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System Restructuring, Value Expansion, and New Challenges: AI Era Journalism Practice Transformation and Challenges

Liangyu Pan*

School of Journalism, Communication University of China, Beijing, China
*panliangyu@cuc.edu.cn

ABSTRACT

In the era of new media, the news industry is undergoing unprecedented changes, especially with the rapid development of AI in content generation (AIGC) technology, leading to significant transformations in the process and form of news production. This paper explores the application of AIGC technology in news production and its impact on user experience: the integration of AI technology not only enhances the efficiency and diversity of news production but also provides users with a more personalized and immersive news experience; however, this technological application also poses challenges for news workers, news audiences, and management. The aim of this paper is to elucidate the transformation of news production in the era of new media, discussing how to effectively utilize AIGC technology in the context of media convergence to promote the healthy development of the news industry.

KEYWORDS

AIGC; New Media; Journalism Practice; Artificial Intelligence.

1. INTRODUCTION

In the era of new media, with the rapid development of AIGC technology, the news industry is undergoing a profound transformation, where the process and form of news production have significantly changed. This is evident not only in the creation and distribution of news content but also in the experience of news users. Currently, the application of artificial intelligence technology is reshaping the landscape of news dissemination, driving the industry towards a more efficient and personalized direction. With the emergence of general-purpose AI models, there is a deeper global recognition of the powerful potential of AIGC technology. These advancements have raised new questions regarding news practices and concepts: how various AIGC tools will alter the news production process, how news value will manifest in new forms under the influence of new technologies, and what challenges it will bring to the news industry.

The transformation and innovation of the news industry through technological changes have become a topic of common concern for academia and the industry.[1] By analyzing the application of AIGC technology in news production and its impact on user experience, this article further elucidates the essence and significance of the AIGC news industry in the era of artificial intelligence. It also explores how to effectively utilize AIGC technology in the context of new media to promote the healthy development of the news industry.

2. RECONSTRUCTION OF NEWS PRACTICE SYSTEM UNDER AIGC TECHNOLOGY

AIGC news production is an emerging form of news that combines artificial intelligence generation technology with news reporting, providing users with timely, effective, and reliable news experiences. In recent years, as artificial intelligence technology continues to evolve, the application of AIGC technology in news production has become increasingly widespread, especially in more standardized news content. It can help in sports news distribution to approach zero cost and in news consumption to feel as if one is present. [2]This corresponds to three dimensions of the construction of news production systems under AIGC technology: efficiency, intelligence, and perception.

2.1. Efficiency: AIGC Promotes Automation of News Reporting

McLuhan once said, "The media is an extension of man's limbs." In the information age, news users all hope to extend their "information touch" through the media.[3]As a product of new media and technological change, AIGC news production maximally meets users' demand for "timeliness" of information, completing standardized news reports in real-time, enhancing the efficiency of information acquisition for users.

Traditional news production emphasizes timeliness, and AIGC can rapidly generate news content, complete standard news reports, and improve news production efficiency, especially in data-intensive sports event results, election results, and sudden earthquake reports. For instance, during the 2021 U.S. presidential election, The Washington Post utilized Heliograf's AI program for automated news reporting, producing over 500 election-related articles. It can analyze voting data in real-time, generate news articles based on predefined templates, swiftly report election results and relevant statistics, meeting users' information needs regarding the U.S. election ballots. In the case of sudden news events, AIGC also plays a role that traditional news reporting cannot match in terms of timeliness. For example, following the 2023 Gansu Jiashi Mountain earthquake in China, a domestic earthquake information broadcasting robot system completed automatic detection within 15 seconds, forming a seismic report and broadcasting it automatically, ensuring the immediate reporting of the emergency event.

Furthermore, Artificial Intelligence Generated Content (AIGC) continuously simulates human-like language expressions during large model training to enhance its humanization level. For example, the new "AIGC Sports Column" from Xinhua News Agency, AI-generated content can intelligently edit news articles based on actual match results and pre-match predictions. Additionally, it has the capability to select and match images from a database and play them in real-time to complement news articles, enhancing the comprehensiveness of news broadcasting.

2.2. Intelligence: AIGC Facilitates Development of Visualized News

With the deepening of media integration, news consumers' demand for sports reporting goes beyond simple event coverage, emphasizing the exploration of news depth. AIGC leverages digital information processing to conduct structural analysis of sports-related issues at macro and meso levels, [4]deeply uncovering news value, and utilizing intelligent graphics, and video generation to achieve visual and narrative news reporting.

The AIGC technology efficiently filters and edits large amounts of information, assisting news journalists and editors in quickly finding news leads and aiding viewers unfamiliar with certain news content in understanding the reports. During the Beijing Winter Olympics, Baidu Intelligent Cloud collaborated with CCTV to utilize "3D+AI" technology in the high-speed continuous ice and snow sports broadcasts, overlaying multiple sports data such as athletes' sliding speed, jump height, landing distance, rotation angle onto the original footage, presenting each movement detail in a 3D space,

allowing viewers, even those less familiar with skiing, to grasp the difficulty of different actions and the judges' scoring criteria. This innovative technological approach provides viewers with a more in-depth and easily understandable match experience.

2.3. Perception: AIGC Empowers Diverse Presentations of News

Under the impetus of top-level policies and market competition, mainstream media forms are embarking on a transformational exploration led by the concept of integrated media thinking.[5] As news consumers' demand for information content rapidly increases, their expectations for the quality of information presentation are also rising. This poses new design requirements for traditional text and image news reports: they need to be more diverse, visually appealing, and perceptible.[6]At this juncture, AIGC can lower the design threshold and provide technological empowerment for diverse news presentation.

AIGC news exploration follows a path of general artificial intelligence, serving as an auxiliary tool to empower various media business scenarios. It offers news producers a straightforward solution for news production: intelligent poster design, artistic creation, video generation, interactive H5 pages, and more. For instance, Alibaba's AI design platform "Lu Ban" can generate AI intelligent posters and produced a billion posters during the "Double Eleven" period. Additionally, ByteDance's "CapCut" and Kuaishou's "Cloud Cut" support AI video creation, while Baidu's "Wenxin·Yige" platform can rapidly generate AI artistic works. These AIGC-generated design contents can directly assist in presenting news content in a diverse and visually appealing manner, enhancing the attractiveness and perceptibility of news.The transformation brought by AIGC to news production extends beyond the efficient and high-quality intelligent production of news information. It also manifests in the diversity of news content presentation, aiding in the design of media creation tools, assisting media in showcasing multiple perspectives, fully unleashing creative potential, [7]and providing audiences with rich and diverse news experiences.

3. VALUE EXPANSION OF TEMPORAL AND SPATIAL DIM-ENSIONS IN NEWS PRODUCTION BY AIGC

During the development of artificial intelligence technology, especially in the field involving AIGC, its initial application was mainly limited to being an auxiliary tool to enhance the efficiency of news production. With the continuous development and innovation of AIGC, its role in the news industry has gradually expanded from a simple production level to a more complex value level.[8] The penetration of AIGC in the news domain provides new opportunities for human-machine integration, enabling it to participate more comprehensively in the expansion of news spatiotemporal value.

3.1. Temporal Expansion: From "Recorders of the Present" to "Pioneers of the Future"

In today, automated writing technology has gradually become an indispensable tool for many media editorial departments. With the significant improvement in news production efficiency, the timeliness value of news has been effectively utilized. Additionally, relying on its powerful data analysis and predictive capabilities, artificial intelligence is bringing new narrative perspectives to the news industry, transforming news from being "reporters of the present" to "pioneers of the future," thus driving the rise of predictive news through AIGC.Taking the example of the popular esports data company MOBA Champion, they utilize AI technology to predict the outcome of game matches and publish predictive reports. Furthermore, iFLYTEK and KFC jointly developed the "KI Colonel" AI image, capable of real-time match result predictions during games and generating content in chart form to provide viewers with match trend forecasts. Due to the uncertainty of predictions, the accuracy of predictions itself has become part of the match's highlights, receiving positive feedback

from the audience.However, the "prediction black box" phenomenon caused by the opacity of AIGC predictive news has raised ethical concerns among people regarding predictive reporting.[9] When it comes to AIGC predictive sports news, a rational attitude should be maintained. The core of predictive news should be the "news" itself, rather than an excessive reliance and worship of "data." In the ever-changing global landscape, the key direction for the future development of predictive sports reporting lies in seamlessly integrating situational analysis and human factors through big data technology.

3.2. Spatial Expansion: From "One-Way Communication" to "Two-Way Interaction"

The application of AIGC in the field of news has promoted the expansion of news spatial value, primarily manifested in the comprehensive perception of information, widespread reception of news, and multi-scenario dissemination, achieving the spatial expansion from "one-way communication" to "two-way interaction." The media ecosystem, driven by AI, is continuously being restructured, leading to the formation of a comprehensive content ecosystem platform. Users are no longer limited to traditional media platforms for accessing information, as various application apps exhibit media characteristics, coupled with the introduction of big data push functions, enabling sports news users to access relevant information in a broader and more diverse range of scenarios. Furthermore, technological advancements have brought about a transformation in news consumption methods, with personalization, mobility, and contextualization becoming key trends in news consumption.[10] Thanks to the widespread use of intelligent mobile devices, a multitude of electronic devices have expanded the scope of information reception, allowing users to consume news at any time and place, express opinions, comments on various elements of sports events, and participate in the production and creation of sports news. The application of AIGC at both ends of sports news distribution and reception further strengthens this inseparable yet invisible interaction, thereby extending the spatial value of sports news.

4. NEW CHALLENGES BROUGHT BY AIGC TO NEWS PRODUCTION

With the iterative progress of artificial intelligence technology, AIGC technology is approaching a professional level in news production, dissemination, and reception. [11]While AIGC technology brings many conveniences to news production, it also harbors numerous issues that urgently need to be revealed and addressed, such as industry ecosystem impacts, news authenticity concerns, blurred information copyrights, presenting unprecedented challenges for journalists, news consumers, and news managers.

4.1. Journalists: Blurring Boundaries in Journalism

The digitalized information environment has significantly transformed the way news is disseminated. With the continuous evolution of news carriers, content forms, and distribution channels, the boundaries of news are becoming increasingly blurred and face the risk of gradual dissolution,[12] especially evident in the prevalent era of new media. Peripheral or marginal participants in the news field, such as various self-media on short video platforms, can utilize AIGC technology to templateize the production of hot events, creating "convincing" content to attract public attention. This poses a threat to the survival space of professional journalists, and the news authority of traditional media may further weaken due to the dissemination of false information by self-media-news audiences may involuntarily equate self-media creators spreading false information with traditional media journalists. This necessitates news professionals to diligently verify news sources, focus on the "backfire effect" when debunking false information, enhance self-discipline, address the loopholes in news reporting on current new media platforms, and prevent the spread of false information.

4.2. Consumers: Difficulty in Distinguishing between Authentic and False Sources

Artificial intelligence content generation platforms, such as Chat GPT, primarily achieve a high level of natural language simulation through continuously updated datasets. While AIGC news robots have been making progress in understanding and processing natural language, they are unable to autonomously create entirely new foundational knowledge. The produced content often references online resources, leading to a mix of information sources that make it difficult to distinguish between truth and falsehood, resulting in shortcomings in fact-checking rigor and raising doubts about accuracy and authenticity. The seemingly professional information generated by AIGC could mislead individuals lacking expertise, contributing to the proliferation of false information in the digital environment and reducing public awareness of fake news.

During ongoing interactions among users, AIGC adjusts and enhances its content generation activities based on users' personal values and reading preferences to achieve personalized customization of disseminated content.[13] However, while information dissemination based on individual interests can enhance efficiency, it may also lead to negative consequences, such as the formation of "information bubbles." If AIGC is utilized in news production, this dissemination mechanism could potentially undermine the objectivity of news and reinforce users' inherent biases.

4.3. Managers: Challenges in Defining Information Copyright Boundaries

The Berne Convention, Article 2(8) states: "Copyright shall not protect mere facts, even if the presentation of these facts involves some level of creativity."[14] In the field of news, simple factual reporting is not protected by copyright law, but in-depth reports with high news value are subject to legal protection.

AIGC news creation faces challenges in the realm of copyright. As the content production by AIGC is based on rearranging existing knowledge stored on the internet, it essentially involves reorganizing this pre-existing knowledge. However, this "secondary processing" of existing knowledge can easily lead to disputes related to intellectual property rights. For example, News Corp's Dow Jones has criticized Open AI for unauthorized use of news reports from The Wall Street Journal as training material for Chat GPT.[15] This situation has raised issues of accountability and determining copyright ownership for managers. Currently, there is no unified view in academia regarding the copyright of works created by AI. Considering that AI-generated works lack human creativity and emotional expression, many scholars argue that these works should not be protected by copyright law.[16] However, as AI is seen to possess a certain level of cognition and innovation, some viewpoints suggest that AI-created works should have some copyright protection from the perspective of encouraging innovation through copyright law.[17] Yet, since artificial intelligence is not a natural person or legal entity, assigning authorship to AI presents legal complexities. This poses significant challenges to the fundamental concepts and defining standards of current copyright law.

5. SUMMARY

In the news industry, the application of AIGC technology has made news content more personalized and targeted, undoubtedly enhancing the attractiveness of news in the era of new media and increasing user engagement. Additionally, the trend of media convergence allows news organizations to reach a broader audience through multi-platform strategies. This combination of technology and strategy not only changes the way news is produced and distributed but also profoundly influences user consumption habits, providing a more customized and interactive news experience.

However, this shift in experience also comes with challenges. News users have become more diverse and personalized in their information needs, requiring news producers to focus on content quality, depth, diversity, and attractiveness. Furthermore, as concerns about information authenticity grow,

the news industry faces the importance of adhering to ethical guidelines when using AIGC technology to ensure the accuracy and reliability of information.

Looking ahead, the application of AIGC technology in the news industry is full of innovative possibilities and transformative opportunities. However, this also requires the news industry to remain vigilant about technological developments to ensure that their application does not compromise the core values and ethical standards of journalism. Finding a balance between technological innovation and ethical considerations will be a key task for the news industry to effectively serve the public while maintaining its professionalism and credibility. In conclusion, the transformation of news production through AIGC technology in the context of media convergence offers significant opportunities and challenges, profoundly impacting the future direction of the news industry.

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