An Exploration of the Integration of AI Technology with Broadcasting and Hosting in the New Media Environment (Postprint)

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Date: 2025-07-09T15:34:25+00:00

Abstract

【Purpose】 The new media environment has placed higher demands on broadcasting and hosting, necessitating the rational application of AI technology to empower innovation and upgrading in broadcasting and hosting, and to propel the modernization and digital-intelligent development of the field.

【Method】 AI technology has not only revolutionized content creation, editing, and distribution for broadcasting and hosting, but has also made possible the personalized customization of user experience. In the new media environment, exploring how AI technology can integrate with broadcasting and hosting is not only an inevitable choice for meeting the high demands of the new media landscape, but also the key to driving innovation and upgrading in broadcasting and hosting. However, the integration of AI technology with broadcasting and hosting is no easy task, as it involves deep integration across multiple levels, including technological innovation, content creation, and user experience.

【Results/Conclusion】 To this end, and to better achieve the integration of AI technology with broadcasting and hosting, this paper analyzes the impact of AI technology on traditional broadcasting and hosting, discusses the irreplaceability of traditional broadcasting and hosting work, and further explores strategies for integrating AI technology with broadcasting and hosting from four aspects: promoting technological innovation to jointly achieve personalized development, deepening AI technology application to meet diverse audience needs, realizing intelligent content production to enhance work efficiency, and strengthening interactive experience to ensure bilateral intelligent integration, thereby providing reference and guidance.

Full Text

Preamble

Exploring the Integration of AI Technology and Broadcasting in the New Media Environment

(Henan Radio and Television Station, Zhengzhou, Henan 450000)

Abstract

The new media environment imposes higher demands on broadcasting and hosting, necessitating the rational application of AI technology to empower innovation and upgrading, and to promote modernization and digital-intelligent development. AI technology not only revolutionizes content creation, editing, and distribution for broadcasting and hosting, but also enables personalized customization of user experiences. In the new media environment, exploring how AI technology can integrate with broadcasting and hosting is not only an inevitable choice to meet the high demands of the environment, but also a key to driving innovation and upgrading. However, such integration is not easy, as it involves deep integration across multiple levels including technological innovation, content creation, and user experience. To better achieve this integration, this paper analyzes the impact of AI technology on traditional broadcasting and hosting, discusses the irreplaceability of traditional broadcasting work, and further explores integration strategies from four aspects: promoting technological innovation for co-development of personalization, deepening AI application to meet diverse audience needs, achieving intelligent content production to improve work efficiency, and enhancing interactive experience to ensure intelligent fusion between both parties, providing references for the industry.

Keywords: new media environment; AI technology; broadcasting and hosting; media convergence; full-process acquisition

CLC Number: G202
Document Code: A
Article ID: 1671-0134(2025)05-138-04
DOI: 10.19483/j.cnki.11-4653/n.2025.05.030
Citation Format: Huang Linan. Exploring the Integration of AI Technology and Broadcasting in the New Media Environment [J]. China Media Technology, 2025, 32(5): 138-141.

Broadcasting and hosting, as a crucial component of the media industry, has traditionally relied on the voices and images of presenters to convey information, tell stories, and express emotions. However, in the new media environment, audience demands for content have become increasingly diversified, with greater emphasis on personalization, immediacy, and interactivity. This has rendered traditional broadcasting models gradually obsolete and unable to meet modern audience needs. The introduction of AI technology enables machines to mimic human voices, expressions, and intonations, and even customize and push pro-

gram content for different user groups, injecting new vitality into the broadcasting industry. On one hand, AI technology can help hosts improve work efficiency through automated news writing, speech synthesis, real-time translation, and other applications. On the other hand, intelligent algorithms can efficiently analyze massive datasets to predict audience preferences, thereby optimizing program scheduling and enhancing user experience. Meanwhile, this also raises questions about how to effectively integrate AI technology with broadcasting and hosting. In light of this, exploring the integration of AI technology and broadcasting in the new media environment holds practical significance. This paper aims to discuss integration strategies to promote innovative development in the broadcasting industry.

1.1 More Intelligent Content Generation and Information Broadcasting

In the new media environment, user demand for information has become immediate and personalized, requiring broadcasting and hosting to not only improve content production efficiency but also ensure information accuracy and diversity. However, traditional broadcasting models struggle to meet these new demands, as content generation and information broadcasting primarily rely on manual work, which consumes substantial time and labor costs while being prone to human error. The integration of AI technology in broadcasting can effectively address these needs and significantly enhance the intelligence level of content generation and information broadcasting. First, through natural language processing (NLP) and machine learning algorithms, AI technology can rapidly analyze massive data to automatically write news scripts, weather forecasts, financial information, and other content, improving production efficiency while ensuring accuracy and timeliness [1]. For instance, AI can generate real-time stock market analysis reports or sports event summaries based on continuously updated data, dramatically reducing time costs for manual writing. Simultaneously, AI technology can assist in content review and proofreading, helping broadcasters identify and correct errors to further improve content quality. Second, through NLP, text-to-speech (TTS), machine learning, and other AI technologies, intelligent AI broadcasting can be realized. AI broadcasting can not only mimic the vocal characteristics of announcers to quickly complete information delivery but also break language barriers by seamlessly switching between multiple languages to meet the needs of different linguistic groups, which is particularly significant for international news reporting and cross-border corporate communication [2]. Moreover, since AI broadcasting systems are unaffected by emotional fluctuations or fatigue, they can provide users with 24/7 uninterrupted news and information services while maintaining stable output quality over extended periods, effectively avoiding human errors.

1.2 Significantly Increased User Engagement and Experience

Under traditional broadcasting models, user engagement and experience were relatively monolithic and could not satisfy the diverse needs of modern users in the new media environment. The fusion of AI technology and traditional broadcasting not only revolutionizes content generation and information broadcasting but also significantly enhances user engagement and experience. Through a series of intelligent tools and services, media platforms can better interact with users and create a more immersive and personalized broadcasting environment. On one hand, AI technology can simulate the images and voices of real broadcasters and achieve realistic body language expression through 3D modeling and motion capture technology, making programs more attractive. For example, AI can mimic different languages, dialects, or even specific individuals' vocal characteristics, and adjust tone and intonation based on context to adapt to different program styles and user needs. This flexibility creates more creative space for broadcasting and enriches users' audio-visual experiences, allowing them to choose broadcasting styles, speech rates, and even virtual anchor images according to their preferences. On the other hand, machine learning algorithms can create personalized recommendation systems that provide customized broadcasting services and content 推送. For instance, AI technology can effectively analyze multi-dimensional data such as user browsing history, listening preferences, and social behavior to accurately push content that matches individual interests. Additionally, AI-driven chatbots integrated into social channels can further enhance audience participation by facilitating communication among users and interaction with program content. These chatbots can reply to comments in real time, answer questions, and even organize online discussions or voting activities, effectively innovating interaction methods and strengthening user engagement [3].

2.1 Irreplaceability of Emotional Expression

Emotion is the soul of broadcasting creation, the bridge connecting broadcasters with audiences, and the key to transforming text into vivid stories. Excellent broadcasters can not only maintain their emotions in an active state but also accurately convey the emotional core of works through vocal cadence, tone variations, and subtle linguistic nuances. This ability enables broadcasters to establish deep emotional bonds with audiences by moving them and achieving emotional resonance—sharing joy and sorrow, laughter and tears [4]. In the new media environment, AI anchors have gradually emerged in the broadcasting field with the development of AI technology. However, AI still has certain deficiencies in emotional expression. AI anchors' emotional expression is largely based on preset algorithms and big data analysis, lacking genuine life insights and wisdom accumulation. Therefore, when facing complex and delicate emotional scenarios—such as the deep, genuine emotions revealed in "The Reader · One Square Meter"—AI anchors struggle to empathize and put them-

selves in others' shoes. While they may mimic certain emotional expressions in actual broadcasting, they cannot generate authentic emotional resonance from the heart like human broadcasters.

2.2 Host's Ability to Control and Adapt

Broadcasters play an indispensable role in programs and can be understood as the "hosts" of the show. As "hosts," they must not only demonstrate professional competence and excellent qualities but also possess the ability to control and manage the hosting situation [5]. This capability involves not only grasping the rhythm of the scene but also integrating information, adapting to situations, and flexibly handling various emergencies. Excellent broadcasters can quickly adjust their state in different hosting contexts to ensure smooth program execution and deliver optimal viewing experiences for audiences. In contrast, although AI technology can interact with audiences based on preset algorithms and scenarios, AI anchors—as products of human technological development—often struggle to dynamically control situations like human broadcasters when encountering circumstances beyond their preset parameters. Moreover, due to the lack of genuine emotional experience and improvisational response capabilities, AI anchors may appear mechanical and unnatural when dealing with complex and changeable live environments. Taking the program "If You Are the One" as an example, host Meng Fei has become an irreplaceable core of the show with his calm and rational style. Meng Fei not only demonstrates excellent control ability but also maintains composure during complex interactive segments, skillfully guiding topics, resolving awkwardness, and ensuring smooth program flow. His control ability is manifested not only in guiding guests and audiences but also in his keen perception of changes in the live atmosphere and his ability to make timely and correct adjustments based on experience—maintaining propriety while keeping audiences relaxed and happy.

2.3 Firm Stance in Commentary Broadcasting

Excellent commentary broadcasting is not only about information transmission but also about value dissemination. Announcers must possess correct worldviews, outlooks on life, and values, and naturally integrate proper concepts into their commentary. This requires broadcasters to have not only solid basic broadcasting skills—such as accurate intonation, clear pronunciation, appropriate rhythm, and profound understanding of language arts—but also rich social practice experience and life experience to enable deeper understanding of current social phenomena and make in-depth and comprehensive analyses of complex issues through accurate language expression. Taking "International Sharp Review" as an example, broadcaster Kang Hui is renowned as "textbook-like commentary broadcasting." With years of work experience and profound understanding of international situations, he accurately conveys the Chinese nation's shared indignation while maintaining the demeanor and responsibility of a major power, and can firmly yet rationally express viewpoints from the

standpoint of the nation and its people, delivering positive energy [6]. In contrast, although AI anchors can vividly simulate broadcasters' intonation and voice in some aspects, they remain machines in essence, lacking real life experience and emotional experience, and cannot make analyses and judgments based on emotional and life elements in complex real-world situations. Furthermore, AI anchors lack subjective initiative and self-awareness, preventing them from forming their own worldviews, outlooks on life, and values. This means they can only rely on preset data and rules when making value judgments, lacking creativity and flexibility. Although they can generate reasonable commentary, the absence of deep thinking and genuine emotion prevents them from truly touching audiences.

3. AI Technology and Broadcasting Integration Strategies

3.1 Promoting Technological Innovation for Personalized Development

In the new media environment, AI technology has been widely applied in broadcasting and hosting. With its efficient data processing capabilities, intelligent content generation, personalized interactive experiences, and continuously optimized emotional expression, AI has not only improved the accuracy and timeliness of information transmission but also provided audiences with richer and more vivid audio-visual enjoyment [7]. To enhance broadcasting quality while delivering positive energy to audiences, it is necessary to explore integration paths between AI technology and broadcasting based on actual conditions. Additionally, to meet the differentiated needs of audiences in the new media environment, it is essential to ensure the personalized development of both AI and broadcasting professionals while focusing on optimizing and innovating AI technology to develop more personalized functions according to audience needs. To this end, it is necessary to actively innovate and develop AI speech synthesis technology and research advanced language synthesis algorithms and models. High-quality AI speech synthesis can make AI anchors' language expression closer to that of professional broadcasters, providing audiences with better audio-visual experiences. Specifically, the following measures can be taken: First, optimize voice timbre. Through deep learning and big data analysis, develop speech synthesis systems that simulate different voice timbres, enabling AI anchors to flexibly adjust timbre according to different program types and audience needs. Second, regulate pitch. Pitch variation is an important means of emotional expression. By introducing emotion recognition and synthesis technology, AI anchors can automatically adjust pitch based on the emotional tendency of the text, making broadcasting content more vivid and infectious. Third, speech rate directly affects audience comprehension and acceptance. To help audiences better understand broadcasting content, it is necessary to develop intelligent speech rate adjustment technology that enables AI anchors to dynamically adjust broadcasting speed according to content complexity and audience needs. For example, speech rate can be appropriately slowed when introducing com-

plex scientific concepts to ensure clear information transmission, while it can be accelerated in fast-paced entertainment programs to increase compactness.

3.2 Deepening AI Application to Meet Diverse Audience Needs

In the new media environment, audience demands for broadcasting content are gradually diversifying. To better satisfy audience needs and promote the sustainable development of broadcasting in this environment, AI technology application should be deepened by enhancing AI anchors' visual performance to meet diverse viewing needs [8]. First, further research and develop AI anchor facial expression synthesis technology. By integrating advanced technologies such as deep learning and computer vision, real-time capture and synthesis of AI anchor facial expressions can be achieved, enabling more realistic and accurate simulation of real human expression changes and providing audiences with more authentic, dynamic, and flexible expressions. Second, utilize computer vision technology to capture broadcasters' facial expressions in real time during work, then analyze and model them through deep learning algorithms. By accumulating large amounts of relevant data, AI anchors can automatically generate appropriate expression changes according to different broadcasting scenarios, better satisfying audience visual experiences. Third, through accumulating and learning from large amounts of real human face data, generate multiple different AI anchor facial models based on actual conditions, allowing audiences to flexibly adjust AI anchor facial features according to their preferences. Finally, continuously optimize AI anchors' natural language processing technology by improving semantic matching rules, emotion synthesis logic, and emotion analysis models, enabling AI anchors to understand and respond to audience questions in a more human-like manner. This not only equips AI anchors with a certain degree of automated processing functionality to help broadcasting professionals share workload but also helps them understand complex questions or dialects from audiences, thereby improving language interaction efficiency between broadcasting professionals and audiences and positively impacting broadcasting practitioners.

3.3 Achieving Intelligent Content Production to Improve Work Efficiency

In the new media environment, broadcasting content needs to accelerate production efficiency and enhance audience interaction as much as possible while ensuring quality, in order to establish a foothold in the new media market with diverse media formats [9]. Specifically, the following measures can be taken: First, use AI technology to analyze public preferences and extract news information content accordingly. While ensuring the authenticity, integrity, and objectivity of news content, design broadcasting content that suits public taste to improve click-through rates and browsing rates, promoting the sustainable and healthy development of the broadcasting industry. Second, based on AI technology's powerful data collection and processing capabilities, collect and analyze large amounts of news materials according to broadcasters' needs and extract

key information and valuable references. This can not only uncover hidden stories behind news to enrich the breadth and depth of program content but also indirectly reduce work pressure on broadcasting professionals, allowing them to devote more energy to designing broadcasting content or improving personal capabilities, effectively promoting the healthy development of the broadcasting industry. Third, use AI technology to collect broadcasting data and audience feedback information in real time, and employ AI prediction models to forecast future hot topics, helping broadcasting professionals prepare relevant reports in advance and effectively enhancing program timeliness and foresight. In addition, using AI technology to achieve integrated collection and editing workflows in broadcasting can significantly improve work efficiency. AI technology can automatically complete initial news drafting, fact-checking, language polishing, and other tasks, enabling broadcasting professionals to focus on more creative tasks including interviews, commentary, and emotional expression, significantly enhancing interactivity in broadcasting work and narrowing the distance between broadcasters and audiences [10]. Furthermore, AI technology can assist with multilingual translation and cross-cultural content adaptation, helping programs better reach global audiences and expand international influence.

3.4 Enhancing Interactive Experience to Ensure Intelligent Fusion

In the new media environment, to further improve the attractiveness of news content to audiences, broadcasting should strengthen integration with AI technology, fully leverage the advantages of both parties, and incorporate emotion and reason into broadcasting [11]. Broadcasting professionals can draw on their rich life experience and emotional understanding to bring audiences authentic and moving broadcasting experiences, while AI anchors can provide more objective and rational perspectives through precise data analysis and emotion synthesis technology. The two complement each other to present rich and diverse program content for audiences [12]. On one hand, AI anchors can serve as a communication bridge between broadcasting professionals and audiences, enhancing interactivity and participation. With AI technology assistance, negative and passive content in audience comments can be automatically filtered, and "true fans" can be dynamically identified based on data such as click-through rates, browsing rates, and completion rates. AI technology can quickly respond to these true fans' messages and provide personalized answers and suggestions, which not only narrows the distance between broadcasting professionals and audiences but also further enhances program influence and appeal. On the other hand, through intelligent fusion of AI technology and broadcasting professionals, the personal capabilities and comprehensive qualities of broadcasting professionals can be continuously enhanced. During daily broadcasting, AI technology can fully collect broadcasting content and broadcasters' language states, help them analyze their own vocal performance through big data analysis technology, and provide targeted improvement suggestions based on audience feedback to help them continuously improve broadcasting quality. Additionally, AI technology can assist broadcasting professionals in content planning and creative genera-

tion, stimulating their creativity, promoting continuous innovation in program content, and ensuring diversification of program content and formats.

In summary, in the new media environment, the full integration of AI technology and broadcasting is not only an inevitable trend for the modernization and digital-intelligent development of the traditional broadcasting industry but also an important path for the industry to adapt to new media environment requirements and achieve innovation and upgrading. Through integrated AI application, broadcasting can not only break through traditional format limitations and effectively improve content creation efficiency and quality but also more accurately capture user needs, provide personalized interactive experiences for audiences, and enhance communication effects. However, as AI technology becomes more deeply integrated into the broadcasting industry, it also faces a series of challenges such as user privacy issues, ethical concerns, and data security problems. Therefore, future efforts should not only continue deepening the integrated application of AI technology and broadcasting but also strengthen regulation of AI technology application to better empower innovation, upgrading, and development in broadcasting.

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(Responsible Editor: Li Yansong)

Note: Figure translations are in progress. See original paper for figures.