

Impact of Virtual Anchors on the Broadcasting and Hosting Industry in the New Media Environment (Postprint)

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Date: 2025-07-09T15:41:31+00:00

Abstract

Objective: To investigate the impact of virtual anchors on the broadcasting and hosting industry in the new media environment, analyzing their advantages and disadvantages as well as future development trends.

Methods: Through literature review, this study examines the development history of virtual anchors and compares the advantages and disadvantages between virtual anchors and traditional broadcasters and hosts.

Results: The study finds that virtual anchors have significant advantages in reducing labor costs, improving production efficiency, enabling round-the-clock services, and optimizing error prevention. However, they also have disadvantages such as poor interactivity, limited emotional expression, insufficient recognition, and high technical barriers in production.

Conclusion: In the new media environment, virtual anchors and traditional broadcasters/hosts will show a trend of integrated symbiosis. In the future, through deepening comprehensive competencies, promoting diversified development, upholding the advantages of traditional media, and embracing human-machine collaboration, harmonious co-prosperity can be achieved, jointly promoting the prosperous development of the broadcasting and hosting industry.

Full Text

Preamble

Title: Research on the Impact of Virtual Anchors on the Broadcasting and Hosting Industry in the New Media Environment

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Abstract

Objective: To explore the impact of virtual anchors on the broadcasting and hosting industry in the new media environment, analyzing their advantages, disadvantages, and future development trends.

Method: Through literature review, this study examines the development trajectory of virtual anchors and compares their strengths and weaknesses with those of traditional broadcasters and hosts.

Results: The study reveals that virtual anchors offer significant advantages in reducing labor costs, enhancing production efficiency, enabling round-the-clock service, and optimizing error prevention. However, they also suffer from drawbacks such as weak interactivity, limited emotional expression, insufficient public recognition, and high technical barriers to production.

Conclusion: In the new media environment, virtual anchors and traditional broadcasters will exhibit a trend of integrated coexistence. Through deepening comprehensive competencies, promoting diversified development, upholding the strengths of traditional media, and embracing human-machine collaboration, harmonious prosperity can be achieved, jointly advancing the flourishing development of the broadcasting and hosting industry.

Keywords: new media; virtual anchor; broadcasting and hosting; integrated coexistence; industry impact

Chinese Library Classification: G222.2

Document Code: A

Article No.: 1671-0134(2025)03-146-04

DOI: 10.19483/j.cnki.11-4653/n.2025.03.032

Citation Format: Song Xiangyi. Research on the impact of virtual anchors on the broadcasting and hosting industry in the new media environment [J]. China Media Technology, 2025, 32(3): 146-149.

Introduction

The proliferation of new media has brought unprecedented transformation to the broadcasting and hosting industry, with the emergence of virtual anchors proving particularly noteworthy. As a product of highly integrated digital technologies, virtual anchors not only transcend the boundaries of traditional media but also demonstrate unique advantages across multiple domains [1]. This study delves into the current applications, strengths, and weaknesses of virtual anchors in the broadcasting and hosting industry, while analyzing their impact on the sector's future development.

1. Development of Virtual Anchors in the New Media Environment

In the new media environment, virtual anchors—simulated human figures powered by advanced algorithms and graphics rendering technologies—have gradually emerged as a novel force in cross-media communication. They transcend traditional media boundaries, enabling seamless interaction across television

broadcasting, internet platforms, and even virtual reality spaces. Moreover, they have distinguished themselves in diverse scenarios such as technology exhibitions and large-scale events, pioneering new modes of audience engagement through their distinctive futuristic interactive experiences.

The world's first virtual anchor, Ananova, was launched in 2000 by the British news agency Press Association (PA), marking the formal advent of virtual anchor technology in the broadcasting and hosting industry [2]. During the same period, China also embarked on active exploration in this field, with the creation of Yan Dongfang serving as a landmark achievement. Yan Dongfang's robust and slightly mixed-heritage visual design, though initially limited by technology to only facial expressions synchronized with speech and reliance on external voice dubbing, inaugurated the development of virtual anchor technology in China.

Since 2000, the rapid global advancement of virtual human technologies has prompted China's National Radio and Television Administration to respond proactively to this trend, explicitly incorporating new media forms such as virtual anchors into its development strategy and continuously promoting related technological research and applications. In recent years, virtual anchors including "Chang Xiaojiao," "AI Wangguan," "Xin Xiaowei," "Xiao Yang" from Hunan TV's variety shows, and "Xiao Xiaosa" and "Zhu Xiaoxun" from the 2019 Spring Festival Gala have frequently appeared in major events ranging from news reporting and Two Sessions live broadcasts to variety shows and the Spring Festival Gala. Their highly realistic interactive capabilities and personalized image designs have garnered widespread social attention, further advancing the deep application of virtual anchor technology in the broadcasting and hosting industry [3].

2. Advantages and Disadvantages of Virtual Anchors in the Broadcasting and Hosting Industry in the New Media Environment

2.1 Comparative Analysis of Advantages

2.1.1 Reducing Labor Costs and Enhancing Production Efficiency

Compared with traditional broadcasting and hosting, virtual anchors eliminate conventional human resource expenses such as salaries and insurance, substantially reducing operational costs. Their high-efficiency operation enables 24/7 uninterrupted work, effectively minimizing staffing requirements [4]. Furthermore, virtual anchors can be rapidly replicated to easily accommodate multi-platform, large-scale application demands, thereby further enhancing content production efficiency. They exhibit remarkable consistency in appearance and voice control, reducing the need for backup personnel due to anchor performance fluctuations. Standardized production workflows further lower labor costs, while their ability to automatically execute routine tasks significantly improves work efficiency.

2.1.2 Eliminating Fatigue and Enabling Round-the-Clock Service

Their fatigue-free nature ensures uninterrupted 24-hour service capacity, completely breaking through the physical limitations that prevent traditional broadcasters from providing continuous service. Virtual anchors can transcend time zone boundaries to deliver synchronized global services, vastly expanding their service scope [5]. During off-peak hours and holidays, they maintain stable operation, effectively alleviating service disruptions caused by staffing challenges faced by traditional broadcasters. In emergencies, virtual anchors can respond swiftly and go live immediately, demonstrating exceptional flexibility.

2.1.3 Shaping Unified Images and Strengthening Brand Effects

Virtual anchors offer precise controllability over image, voice quality, and speech rate, completely eliminating subjective deviations. By establishing unified appearance standards—including facial features, hairstyles, and attire—and adjusting vocal parameters such as speed, intonation, and timbre, they achieve highly consistent imaging that effectively strengthens brand recognition. When audiences encounter the same virtual figure repeatedly, they gradually form clear brand associations that deepen brand impressions. Moreover, the absence of unstable factors such as health or emotional issues that traditional broadcasters may face allows virtual anchors to maintain consistent performance, providing stable visual identifiers for brand communication while endowing them with unique appeal.

2.1.4 Optimizing Error Prevention and Enhancing System Stability

The high stability and low error rate of virtual anchors stem from their continuously optimized knowledge graphs. Through iterative machine learning algorithms, their knowledge bases are dynamically updated, ensuring rapid responses to various questions and substantially reducing errors caused by knowledge gaps. At the system design level, all virtual anchors follow unified response logic, which not only guarantees consistent service quality but also avoids performance fluctuations due to individual differences. In contrast, traditional broadcasters facing complex issues may be influenced by multiple factors such as reaction speed, on-the-spot performance, and personal experience, leading to unstable error rates.

2.2 Comparative Analysis of Disadvantages

2.2.1 Weak Interactivity and Difficulty Achieving Deep Emotional Exchange

Although virtual anchors stand out through highly sophisticated speech synthesis and semantic parsing technologies, their essence remains algorithm-driven rather than genuinely intelligent entities. This fundamentally limits their interactive capabilities, causing rigidity in complex and dynamic conversational scenarios where they struggle to flexibly handle unscripted situations. They also demonstrate insufficient mastery of pragmatic nuances, showing weak comprehension of deeper meanings such as metaphors and puns

in language. More critically, emotion—the soul of human communication—remains conspicuously absent in virtual anchor interactions [6]. Lacking authentic emotional experiences, their linguistic output becomes monotonous and dull, devoid of the warmth and emotional resonance inherent in human exchange.

2.2.2 Constrained Emotional Expression and Lack of Genuine Emotional Resonance Despite achieving highly realistic visual representation, virtual anchors' emotional expression is constrained by preset programming, making it difficult to present diverse variations in tone and facial expression. This results in insufficient affinity and an inability to touch audiences' hearts with genuine emotional resonance. In contrast, traditional broadcasters demonstrate unparalleled advantages through their unique emotional communication abilities, keen sensitivity in atmosphere creation, and wisdom in flexibly handling various situations. Furthermore, users easily develop aesthetic fatigue when confronted with uniform virtual appearances, necessitating customized designs that incorporate personalized elements to enhance appeal—a process that requires significant additional effort and resources.

2.2.3 Insufficient Public Recognition and Market Acceptance Despite the rapid development of virtual anchor technology and its increasingly widespread application in the media field, both the technology and its derivative form—the virtual anchor—remain novel concepts for the general public. Public understanding of virtual anchors' definition, technical principles, application scenarios, and distinctions from traditional broadcasters is limited, primarily because the technology is still in its infancy, lacks widespread adoption, and suffers from insufficient popular science communication and reporting [7]. In this context, public attitudes toward virtual anchors are characterized by a mixture of novelty and confusion, lacking deeper comprehension and recognition.

2.2.4 High Technical Requirements and Stringent Entry Barriers Current virtual anchor production technology is highly specialized, involving deep integration of multiple disciplines including, but not limited to, 3D modeling, rendering technology, animation design, speech synthesis, and dialogue system construction [8]. Each step requires substantial time and effort from professional teams. Additionally, high-quality voice synthesis depends not only on extensive voice sample libraries but also on professional-grade recording equipment to capture subtle emotional variations. Furthermore, AI algorithms for building intelligent interactive systems impose stringent demands on technical capabilities and algorithmic optimization, keeping commercial application thresholds prohibitively high.

3. Impact of Virtual Anchors on the Broadcasting and Hosting Industry in the New Media Environment

3.1 Reshaping Industry Structure

Based on the above analysis, the impact of virtual anchors on the broadcasting and hosting industry is manifested in several key aspects. The notion that “virtual anchors will replace traditional hosts” essentially represents a misunderstanding of evolving industry division of labor under technological transformation. In the new context of human-machine symbiosis, this issue should be reframed as collaborative cooperation between artificial intelligence and human wisdom in the broadcasting and hosting domain. As AI technology continues to mature, virtual anchors will demonstrate unique advantages surpassing human anchors in specific areas, such as 24/7 operation, efficient data processing capabilities, and precise content delivery. However, this does not imply complete replacement of human anchors; rather, the two will form complementary relationships across different dimensions, jointly driving the diversified development of the industry.

3.2 Leading the Rise of Dialogic Journalism

The journalism industry exhibits extreme sensitivity to emerging technologies. With the rise of VR (Virtual Reality) and AR (Augmented Reality), it was recognized that these technologies had significantly transformed news content formats, dissemination methods, and audience experiences. Such technologies not only provide richer immersive experiences for news reporting but also facilitate a shift in journalism philosophy from the traditional “I-It” (subject-object opposition) relationship to “I-Thou” (subject-object integration) dialogic journalism [9]. In this transformation, virtual anchors, with their unique interactivity and instant feedback capabilities, have become a crucial force driving the rise of dialogic journalism. Additionally, the emergence of the “metaverse” concept has further accelerated the diversified integration of news media. As key elements in metaverse-based news communication, virtual anchors have expanded their roles beyond traditional broadcasting and hosting into content creation, community management, brand endorsement, and other multidimensional functions. Against this backdrop, dialogic journalism is no longer confined to conventional Q&A formats but instead achieves deep interaction with audiences through VR, AR, and other technological means, thereby constructing more intimate and authentic news communication relationships.

3.3 Influencing Information Acquisition Paradigms

Against the backdrop of the information explosion, audience information acquisition has evolved from the “information waiting for people” model of early portal websites, to the “people searching for information” model of search engines, and then to algorithm-driven “information feeding.” Each technological revolution has profoundly transformed people’s information consumption habits.

Today, with the rapid development of artificial intelligence technology, particularly the widespread adoption of generative AI applications like ChatGPT, the interaction between humans and information is gradually shifting toward a direct dialogue model that “bypasses intermediaries” [10]. In the future, virtual anchors will become a key variable reshaping the information communication landscape. They will not only deliver precisely targeted information based on users’ personalized needs but also achieve deep dialogue and emotional exchange with users through advanced technologies such as natural language processing and emotion recognition. This new information acquisition paradigm not only enhances dissemination efficiency but also substantially enriches users’ information experiences. For the journalism industry, keeping pace with the evolution of human information paradigms and actively deploying virtual anchors has become an irreversible trend. By integrating cutting-edge technologies including AI, big data analytics, and cloud computing to construct a new information dissemination system centered on virtual anchors, the industry can not only satisfy users’ growing demands for diversified and personalized information but also secure a competitive advantage in the fierce market, achieving sustainable development.

4. Integration of Virtual Anchors and Traditional Broadcasters in the New Media Environment

4.1 Deepening Comprehensive Competencies and Shaping Distinctive Personified Communication

In the new media environment, the role of broadcasters has quietly transformed; they are no longer merely information transmitters but also shapers of program soul and vivid interpreters of “personified” content. To achieve harmonious co-existence between virtual anchors and traditional broadcasters, the strengths of traditional broadcasters should be leveraged to cultivate distinct personalities from multiple dimensions and deep levels. On one hand, broadcasters should focus on constructing multidimensional knowledge systems, not confining themselves to professional expertise but extensively exploring diverse fields such as literature, art, history, and science and technology. This rich knowledge foundation enables more substantial and profound hosting content. Simultaneously, they must strengthen emotional cultivation, developing delicate and sensitive emotional sensibilities to express themselves sincerely on camera, infusing every expression with warmth and power. On the other hand, the core of enhanced personified communication lies in the power of “humanity.” Broadcasters should continuously refine their language skills—employing appropriate rhetoric, mastering variations in speech rate and intonation, and accurately capturing and expressing emotional details—to make language a bridge connecting themselves with audiences, conveying information while touching hearts [11]. They should also deeply explore their own characteristics, organically integrating personal emotions, values, and program content to enable audiences to achieve psychological resonance while receiving information.

4.2 Promoting Diversified Development and Self-Reinvention in the New Media Era

The emergence of virtual anchors may partially replace the foundational technical and content-related work of traditional broadcasters, but deep emotional interpretation still requires human hosts. Promoting diversified development and achieving self-reinvention represents an unavoidable imperative for broadcasters in the new era—one that not only expands individual capability boundaries but also actively responds to industry development trends. First, broadcasters should maintain a continuous learning mindset and actively adapt to cross-disciplinary integration. Beyond consolidating fundamental skills such as voice shaping and language expression, they should extensively explore multidisciplinary knowledge in journalism, psychology, sociology, and other fields to enhance program depth. They must enthusiastically embrace new media technologies including short video production, live streaming interaction, and big data analytics, transforming technological advantages into drivers of content innovation. Through cross-disciplinary collaboration with artists, technology experts, and other professionals, they can inject fresh vitality into programs and broaden audience demographics.

Second, broadcasters should strengthen brand awareness and actively cultivate personalized labels. In an era of increasingly severe content homogenization, building personal brands and establishing unique hosting styles is particularly crucial [12]. Broadcasters need to deeply understand market trends and audience psychology, combining their own strengths to form distinctive personal labels. Through social media platforms, they should enhance fan interaction by sharing life moments and work reflections, narrowing the distance with audiences and building solid fan communities. Simultaneously, broadcasters should cultivate innovative thinking and actively pursue creative practices. In the new media age, innovation is the primary driver of development. Broadcasters must be bold in experimenting with new program formats and expression methods such as immersive experiences and interactive Q&A sessions to satisfy audiences' growing diversification demands. They should foster an innovative atmosphere within their teams, establishing mechanisms for rapid market response to ensure program content remains fresh.

Finally, broadcasters should strengthen social responsibility and implement humanistic care. As public figures, broadcasters should assume corresponding social responsibilities while transmitting information, disseminating positive energy and promoting core socialist values. By integrating humanistic care elements into programs, focusing on social hotspots and livelihood issues, and using warm words and sincere emotions to guide audience thinking and stimulate resonance, they can contribute to building a harmonious society.

4.3 Upholding Traditional Media Strengths and Deepening Program Ideological Content

The emergence of virtual anchors does not represent a subversion of traditional media but rather its innovation. Throughout this innovative process, it is essential to adhere to the principle of “upholding integrity” by maintaining traditional media strengths and delving deeply into program ideological content. Amid the information deluge of the new media environment, broadcasters should serve as a solid defense line for information screening and verification. They must uphold the supreme principles of journalistic ethics and adhere to the bottom line of authenticity, ensuring the accuracy of every piece of information through multi-channel verification and in-depth field interviews, thereby safeguarding media credibility and taking responsibility for audiences. In content creation, broadcasters need to excavate the multidimensional value of news events, transcending superficial noise to reach the core of issues [13]. They should possess keen insight capable of unraveling complex appearances to reveal the deep logic and social significance behind events. Moreover, they must emphasize humanistic care, depicting human stories with delicate emotional brushstrokes that showcase the brilliance of humanity, making narratives vivid and resonant for audiences.

4.4 Embracing Human-Machine Collaboration to Create a New Hosting Ecosystem

Virtual anchors and traditional broadcasters in the new media era should not stand as opposing forces but rather function as an integrated whole, jointly committed to the healthy development of the broadcasting and hosting industry. Therefore, traditional broadcasters should actively embrace human-machine collaboration. First, they should enthusiastically embrace technological innovation, viewing virtual anchors as both “competitors and collaborators” in their work. By deeply understanding virtual anchors’ operational mechanisms, broadcasters can strategically optimize their own workflows, utilizing AI assistance for data collection and initial drafting to free up more energy for in-depth content exploration [14]. Second, they should explore diverse application scenarios for human-machine collaboration. In fields such as news broadcasting, entertainment, and sports events, combining virtual anchors’ technical strengths with broadcasters’ emotional intelligence can create more innovative program formats. For example, introducing virtual anchors for real-time data analysis during live broadcasts while human hosts interpret the stories behind the data creates complementary advantages that enhance audience experience. Finally, they should build a composite talent pool for human-machine collaboration. Traditional broadcasters should work closely with technical personnel to jointly explore new models and methods for human-machine symbiosis [15]. They should focus on cultivating young hosts’ technological literacy and innovative capabilities, encouraging them to bravely experiment with new technologies and tools to inject fresh vitality into their teams.

Conclusion

In summary, virtual anchors in the new media environment, with their unique advantages, are gradually becoming a significant force in the broadcasting and hosting industry. However, their development also faces numerous challenges. In the future, through the integrated coexistence of traditional broadcasters and virtual anchors, the strengths of both can be fully leveraged to jointly drive innovative development in the industry. In the new context of human-machine collaboration, the broadcasting and hosting industry will embrace broader development prospects, providing audiences with higher-quality and more efficient audio-visual experiences.

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

Source: ChinaXiv —Machine translation. Verify with original.