



The AIGC revolution: Enhancing content generation efficiency in Chinese broadcast media

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ABSTRACT

Despite rapid advancements in Artificial Intelligence-Generated Content (AIGC) across various sectors, research on its specific implementation within the Chinese broadcast media industry remains limited, particularly regarding its impact on content generation efficiency, quality, and associated challenges. This exploratory study investigates AIGC technology applications in content creation workflows within the Chinese broadcast media, contributing unique insights from China's distinctive digital ecosystem shaped by the "Great Firewall" and specific regulatory environment. Guided by the Media Ecology Theory, this research employed a qualitative approach through semi-structured interviews with key executives from two leading Chinese film and television companies. The study reveals that AIGC technology brings significant operational efficiency improvements, including approximately 50% increased 3D rendering efficiency and substantial reductions in time and costs for scriptwriting, graphic design, and video editing. These findings indicate a transformative shift in traditional content creation practices, highlighting AIGC's potential to enhance productivity while reducing operational costs. However, the research identifies critical implementation challenges, including workflow modelling complexity and content duplication issues that create "efficiency paradoxes" where apparent gains mask underlying complexity increases. The study contributes novel theoretical insights by extending the Media Ecology Theory to understand AIGC as an environmental force that fundamentally transforms production ecosystems through environmental restructuring, cognitive reframing, and cultural redefinition. Methodological limitations include a small sample size of two companies and executives, limiting statistical generalisability while providing analytically rich insights into early-stage AIGC deployment within China's unique media landscape. Despite implementation challenges, high user satisfaction with AIGC-generated content suggests broad application potential. This research offers valuable insights into balancing AI-driven efficiency with human creativity and provides a foundation for future studies on integrating AIGC technology into media production within distinctive cultural and regulatory contexts.

Keywords: *Artificial intelligence-generated content (AIGC), Chinese broadcast media, content generation efficiency, media ecology theory, human-AI collaboration*

INTRODUCTION

In an era of rapid digital advancement, Artificial Intelligence-Generated Content (AIGC) technology is becoming a crucial tool in media content production, presenting both opportunities and challenges for the broadcasting industry. Broadcast media, as a traditional platform for information dissemination, faces dual challenges: 1) the increasing diversification of audience demands; and 2) intense competition from new media. Traditional content generation methods are time-consuming and labour-intensive, making it difficult to respond swiftly to market demands. Therefore, the application of AIGC technology in broadcast media holds considerable promise, offering potential solutions to many issues inherent in traditional methods.

In recent years, AIGC technology has experienced rapid advancements, largely propelled by breakthroughs in artificial intelligence (Taherdoost & Madanchian, 2024). OpenAI's GPT-3 and GPT-4 have achieved significant breakthroughs in text generation quality (Brown et al., 2020; OpenAI, 2023). The application of Generative Adversarial Networks (GANs) in image and video generation has made the automatic creation of high-quality visual content possible (Karras et al., 2020). These developments have increased AIGC adoption across media industries.

However, China's "Great Firewall" creates a distinct internet environment that differs significantly from the international landscape, deeply influencing China's development of AIGC technology through domestic policies, market demands, and cultural context, resulting in a unique model of innovation (McCausland, 2021; Zeng, 2020; Zhu et al., 2023). For instance, Baidu's ERNIE (Enhanced Representation through Knowledge Integration) model, developed in response to specific linguistic and cultural needs in China, showcases a distinct approach to AI content generation (Sun et al., 2019). ERNIE is designed to understand and generate content that aligns with Chinese cultural narratives and government regulations, making it a powerful tool for creating AI-driven content on media platforms such as news outlets and social media (Wang et al., 2020).

While China's AIGC technology has developed within a unique digital environment, the rapid advancement of AIGC globally has led to its widespread adoption across various sectors, making it essential to examine its impact on specific fields such as news media, advertising, and film production. For instance, in the field of news, Noain-Sánchez (2022) studied the impact of machine-generated news on the industry, finding that AI-generated news content is competitive in terms of both speed and quality. Xi and Latif's (2022) research demonstrated that in China, several news companies have begun applying AIGC technology to their workflows and have improved work efficiency. In the field of dubbing, high-quality AIGC voice dubbing for videos is well-accepted by college student audiences (Kit et al., 2023). Moreover, the GANs technology has been widely applied in fields such as film special effects and advertising production, enhancing both the efficiency and quality of content generation (Karras et al., 2020).

Given these global advancements, understanding the application of AIGC technology in specific contexts like Chinese broadcast media becomes increasingly important. This study aims to investigate the application and impact of AIGC technology in broadcast media content generation. Specifically, through empirical analysis, the study examines how AIGC technology enhances the efficiency and quality of content

generation in broadcast media and evaluates the acceptance of AI-generated content by companies. The significance of this study lies in its demonstration of the potential of AIGC technology in broadcast media, validating its effectiveness and providing practical insights and solutions for addressing specific challenges in the digital age. Additionally, the study enhances our understanding of how AIGC technology can be strategically integrated into traditional media workflows, offering a foundation for future research and development in both technological and theoretical domains, particularly within the framework of the Media Ecology Theory.

To achieve the research objectives, a qualitative research approach was adopted. First, a literature review was conducted to investigate the development and current application of AIGC technology in media content generation. This literature review also informed the construction of the semi-structured interviews. Following this, semi-structured interviews were conducted to gain in-depth insights into the attitudes, current status, and key challenges faced by broadcast media executives regarding AIGC technology. Specifically, the study focuses on the application and impact of AIGC technology in the daily work of broadcast media practitioners.

LITERATURE REVIEW

Application of AIGC in the broadcast media industry

The application of AIGC technology in news production has made significant progress. Studies demonstrate that AI technology, through natural language processing and machine learning, can automatically generate high-quality news content, significantly enhancing production efficiency and quality. Noain-Sánchez (2022) examined AI-generated news's impact on the global news industry, finding it competitive in both speed and quality. AI technologies have also improved advertising effectiveness by enabling real-time consumer behaviour analysis to generate personalised content (Kietzmann et al., 2018).

In broadcast media, AIGC technology application remains exploratory. Li (2023) found that AI technology significantly improves topic selection precision, content intelligence, and news dissemination accuracy. Hu et al. (2021) explored AI voice technology applications in broadcast and television media, noting significant enhancements in work efficiency and service quality.

In film production, AIGC technology supports multimodal content generation, greatly enhancing production efficiency and quality. Zhang (2024) observed that AI technology profoundly impacts various film production aspects, including screenwriting, illustration, voice acting, editing, and special effects, transforming both creative processes and artistic expression. AI technology has also achieved notable successes in virtual reality filmmaking and classic intellectual property remastering (Xie, 2023).

Despite AIGC technology's immense potential, its application faces significant challenges. Tandocjr et al. (2020) identified concerns that AIGC technology might diminish news audience cognitive abilities, reduce industry credibility, and exacerbate social and cultural biases. Noain-Sánchez (2022) emphasised ethical concerns arising from AI's news production efficiency enhancement. AI-generated content still requires human intervention to ensure authenticity and emotional expression (Zhang, 2024). This study investigates these challenges within Chinese broadcast media contexts.

Application of AIGC in China

China's AIGC technology development follows a unique path influenced by the "Great Firewall," which creates a distinct internet ecosystem significantly different from international environments (Zeng, 2020). This divergence influences China's technological development direction and shapes its unique technological application ecosystem.

China's AIGC development is heavily policy-driven. The New-Generation Artificial Intelligence Development Plan (2017) explicitly identifies artificial intelligence as a key economic driver and encourages widespread AI application across industries (Wu et al., 2020). Strong government support provides a solid foundation for rapid AIGC development, promoting broad applications in media, education, and finance.

Market demand from China's large, diverse consumer base further fuels AIGC development. Li et al. (2023) noted that Chinese consumers demonstrate high acceptance of personalised advertisements and content, prompting companies to invest more resources in AIGC research and application to enhance market competitiveness. China's rapidly developing digital media market increasingly applies AIGC technology in advertising, news, and film production, significantly improving content generation efficiency and quality (Wang, 2021; Zhu, 2021).

Cultural context profoundly influences AIGC application. Zhang and Zhang (2023) studied AIGC technology in Chinese film production, finding it not only accelerates content production but also alters traditional cultural production models. By integrating AI technology, China's film industry better incorporates traditional cultural elements while meeting modern audience aesthetic demands. Compared to Western countries, China emphasises greater cultural value inheritance and innovation in AIGC applications, offering new perspectives for global AIGC technology application.

However, China faces unique AIGC application challenges. Despite significant progress, AIGC technology in China confronts privacy protection, data security, and ethical concerns (Zeng, 2020). The authenticity and authority of AI-generated news content are particularly questioned, making efficiency-ethics balance crucial (Jiang et al., 2023). China's AIGC development is also affected by global technological blockades and international competition, adding uncertainty to future development (Li et al., 2023).

Existing literature suggests that studying China's AIGC application not only helps understand unique broadcast media practices but also provides new perspectives for global AIGC research. China's experience offers valuable references for other countries addressing social and cultural challenges posed by AIGC technology. Therefore, further research into China's AIGC application helps reveal its position in the global technological landscape and provides foundations for future international cooperation.

Theoretical framework

This study is grounded in the Media Ecology Theory, which provides a comprehensive framework for analysing how AIGC technology transforms the broadcast media ecosystem. Originally developed by Marshall McLuhan and refined by Neil Postman, this theory examines how communication technologies fundamentally reshape human interactions, societal structures, and media environments (McLuhan, 1994; Postman, 2006; Shao, 2008).

McLuhan's foundational concept that "the medium is the message" suggests that communication technologies' characteristics are more significant than their content in

shaping human perception and behaviour (McLuhan, 1994). Applied to AIGC technology, this principle indicates that AI systems' automation capabilities fundamentally alter not only what content is produced, but how content creators conceptualise and engage with creative processes themselves.

Building on McLuhan's insights, Postman (2006) examined how technological environments influence cultural values and cognitive patterns. His analysis of technology's role in shaping discourse and social interaction provides crucial insights for understanding how AIGC technology restructures traditional broadcast media practices and professional identities. This perspective helps explain the tension between efficiency gains and creative authenticity that emerges when AI systems become integral to content production workflows.

AIGC as media environment transformation

Through the Media Ecology Theory's lens, AIGC technology represents fundamental media environment transformation across multiple dimensions. This transformation manifests through: (1) restructuring traditional production workflows, (2) evolving professional roles and skills, and (3) redefining creative processes and quality standards (Epstein et al., 2023; Hutchins, 2024). Understanding these changes requires examining not merely what AIGC technology does, but how its presence fundamentally alters media production environments and internal relationships.

The theory's focus on environmental change provides valuable insights into how technological integration affects entire media ecosystems rather than isolated processes (Wilson & Shifflett, 2021). This perspective is particularly relevant for understanding AIGC implementation, as the technology's impact extends beyond efficiency improvements to influence fundamental aspects of media production culture.

Theoretical application to AIGC research

Previous research demonstrates the theory's effectiveness in examining AI integration in media contexts. Noain-Sánchez (2022) utilised media ecology concepts to examine AI integration in newsrooms, revealing how AI-driven processes redefine journalism by altering production workflows and professional responsibilities. This research highlights broader implications of integrating advanced technologies into established media ecosystems, demonstrating how such changes disrupt traditional practices and create new forms of professional interaction.

Building on this theoretical foundation, the present study applied the Media Ecology Theory to investigate AIGC technology's specific applications and impacts in Chinese broadcast media content generation. The theory's emphasis on environmental transformation provides a comprehensive framework for analysing how AIGC technology reshapes traditional media production practices, influences professional roles, and affects organisational cultures within the broadcast media industry.

This theoretical framework guides the investigation of a central research question: How is AIGC technology applied in the daily work of broadcast media practitioners, and what environmental transformations does this technology create within media organisations? Through semi-structured interviews with executives from two film and television companies, this research examined AIGC's ecological impact on Chinese

broadcast media environments, contributing to both theoretical understanding and practical knowledge of human-AI collaboration in creative media production.

RESEARCH METHODOLOGY

This study adopted a qualitative approach to examine how AIGC technology is applied in broadcast media content generation and the impacts it produces. A purposive sampling strategy was employed to select participants with direct, substantial experience in implementing AIGC systems in real-world media contexts. The criteria included:

- a. Company Type: Media firms with demonstrable integration of AIGC tools in content workflows;
- b. Company Size: Small to medium enterprises (SMEs), selected for their agility and willingness to experiment with innovative technologies;
- c. Position of Interviewees: Senior executives responsible for strategic, operational, or creative functions related to AIGC deployment.

Two companies meeting these criteria were selected, each nominating one executive with hands-on decision-making authority over AIGC adoption. While the sample size is intentionally small, the design aligns with exploratory case study methodology, prioritising depth and contextual specificity over statistical generalisability (Lobe et al., 2022). The basic profiles of the selected companies are summarised in Table 1.

Table 1. Company profiles of the two case studies

Sample Company	Company Location	Founded	Main Business	AIGC Applications
Company A	Chengdu China	2018	Film & TV production, advertising creative & content marketing	AIGC technology is applied in content generation, especially video editing and advertising with notable results.
Company B	Shenzhen China	2020	Short video production, web series production and multimedia promotion	Uses AIGC technology extensively in content generation, particularly in scriptwriting and video production.

The corresponding background of the interviewees is shown in Table 2.

Table 2. Interviewee background and roles

Code	Company	Job Title	Job Responsibilities	Area of Expertise	AIGC Experience
RA	Company A	Content Creative Director	Content creative and generation work	Advertising creative and video editing	In-depth knowledge of the application of AIGC technology and its extensive use in practice.
RB	Company B	Technical Director	Content output and management	Scriptwriting and video creativity	Strong knowledge of the technology and application of AIGC technology and driving the adoption of the technology within the company

The two interviewees, designated as RA and RB, participated in 90-minute semi-structured interviews that yielded rich, experience-based narratives. This approach reflects established qualitative research practice, where expert informants provide comprehensive organisational insights (Braun & Clarke, 2006). The narrow sample was counterbalanced by the participants' high-level positions and first-hand exposure to the full life cycle of AIGC implementation, from strategy development to execution.

Despite the limited sample size, data saturation was achieved through careful monitoring of emergent themes during and after interviews. Following Braun and Clarke's (2006) thematic analysis protocol, no new categories or concepts emerged after coding both transcripts. Saturation was further supported by thematic convergence in three core domains: (1) operational efficiency gains, (2) content quality effects, and (3) implementation barriers. The clarity and consistency of themes across interviews justified the cessation of data collection.

Several strategies were employed to enhance credibility and trustworthiness of data (Creswell & Poth, 2023; Lincoln & Guba, 1985), including member checking, intercoder agreement, and context-rich documentation (Yin, 2014). While full triangulation was limited, these methods are consistent with best practices in qualitative inquiry (Silverman, 2011).

Ethical considerations

All participants were:

- a. Informed of the study's aims, procedures, and their rights, including withdrawal without consequence.
- b. Provided with assurances of anonymity and confidentiality, with organisations labelled as Company A and B, and individuals as RA and RB.
- c. Interviewed voluntarily without compensation to avoid potential influence on responses.
- d. Made aware of how data would be stored, used, and deleted post-study.

All interviews were conducted remotely between mid- and late July 2024 and were recorded, transcribed, and securely stored.

Data collection and analysis

Interviews were conducted online and transcribed verbatim (Lobe et al., 2022; Oates et al., 2022). The original Chinese transcripts were translated into English by two professional language editors. Thematic analysis (Braun & Clarke, 2006) was employed to identify patterns across interviews, structured around four central themes: (1) specific applications of AIGC, (2) efficiency and cost impact, (3) content quality transformation, and (4) organisational and technological challenges.

These themes were subsequently interpreted through the lens of the Media Ecology Theory, enabling identification of systemic changes in media environments shaped by AIGC technology.

The purposive selection of two companies and senior executives with direct AIGC implementation experience ensures data quality and relevance. While this approach limits broad generalisation, it provides valuable insights into early-stage AIGC adoption patterns within the Chinese broadcast media context. The study's limitations and broader applicability are discussed in the conclusion.

RESULTS

Based on semi-structured interviews with executives from two representative Chinese media firms, this section presents thematic findings on AIGC's applications, benefits, and challenges in broadcast content production. Four primary themes emerged from the analysis: specific applications, efficiency impacts, quality effects, and implementation challenges.

Specific applications of AIGC technology

The study identified two major AIGC application domains in broadcast media: (1) automating technical production tasks such as 3D modelling and video editing, and (2) supporting early-stage creative ideation, particularly in short video scripting.

In 3D modelling, Respondent A (RA) reported significant improvements:

AIGC technology has significantly improved content generation efficiency, particularly in the process of converting 2D designs into 3D models.

RA explained that 3D asset creation time decreased from weeks to days, with AIGC-assisted tools enabling rapid generation of multiple visual directions during video editing:

With AIGC technology, we can quickly complete the first video editing, which not only saves substantial time and costs but also reduces trial-and-error expenses.

For script development, Respondent B (RB) emphasised widespread application in short video production:

AIGC technology is widely applied in short video scriptwriting and creative generation, significantly enhancing work efficiency.

These findings indicate that AIGC functions as a rapid ideation partner rather than a replacement tool, requiring human oversight for contextualisation and creative refinement.

Impact on content generation efficiency

Both respondents reported substantial efficiency improvements across technical and creative workflows, with measurable reductions in production time and labour costs.

In 3D modelling, RA estimated approximately 50% efficiency improvement:

AIGC technology has improved content generation efficiency by approximately 50%, particularly in the early stages of 3D modeling, where the savings in time and costs are most evident.

RA explained the transformation in production timelines:

With AIGC technology, we can accomplish in a few days what would traditionally take weeks, improving efficiency and reducing overall project costs.

For creative drafting, RB noted similar gains:

AIGC technology has drastically shortened work time, especially in generating initial drafts and creative images.

However, both respondents emphasised continued human intervention requirements:

The final details and accuracy still require manual intervention for optimization.
(RB)

These findings reveal AIGC's role as a productivity enhancer rather than complete automation solution, requiring ongoing human expertise for quality control and creative refinement.

Impact on content quality

Interviews revealed that AIGC significantly improves technical quality aspects—particularly detail refinement and material texture—while remaining limited in creativity, emotional nuance, and personalisation.

RA observed superior technical performance:

AIGC-generated content surpasses human creation in detail refinement and material texture, especially in the detailed 3D rendering handling.

Client acceptance was generally positive, with AI-generated visual output often indistinguishable from human-designed materials:

Clients usually cannot tell whether the content was AI-generated. However, the creative aspects still require our design adjustments based on client needs.
(RA)

Text generation showed more pronounced limitations. RB emphasised structural strengths but creative weaknesses:

AIGC-generated text is very structured and logical, but it lacks flexibility and creativity[...] The scripts perform poorly in emotional and personalized aspects, requiring manual revisions to ensure the content meets expectations.

These findings suggest AIGC excels in technical precision but requires human intervention for creative authenticity and emotional resonance.

Implementation challenges

Both interviewees identified persistent challenges spanning technical, organisational, and ethical dimensions that hinder broader AIGC integration.

RA emphasised workflow complexity and copyright concerns:

The complexity of workflow modeling negatively impacts the efficiency and quality of content generation, particularly when generating fixed content[...] Additionally, AIGC technology faces challenges in copyright protection, requiring secondary optimization to ensure the legality and consistency of content.

RA also noted content repetition issues:

We have noticed some redundancy in creativity. By improving the training of large model libraries, we hope to reduce these issues and increase content diversity.

RB highlighted human capital challenges:

AIGC technology's efficiency in generating complex creative projects is relatively low, still requiring considerable time for adjustments and optimization[...] to fully realize this potential, a more comprehensive training and education system is needed.

These challenges indicate that successful AIGC implementation requires comprehensive organisational adaptation beyond simple technology adoption, including workflow restructuring, legal framework development, and workforce capability enhancement.

The analysis reveals that AIGC technology offers significant efficiency improvements (up to 50% in specific applications) while maintaining high technical quality standards. However, successful implementation requires strategic human-AI collaboration, with humans maintaining essential roles in creative conceptualisation, quality control, and contextual adaptation. The technology functions as an enhancement tool rather than a replacement solution, necessitating comprehensive organisational transformation for optimal integration.

DISCUSSION

This study investigated the application and impact of AIGC technology in broadcast media content generation through semi-structured interviews with key executives from two Chinese film and television media companies. Through thematic analysis employing a rigorous three-stage coding process, this research reveals how AIGC technology fundamentally transforms media production ecosystems while exposing persistent challenges in creative authenticity and workflow complexity.

The thematic analysis utilised a systematic three-stage coding process: initial open coding identified 47 preliminary concepts, focused coding refined these into 12 thematic

categories, and theoretical coding established relationships with the Media Ecology Theory concepts, resulting in four primary themes. This systematic approach ensured that findings represent robust analytical insights rather than mere participant commentary.

This study advances the Media Ecology Theory by demonstrating how AIGC technology represents a new media environment that fundamentally alters production ecosystems. The research reveals three critical dimensions of ecological transformation: Environmental Restructuring, which creates hybrid production environments where human workflows integrate with AI processes; Cognitive Reframing, requiring practitioners to develop new frameworks for collaborative optimisation; and Cultural Redefinition, triggering a fundamental redefinition of professional values and quality standards. These dimensions extend the Media Ecology Theory by emphasising how AI-generated content introduces non-human agency into media environments, reinforcing recent insights from Strate (2017), Wilson and Shifflett (2021) as well as Hutchins (2024) on the evolving nature of media ecosystems in algorithmic societies.

Critical analysis of efficiency and quality dynamics

The study reveals complex transformation patterns extending beyond simple productivity improvements. AIGC technology creates what we term “efficiency paradoxes”—situations where apparent efficiency gains mask underlying increases in workflow complexity (Brynjolfsson et al., 2021; Saghafian et al., 2021). While AIGC improved 3D rendering efficiency by approximately 50% and significantly reduced scriptwriting time from hours to minutes, it simultaneously introduced increased complexity in workflow planning and quality control processes. This finding challenges linear efficiency assumptions from AI integration, consistent with Brynjolfsson et al.’s (2021) productivity J-curve theory.

The cost reduction benefits identified in this study are substantial. Both companies reported significant reductions in human resource investment and project timelines, with traditional modelling processes that previously required several weeks now completed within days. These findings validate the economic potential of AIGC technology while highlighting the need for strategic implementation approaches.

Regarding content quality, the analysis reveals a fundamental tension between technical quality enhancement and creative authenticity. AIGC demonstrates superior technical precision in material texture and detail refinement, with client satisfaction rates indicating that most users cannot distinguish AI-generated content from human-created work. However, the technology creates authenticity challenges where AI-generated content fails to achieve the contextual appropriateness and emotional resonance required in professional media production (Hancock et al., 2020). This necessitates new evaluative frameworks that balance technical capability with creative appropriateness, consistent with findings from recent media studies research on AI-mediated communication challenges (Simon, 2025).

Implementation challenges and novel contributions

The research identifies two critical implementation challenges that extend beyond existing literature: workflow complexity and content duplication issues. AIGC implementation requires sophisticated workflow modelling that often exceed traditional production workflow complexity (Deloitte AI Institute, 2024; Singla et al, 2025). According to recent enterprise surveys, 78% of organisations report that AI implementation involves

substantial organisational transformation beyond simple technology integration, with workflow modelling representing one of the primary barriers to successful deployment (IBM, 2025).

The study also identified a phenomenon where AIGC systems produce technically distinct but conceptually similar outputs, creating subtle creative limitations that may compromise content diversity over time. This content duplication challenge reflects broader concerns in the AI research community about the risk of AI-generated content becoming increasingly homogeneous as systems train on similar datasets (Nalgiev, 2023; Wu et al., 2025). Recent research demonstrates that AI-generated content often lacks the originality and unique perspectives that characterise human creativity, leading to what scholars term “creative convergence” in AI outputs (SmythOS, 2024).

Additionally, the study reveals ongoing challenges in copyright protection and intellectual property management. Both companies emphasised the need for secondary optimization to ensure content legality and consistency, highlighting the complex legal landscape surrounding AI-generated content in the Chinese broadcast media context.

Comparison with previous research and theoretical contributions

Compared to prior research, this study validates certain efficiency advantages while revealing previously unexplored complexity patterns. Unlike Li (2023), who focused primarily on operational enhancements in news production, this research reveals the hidden costs of AIGC adoption, including substantial planning investment and specialised quality assessment protocol development. The findings align with foundational scholarship on technological adaptation in journalism organisations, which emphasises the complex interplay between human actors, technological systems, and organisational cultures (Carlson, 2015; Lewis & Westlund, 2015; TandocJr et al., 2020).

The study’s unique contribution lies in revealing the ecological nature of AIGC integration within Chinese broadcast media, demonstrating that successful implementation requires comprehensive organisational transformation rather than simple technology adoption. This finding is consistent with contemporary research on AI governance and implementation challenges (Kacker, 2024) while providing specific insights into the Chinese media context.

The high user acceptance rates identified in this study, where clients generally cannot distinguish AI-generated content from human-created work, represent a significant finding that extends previous research on AI content perception. This suggests that quality concerns may be less significant barriers to adoption than previously assumed, shifting focus toward workflow optimisation and creative enhancement challenges.

Future research directions

Future research should expand sample sizes and incorporate diverse methodological approaches. Mixed-methods studies combining quantitative surveys with qualitative interviews could provide more comprehensive understanding of AIGC adoption patterns across different organisational contexts (Mariani et al., 2022; Przegalinska et al., 2025). Additionally, longitudinal studies tracking AIGC implementation over extended periods would reveal long-term adaptation patterns and sustainability of efficiency improvements.

Ongoing attention is needed for ethical and legal issues surrounding AIGC technology, particularly copyright protection, data privacy, and content authenticity.

Future studies should propose and evaluate effective governance frameworks ensuring AIGC applications remain legally compliant and socially acceptable (Kacker, 2024; Roberts et al., 2019). Cross-cultural comparative studies examining AIGC implementation in different regulatory and cultural contexts would enhance understanding of technology adaptation patterns globally.

CONCLUSION

Through the systematic analysis of semi-structured interviews with key executives from two Chinese film and television media companies, this study contributes to understanding AIGC technology's transformative impact on broadcast media content generation. The research advances both theoretical knowledge and practical understanding of human-AI collaboration in creative media production contexts, providing empirically grounded insights into the complex dynamics of technological integration in traditional media industries.

Key findings and theoretical contributions

- a. **Extension of the Media Ecology Theory:** The research demonstrates how AIGC technology functions as a new media environment that fundamentally transforms production ecosystems. This study reveals AIGC as an environmental force that reshapes professional practices, organisational structures, and creative processes, extending beyond instrumental perspectives to encompass comprehensive ecological transformation.
- b. **Conceptualisation of Efficiency Paradoxes:** The study identifies and theorises “efficiency paradoxes” in AIGC implementation, situations where apparent productivity gains mask underlying complexity increases. This contributes a new understanding of how advanced technologies create non-linear transformation patterns requiring comprehensive organisational adaptation rather than simple technology substitution.
- c. **Human-AI Creative Collaboration Framework:** The research develops a nuanced understanding of quality dynamics in human-AI collaboration, identifying specific domains where AI excels (technical precision and consistency) versus areas requiring human intervention (contextual appropriateness and emotional resonance). This framework provides practical guidance for optimising human-AI creative partnerships.
- d. **Comprehensive Efficiency Analysis:** While confirming AIGC's potential for significant efficiency improvements, including 50% gains in 3D rendering and substantial reductions in scriptwriting time, the research reveals hidden complexity costs in workflow modelling and quality control processes. This challenges assumptions about universal efficiency benefits and provides realistic expectations for organisations considering AIGC adoption.

Theoretical and practical significance

This study contributes to the growing body of research on AI in media and communication by providing theoretically grounded, empirically supported insights into AIGC

technology's role in transforming creative production processes. The research bridges the gap between technological capability and organisational implementation, offering a realistic assessment of both opportunities and challenges associated with AIGC adoption in broadcast media contexts.

The findings have important implications for broadcast media practitioners and organisations considering AIGC implementation. The research suggests that successful AIGC adoption requires strategic planning that addresses not only technical integration but also workflow restructuring, staff training, and cultural adaptation. Organisations should approach AIGC implementation as a comprehensive transformation process rather than simple technology adoption, recognising the ecological nature of change required for successful integration.

Research applicability and scope limitations

The findings of this exploratory study should be interpreted within specific contextual boundaries. The research insights are most directly applicable to small-to-medium Chinese film and television companies operating within China's unique digital and regulatory ecosystem. The identified efficiency gains, implementation challenges, and efficiency paradoxes reflect early-stage AIGC deployment experiences captured during July 2024 and may not translate directly to:

- a. Large media conglomerates or different organisational scales
- b. Other broadcast media sectors (news, radio, digital-only platforms)
- c. Different geographic/regulatory contexts outside China
- d. More mature AIGC implementations or future technological versions
- e. Organisations with different risk tolerance or innovation capabilities

These findings should serve as exploratory insights and reference points rather than definitive implementation blueprints. Each organisation's specific context, resources, and strategic objectives will significantly influence their AIGC adoption experience. Future validation through larger-scale, cross-sector, and longitudinal studies is necessary to establish broader applicability and confirm these preliminary findings across diverse organisational and technological contexts.

Recommendations

Based on the study's findings, three key recommendations emerge for broadcast media organizations considering AIGC implementation:

- a. **Strategic AIGC Integration:** Organisations should establish dedicated AIGC technology teams to oversee comprehensive implementation strategies that address technical, workflow, and cultural adaptation requirements. These teams should focus on developing specialised protocols for human-AI collaboration, as suggested by Huang et al. (2023), who emphasise the importance of structured approaches to managing complex transitions from traditional to hybrid production environments in media organisations.
- b. **Comprehensive Training and Development:** Companies should implement systematic training programs that enhance practitioners' understanding of AIGC technology capabilities and limitations. Such programs should address both technical competencies and creative collaboration skills necessary for effective human-AI partnerships in content generation contexts, reflecting the competency frameworks

outlined by Fieiras-Ceide et al. (2022) in their analysis of European broadcaster practices and technological adaptation strategies.

- c. **Ethical and Legal Framework Development:** Organisations must proactively address ethical and legal challenges associated with AIGC implementation, particularly concerning copyright protection, data privacy, and content authenticity. This recommendation aligns with concerns raised by Wu et al. (2025) regarding content authenticity and regulatory preparedness in AI-driven media production. Organisations should develop clear policies for intellectual property management and ensure compliance with evolving regulatory frameworks governing AI-generated content.

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Statement of ethics

Permission to conduct the interviews for the purposes of this research was obtained by all respondents, who were fully informed about the purposes of this research and how their responses would be used and stored. All interviewees have been anonymised.

A statement of generative AI and AI-assisted technologies in the writing process

During the preparation of this paper, the author used ChatGPT to enhance readability and language quality. The author has reviewed and edited the content of the paper and takes full responsibility for its publication.

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