Postprint: Exploring Media Convergence Under Technological Updates

Authors: Ma Songlin

Date: 2023-10-08T00:00:00+00:00

Abstract

The development of new technologies such as 5G, AI, and cloud computing has enabled continuous iterative updates in audio-visual-graphic expression forms, with the advancement of terminal small screens and smart devices in particular accelerating the pace of deep media convergence. New communication paradigms exhibit characteristics of fragmentation, video-orientation, and interactivity. The sense of presence in live streaming, the immersion of virtual reality, the interactive nature of human-machine dialogue, and the novelty of innovation and creativity collectively demonstrate the profound transformations ushered in by technological advancement.

Full Text

Preamble

ChinaXiv Cooperative Journal

Discussion on Media Convergence Under Technological Updates
(Zhengzhou Radio and Television Station, Zhengzhou, Henan 450046)

Abstract: The development of new technologies such as 5G, AI, and cloud computing has continuously iterated and updated audio-visual expression forms, particularly as the development of small terminal screens and smart devices has accelerated the pace of deep media integration. New communication presents characteristics of fragmentation, video-based content, and interactivity. The sense of presence in live broadcasting, the immersion of virtual reality, the communicative feel of human-machine dialogue, and the freshness of innovative creativity all demonstrate the tremendous changes brought by technological updates.

Keywords: new concepts; new technologies; media convergence; smart broadcasting; small terminal screens; smart devices

Classification Code: G206
Document Code: A
Article ID: 1671-0134(2021)09-074-03
DOI: 10.19483/j.cnki.11-4653/n.2021.09.022

Citation Format: Ma Songlin. Discussion on Media Convergence Under Technological Updates [J]. China Media Technology, 2021(09): 74-76.

1. Planning According to the Situation: Breaking Through Broadcasting Challenges with New Concepts

Traditional broadcasting dissemination methods are being disrupted by the fragmentation and data-driven approaches of new media platforms. WeChat, Weibo, Douyin, Kuaishou, and public accounts have already captured half of the communication channels, leaving national broadcasting systems grappling with declining operational revenues and serious talent drain. Consequently, promoting media convergence and building all-media platforms has become an urgent priority for the broadcasting industry. To break this impasse requires shifting away from traditional concepts and relying on new paradigms to achieve transformation.

A broad consensus has emerged that the primary battlefield for media convergence lies on the internet. As the media ecosystem, public opinion landscape, and communication platforms, channels, and methods continuously evolve, traditional concepts can no longer meet the demands of media convergence. Updating these concepts has become the key to breakthrough development [1]. The "mobile-first" philosophy represents an inevitable choice, confirmed from perspectives of aesthetics, technology, and information consumption habits. Broadcasting organizations must learn to speak with data, serve with data, and capture the commanding heights of public opinion with data, building mobile client applications focused on user numbers and engagement metrics. They must proactively reflect on their shortcomings, strengthen internet thinking, and forge new mainstream media.

The fundamental innovation in broadcasting remains news propaganda, with news and program content at its core. Using internet communication as the carrier, the value of broadcasting news products and services continues to expand, with upgraded content and enhanced service awareness promoting the integrated development of the "new audio-visual" market and shaping a new industrial landscape [3]. Zhengzhou Radio and Television currently operates on the foundation of "two microblogs, one client, and one Douyin account," extending to platforms such as Xuexi Qiangguo, Toutiao, and Tencent Penguin Account. This strategy captures the space for visualized, fragmented information, forming a new media communication influence radiating from Zhengzhou across the nation.

For instance, during the COVID-19 pandemic in 2020, the station capitalized on the popular "Village Chief Shouting" topic by originally designing and producing a series of public service short videos titled "Village Chief Talks About Protection." Featuring hosts imitating village chiefs speaking in Henan dialect, these videos encouraged home quarantine and self-protection, achieving over 50 million views. Similarly, government hotline programs have evolved from traditional radio live interview formats into short video products with synchronized audio-visual presentation, earning praise from co-organizing units and the public.

Broadcasting development has always ridden the wings of new technology. Without it, broadcasting would be like fish out of water or dance without music, losing its soul and source of innovation. In the internet era, network information technology has transformed information production and news dissemination methods. The COVID-19 pandemic and normalized prevention mechanisms have further strengthened the integration between broadcasting communication and new technologies. Confronting changes in industrial supply and terminal technology development, broadcasting media have undergone comprehensive transformations across platforms, operating round-the-clock with grounded, interactive approaches that fully demonstrate mainstream media advantages while enhancing communication power, influence, and service capacity.

Since 2020, the pandemic has catalyzed online sales of various products and popularized network marketing for traditional commerce. Live e-commerce now dominates the internet, with established platforms like Tmall, Taobao, and JD.com competing alongside newcomers like Kuaishou and Douyin, making e-commerce highly lucrative. Traditional media such as broadcasting and television have had to follow this trend, experimenting with host live-streaming sales and e-commerce incubation bases. This new business model and program content has undoubtedly brought new opportunities and pathways to traditional media. For example, CCTV News New Media' s "Thank You for Ordering for Hubei" charity live stream sold approximately 40.14 million RMB worth of Hubei products in just two hours, while People' s Daily' s "Order for Hubei" series exceeded 200 million RMB in single-session sales.

---

2. Acting According to the Situation: Driving Media Convergence with New Technologies

Advanced technologies provide powerful support for building all-media platforms. Slow live streaming, cloud exhibitions, and cloud live streaming now occupy major communication platforms, with the deep integration of media and new technologies proving particularly striking. During the 2020 Two Sessions, CCTV.com and Baidu Intelligent Cloud created the AI anchor "Xiaozhi," integrating news broadcasting, intelligent dialogue, and social interaction to provide participants with enjoyable experiences. A 3D high-precision simulated human

portrait gave "Xiaozhi" its appearance, while speech recognition and synthesis capabilities enabled barrier-free communication. Combining computer graphics with AI and synthetic speech technologies endowed anchor "Xiaozhi" with rich expressions and human-like demeanor, successfully overcoming the rigid delays typical of robots to create a refreshing experience. Meanwhile, intelligent robots assisting journalists in writing and producing video and audio news have become increasingly common, and the construction of converged media news centers at provincial and municipal levels has accelerated the application of various new technologies and equipment.

Host live-streaming sales, influencer marketing, and cloud-based events represent proven paths that new media have forged through market testing. Zhengzhou Radio and Television' s experiments with cloud releases, cloud housing exhibitions, cloud auto shows, host product sales, talent scouting, and influencer anchor training have provided more possibilities for converged media development. Meanwhile, mature technologies for cameras, drones, and graphic/audio/video production offer strong technical support for broadcasting new media construction.

With the research, development, and application of artificial intelligence and 5G, intelligent new media has grown from nothing to sophistication, continuously refreshing human cognition and profoundly impacting media development. Only by mastering new media can traditional media truly improve service capacity and levels, enter the main battlefield, occupy the main position, and better fulfill their duties and missions. The audio field has also undergone significant transformation. From the vinyl record players of our grandparents' generation to the FM radios, VCDs, and home stereo systems of our parents' era, and then to CD players, MP3 players, Walkmans, and multimedia speakers—these devices have evolved into memories for generations. As people' s spiritual and cultural demands increase, various smart headphones and smart speakers have emerged to provide more comfortable and higher-quality user experiences.

Smart speakers like Xiaoai, Tmall Genie, and Xiaodu have entered thousands of households, becoming family members that chat with you, provide audio content, and intelligently control home appliances. As early as 2017, international markets saw Microsoft, Google, and Apple entering the smart speaker space, while domestic players like Himalaya, JD.com, iFlytek, Xiaomi, and Lenovo followed suit, hoping to cultivate the audio consumption market and establish smart speaker ecosystems. The growing demand for audio products has brought considerable changes to the audio domain, with audiobooks, parent-child education, and cultural variety shows becoming increasingly popular, while podcast-style programs have also boosted hosts' popularity. One report shows that during the 2020 pandemic, 52% of users aged 18-34 used smart speakers for music and entertainment, and 50% for news and information, compared to only 18% and 16% respectively among those over 55.

However, traditional radio program types and broadcasting models are not suitable for smart speakers and require internet thinking and proactive reflection

on advantages and shortcomings. First, breakthroughs must be sought in intelligence, fully leveraging unique hosting styles and voice characteristics to create human-like interaction. Intelligence manifests in big data application, enabling more precise and effective collection of user information compared to traditional listenership surveys, allowing adjustment of content formats, interaction topics, and structures based on personalized needs to improve listener experience. Second, time and scene limitations must be broken by using digital broadcasting technology for podcast programs. Shows like "Day Talk Park," "Dongwu Classmates,"and "Blackwater Park"confirm audience demand, sparking a new podcast wave. Platforms such as Lizhi FM, Xiaoyuzhou, and Piting, along with podcast sections on QQ Music and NetEase Cloud Music, have emerged. Data shows that 6,000 Chinese podcasts emerged between April and November 2020. After the fast-food-style, fragmented short videos and graphics, the brain needs moments of peace, making listening and slow living potentially the next "trend."

---

3. Following the Situation: Enabling Smart Broadcasting with New Technologies

From newspapers to radio, radio to television, television to internet, PC internet to mobile internet, and now to artificial intelligence—media transformation affects everyone' s life. In just 20 years, we have experienced technological evolution through text, images, audio, and video, with tremendous changes in how information is disseminated and received. Baidu' s Chairman and CEO Robin Li once stated that AI technology and big data can not only help media obtain truth at the fastest speed and understand user demand changes to spread recognized values, but will also penetrate every aspect of social life, greatly improving production efficiency and promoting civilizational progress.

Information technology development has brought qualitative leaps to traditional media workflows, with mobile-first and short video reporting becoming the norm across media outlets, and aerial photography becoming a major highlight of new media distribution. In 2020, Zhengzhou Radio and Television launched a series of short aerial videos including "Bridges Over the Yellow River," "Fields of Hope," "Zhengzhou Nights," and "Searching for Autumn in Zhengzhou," which gained both traffic and widespread acclaim. The station also launched the "Fang Zong is Here" short video series, using a self-written, self-directed, and self-performed sitcom format by journalists to promote Zhengzhou' s central work and hot topics. With nearly 60 episodes pushed across platforms including CCTV Video, Toutiao, and Xuexi Qiangguo, the series has established a certain brand effect. In collaboration with the Zhengzhou Meteorological Bureau and other units, the station launched the "Meteorology Classroom"new media special planning, actively exploring effective paths for "smart broadcasting + smart services."

The application of new technologies at the CCTV Spring Festival Gala can be

considered a microcosm of smart broadcasting combined with new technology. LED screens, "shake-to-get-red-packets," holographic projection, drones, smart robots, 4K, and 5G have all become highlights. The 2021 Spring Festival Gala delivered a visual feast using AI, VR, 5G, 8K, and naked-eye 3D technologies. Andy Lau' s "Niu Qilai" and Jay Chou' s "Mojito" performances were completed through "cloud recording," using VR and other technologies to create virtual scenes that achieved the effect of performing together across two locations, sparking heated discussion. The easy application of smart technology has brought convenience to converged media changes, greatly reducing both program production difficulty and costs.

The 2021 Henan Spring Festival Gala' s "Tang Palace Night Banquet" program adopted 5G+VR transmission, enabling cultural relics to dance with people and adding great interest to the arts. This fusion of technology and culture was well-received by audiences, particularly young people. The emergence and application of new technologies such as virtual reality and multimedia, combined with VR and ink painting effects, created virtual-real stage conversions that made the dance more three-dimensional and full, creating stunning visual effects and immersive experiences. It is precisely the flexible use of new technology that has put traditional culture in the spotlight, with innovation giving new strength to the inheritance of rich historical context [4].

Liu Liehong, Vice Minister of China' s Ministry of Industry and Information Technology, once stated that new-generation information technologies represented by 5G, artificial intelligence, big data, cloud computing, and industrial internet are rapidly iterating and updating, driving the digital transformation of online media services to deepen continuously. This has made precision, intelligence, data-driven approaches, socialization, and ubiquity increasingly evident, creating a favorable environment for the online media industry. However, the technological revolution and industrial transformation have also made the media environment more complex, making authenticity and effectiveness harder to identify online, while the malicious spread of harmful information urgently needs curbing. The smart reinvention of mainstream media has become imperative [5].

The creation of smart media has become an important topic for traditional media at all levels—central, provincial, and county—as media convergence strategies embrace the "smart" brand. The goal is not only to revitalize traditional media but also to achieve precise communication through effective use of artificial intelligence and big data. However, "smart" encompasses not just equipment updates and platform building, but also requires holistic planning, optimized talent teams, in-depth research into successful business models, and full participation in smart government and smart city management and operations to truly realize smart media functions.

The key to following the situation lies in understanding it. The laws of internet development tell us that any "trend" or dividend will eventually dry up, and short video dividends will also end. Where the next hit will emerge remains

unknown. Grasping internet thinking is difficult, and applying it in practice is even more challenging. This requires smart broadcasting development to be both forward-looking and practical. First, we must recognize that the core and essential purpose of combining traditional and new media remains communication. Smart communication is a practical need to enhance broadcasting and film communication power and reconstruct influence under the modern new media landscape.

Smart communication' s notable characteristic is smart recommendation, which serves as the fundamental way to meet customers' differential and personalized needs and the prerequisite for achieving precise communication [6]. Smart recommendation enables precise content push through big data analysis of audience preferences, information access times, and interactive comments. Second, we must focus on audience autonomous choice. In different environments, each user has varying demands for plot, actors, performance, video size, and clarity of the same film or television work. High-quality image and video real-time transmission has become the "standard configuration." Thus, the current market environment requires the broadcasting industry to supply diversified choice ranges, similar to the multiple free-choice packages offered to customers in the communications field. Finally, we must emphasize the socialization transformation of broadcasting and television, as customers using mobile social apps and PC social software endow new media platform communication and broadcasting communication with entirely new social functions.

References: [1] Liao Wangshan. New Directions for Broadcasting Media from the Perspective of Converged Media Development [J]. Voice and Screen World, 2020(6): 1.
[2] Zhang Hongping. China Family News: Empowering New Health Communication Models Through Live Streaming [J]. Media, 2021(2): 26-28.
[3] Guo Quanzhong. Planning According to the Situation and "Breaking the Circle" with Innovation [N]. China Press, Publication, Radio, Film and Television Journal, 2020-12-9: (5).
[4] Wang Xiaohui. Current Development Status and Coping Strategies of Traditional Media News Communication [J]. China Media Technology, 2021(5): 32-34.
[5] Tang Xujun. Concept Renewal is the Key to Mainstream Media Convergence Development [J]. Contemporary Communication, 2019(6): 1.
[6] Zhang Jun. Practice of "Smart Broadcasting +" Transformation and Development in Broadcasting Networks [J]. Radio and Television Technology, 2019(3): 20-29.

Author Bio: Ma Songlin (1981-), male, from Zhoukou, Henan, Senior Editor. Research interests: news communication and program creation.
(Responsible Editor: Zhang Xiaojing)

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