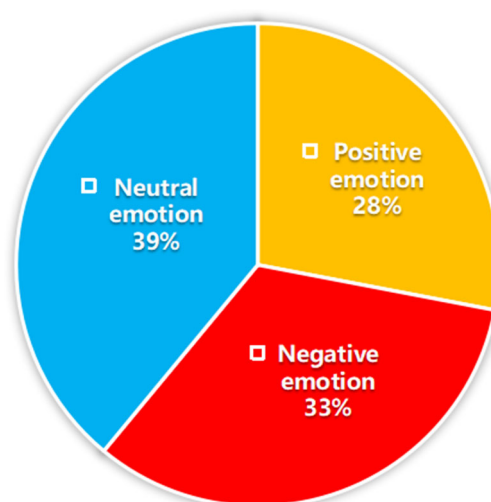


Figure 3. Proportion diagram of the emotional attributes of the generative AI ethical news text

Through analyzing the characteristics of the global media industry's application in the era of generative artificial intelligence, this paper discovers that the data reflects a possible influence of specific contextual and ideological factors from certain countries on NewsGPT's handling of generative AI ethics news. This influence manifests as a clear bias and lack of objectivity. The

frequent use of various vocabulary and complex semantic network relationships reveals a narrow focus and entangled perspectives on AI ethics issues in some countries. Meanwhile, the imbalance in emotional attributes, particularly the relatively high proportion of negative sentiment, further indicates potential prejudices and negative tendencies in some national media's reporting on related issues. This bias not only affects the objectivity and impartiality of NewsGPT as a news generation tool but also has the potential to mislead public perception and understanding of AI ethics. Therefore, when dealing with generative AI news generated by platforms like NewsGPT, we need to maintain a cautious and critical attitude, comparing and analyzing information from multiple sources to form a more comprehensive and objective cognition.

3.2. Exploring the Application Regulation of the News Industry in the Era of Generative AI

In the era of generative AI, the news industry is undergoing a profound transformation as application regulations emerge to address the complex ethical and societal implications of this new technology. Exploring the regulation of news industry applications in this context is critical for ensuring transparency, accountability, and the integrity of news dissemination.

One key area of application regulation concerns the use of AI-generated content in news reporting. As NewsGPT and similar tools gain prominence, it is essential to establish guidelines for identifying and labeling AI-generated stories to maintain journalistic standards and consumer trust. For instance, the European Union has proposed a set of principles for regulating AI-generated content, emphasizing the need for transparency and user empowerment. This approach serves as a useful framework for news organizations to follow in implementing their own application regulations.

Another significant aspect of regulation involves addressing potential biases in AI-generated news. Recent studies have highlighted the potential for AI models to inherit biases from their training data, which could lead to skewed news reporting. To mitigate this risk, news organizations should adopt strict protocols for data sourcing and model training. For example, The Associated Press has implemented rigorous checks and balances in its use of AI for news writing, ensuring that its models are trained on diverse and representative datasets.

Moreover, the regulation of news industry applications in the generative AI era must also take into account the cross-border nature of digital content. With the advent of global news platforms, news stories can now reach audiences worldwide in seconds. This necessitates international cooperation in establishing regulatory frameworks that are consistent across jurisdictions. For instance, the International Federation of Journalists (IFJ) has been promoting the development of global guidelines for AI in journalism, emphasizing the need for cooperation between governments, media organizations, and technology companies.

The regulation of news industry applications in the era of generative AI is a multifaceted challenge that requires a balanced approach. By establishing clear guidelines for the use of AI-generated content, addressing potential biases, and promoting international cooperation, we can ensure that news reporting remains objective, transparent, and trustworthy in this rapidly evolving digital landscape.

4. Discussion & Conclusion

The ideal human-machine relationship is one of mutual promotion, mutual restraint, mutual correction, and mutual domestication. Generative AI technology is profoundly intervening in and reshaping current news production practices, pushing the human-machine relationship from traditional linear interaction towards complex and tight human-machine coupling. This situation is gradually spreading globally with the rapid development of generative AI

technology. In the process of news dissemination, generative AI facilitates dialogue-centered interface coupling, precise logic adaptation and recommendation through algorithms, and the establishment of emotion-oriented brand communities. However, generative AI has also triggered a series of ethical crises in news production practices. It is necessary to establish collaborative governance among participants, strengthen manual verification and data control, refine rating standards and trace false information, and construct news ethics management norms under new technological conditions, centering on responsible technology guidelines.

4.1. Trust Evaluation and Technological Oversight

With the widespread application of generative AI in news production, the public's trust in AI-generated news has gradually increased. However, this technology has also brought issues such as information distortion and bias, posing severe challenges to the authenticity and objectivity of news. Therefore, establishing an effective technological oversight mechanism is crucial. This includes enhancing the transparency of AI algorithms, establishing independent news content review agencies, and formulating clear AI news quality assessment standards. Through technological oversight, the authenticity and objectivity of AI news can be ensured, and the credibility of the news industry can be upheld.

4.2. Industry Status and Competitive Landscape

Driven by generative AI, the news industry is undergoing profound changes. Traditional news organizations need to adapt to these changes and enhance their competitiveness. News organizations need to strengthen research and application of AI technology, improve the efficiency and quality of news production; actively embrace digitalization, socialization, and intelligentization trends, expanding news dissemination channels and methods; and strengthen cooperation with technology companies to jointly promote innovation and development in the news industry. Through these measures, news organizations can occupy a favorable position in the competition and achieve sustainable development.

4.3. Positioning Strategy and Market Opportunities

In the era of generative AI, news organizations need to clarify their positioning strategies and seize market opportunities. News organizations need to identify their core competitiveness and highlight their advantages in news reporting, in-depth analysis, and public opinion guidance; keep abreast of market changes, promptly adjust reporting directions and content to meet the diverse needs of readers; and strengthen cooperation with governments, enterprises, social organizations, and other parties to expand their business areas and revenue sources. Through these positioning strategies and seizing market opportunities, news organizations can achieve diversified development and enhance their market competitiveness.

4.4. Ethical Considerations and Social Responsibilities

In the era of generative AI, news organizations need to attach greater importance to ethical considerations and social responsibilities. News organizations need to abide by news ethics regulations, ensuring the fairness, objectivity, and authenticity of news reports; pay attention to social issues, actively fulfill social responsibilities, and promote social progress and development; and strengthen self-regulation to avoid misuse of AI technology and prevent misinformation and false dissemination. Through these ethical considerations and fulfilling social responsibilities, news organizations can win the trust and respect of the public, establishing a good brand image.

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