On the Live-streaming Trend of Converged Media Reporting in the 5G Era: A Preliminary Discussion (Postprint)

Authors: Zhang Ying

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

Abstract

The technological transformation in the 5G era has created new turning points for the dissemination of converged media news; within an environment of gradual social development transformation and centered on audience market demands, normalized live broadcasting and innovative approaches are taken as the developmental and survival trends for converged media. This paper primarily analyzes the background and characteristics of converged media in the 5G era, the development opportunities and challenges thereof, as well as the live reporting trends based on 5G-era converged media, thereby providing safeguards for the nation' s stable development.

Full Text

A Brief Discussion on the Live Streaming Trend of Convergence Media Reporting in the 5G Era

Author: Zhang Ying (Hunan Broadcasting and Television Group, Changsha, Hunan 410005)

Abstract: The technological revolution of the 5G era has created new opportunities for the dissemination of converged media news. Centered on audience market demands and adapting to evolving social development, normalized live streaming and novel methods have become essential trends for the development and survival of convergence media. This paper primarily analyzes the background and characteristics of convergence media in the 5G era, the opportunities and challenges it faces, and the live reporting trends based on 5G-enabled convergence media, thereby providing support for the nation' s stable development.

Keywords: 5G era; technical reform; convergence media; live streaming of reports; trend

---

Media Evolution and Technological Foundations

High-level, diversified technological support and evolving work paradigms constitute the fundamental drivers of deepening reform in media communication channels and reporting forms. Since the popularization of modern print media, the substantial development of radio and television, and the current dominance of mobile and network terminals, successive technological revolutions demonstrate that the continuous transformation of communication technology and media can enable innovation in dissemination methods at any moment.

A historical review of modern media development reveals a strong correlation between communication technology advancement and media morphology evolution. The gradual development, evolution, and iteration of communication technologies have given rise to new media forms, bringing novel developments and revolutions to communication methods and thereby driving positive transformations in media dissemination, production, and structural patterns. From a communication technology perspective, 1G enabled voice and SMS; 2G supported voice, text, and WAP internet access; 3G facilitated web browsing with graphics and video calls; 4G normalized live streaming and short videos; and 5G will enable the construction of a new generation of secure, mobile, high-speed infrastructure, expanding scenario support from mobile internet usage to the Internet of Things. The advantages of 5G are particularly significant in terms of latency, stability, capacity, efficiency, and bandwidth.

[Figure 1: see original paper] Advantages of the 5G Era

1. Background Characteristics of Convergence Media in the 5G Era

1.1 High Communication Speed Research indicates that 5G technology, relying on digital networks, can achieve data transmission speeds of up to 10 Gbit/s—more than a hundred times faster than 4G' s approximately 150 Mbps. For instance, in the 5G era, downloading large or high-definition films takes only tens of seconds, whereas the same task typically required over ten minutes in the 4G era. This high-speed environment satisfies the application requirements for data-intensive virtual reality and holographic projection technologies, providing robust support for convergence media.

1.2 Low Communication Latency As communication speeds gradually increase, the time required for information transmission from sender to receiver is significantly reduced, effectively addressing communication delay issues. According to relevant data, 5G technology achieves communication latency of less than 1 ms. From the perspective of convergence media' s pursuit of real-time reporting and 争分夺秒 (racing against time), this represents substantial value.

1.3 Large Network Capacity The capacity of 5G communication network infrastructure has risen to the hundred-billion level, thereby optimizing the construction of IoT systems. Consequently, in the process of producing convergence media products, various software and hardware facilities for data collection, sensing, processing, computing, presentation, and scheduling can all operate in concert around the same core tasks, promoting simultaneous improvements in both efficiency and quality.

1.4 Strong Innovation Momentum In the networked and informationized era, communication technology plays a fundamental and irreplaceable role. With the popularization of 5G technology, artificial intelligence, unmanned control, remote operation, virtual reality, and related technologies have gained in-depth practical application, and their integration with convergence media will become increasingly profound.

2. Development of Live Streaming Technology for Convergence Media in the 5G Era

Traditional "camera + satellite" live streaming formed the foundation of early media live technology, specifically utilizing television stations to receive satellite live signals, re-encode them into data formats, and disseminate them via networks to ensure high-quality live streaming services for various network facilities while supporting playback of live content. With the rapid development of modern network technology, P2P technology enables user information sharing on networks during live streaming. Convergence media technology involves compressing original live signals through encoding and continuously transmitting them as files for decoding and playback on client terminals. This technology facilitates substantial improvements in live streaming effectiveness and enables simultaneous playback of live footage and user interaction—video conferencing, for example, is closely related to this foundation.

3. Changes in News Reporting Methods for Convergence Media in the 5G Era

Traditional news dissemination typically relied on television, radio, newspapers, and other conventional media. The information value concept of traditional media emphasized the relationship between the objective significance of social facts and audience acceptance significance in constructing news information value. In the 5G era, network live streaming has emerged as a new dissemination method, developing vigorously and enabling news to report live scenes through network live streaming, thereby providing audiences with a more immersive experience of news events. For example, CCTV' s collaboration with Alibaba on live commerce demonstrates this transformation. Traditionally, media needed to report news, but with progressive times, both news dissemination value and technology have shown upward trends, requiring content innovation. Live commerce has expanded media functions beyond news dissemination. While traditional news

broadcasting could not collect real-time audience feedback, live commerce methods helped enterprises sell accumulated products during the pandemic, with sales observable in real time. This enriches the speed and content of news dissemination and helps society address numerous practical problems, holding significant meaning for promoting the transformation and upgrading of traditional media.

4. Development Dividends for the Live Streaming Industry Under 5G-Era Convergence Media

Initially, network live streaming was merely an entertainment dissemination method, encompassing various categories such as beauty live streaming, daily life streaming, and talent streaming. In the 5G era, short videos have proliferated, with most short video creators accelerating fan monetization after accumulating follower bases. Regardless of the live streaming format, the industry has entered a dividend period. However, alongside these dividends, live streaming product quality, content, and streamers' character and ethics require standardization. In 2020, the pandemic severely impacted the physical economy, but the combination of physical economy and live streaming gradually reduced losses. Particularly, live commerce, leveraging media authority in audiences' eyes, helped enterprises sell accumulated products and ensured sustainable market economic development.

5. Live Reporting Trends for Convergence Media in the 5G Era

5.1 Enhancing Cognition, Clarifying Judgment, and Grasping Social Needs for Convergence Media and Live Streaming Media serves as society' s conscience and a barometer of social development, with mainstream media bearing the responsibility of voicing public sentiment and serving as the Party' s mouthpiece. In the 5G era, all-media operations should plan according to the times and follow trends. Facing diversified information dissemination and diverse audience demands, media operations departments, decision-makers, and implementers should deeply understand communication information awareness and clearly grasp content control principles. The Ministry of Industry and Information Technology issued 5G commercial licenses to China Telecom, China Mobile, China Unicom, and China Broadcasting Network, marking China' s official entry into the 5G commercial era. By 2020, most first-tier cities including Shanghai had begun municipal 5G coverage, fully entering the commercial era. In the convergence media era, news presentation has shifted from graphics-dominated to video-based formats, enabling live streaming anytime and anywhere. Facing 5G development trends, media must follow the direction of the times, adhere to the development strategy of "video-first, mobile-first, scenario-first," fully grasp new technology development trends, accelerate convergence media deepening development, effectively reform news production and reporting methods, explore broad new application scenarios, and actively explore and realize new communication ecosystems and models.

5.2 Actively Expanding Communication Methods and Promoting Normalized Live Streaming as a Powerful Information Dissemination Tool From a media perspective, the most charming, attention-grabbing, and influential method is news relay broadcasting. In recent years, some media have collaborated with mobile communication departments to conduct 5G technology trials for live streaming, with smooth and high-definition broadcasts effectively satisfying audience information demands. As 5G infrastructure construction accelerates, 5G technology hardware and applications have rapidly launched and deployed. By 2020, 5G fully entered the commercial stage, enabling high-speed signal transmission. Multiple cameras can simultaneously collect and distribute high-definition, real-time information, allowing users to comprehensively experience the grandeur of live scenes and achieve full immersion, fully engaging audiences' senses of sight, hearing, and touch for richer, more three-dimensional experiences. Although traditional television broadcasting also allowed viewers to see live scenes, the limited camera angles, constrained signal transmission speeds, and directorial switching meant audiences saw an incomplete, edited version of the scene rather than the full reality.

In the 5G era, traditional media can collaborate with mobile communication departments to develop 5G media wireless services, including 5G communication holographic interviews, 4K or 8K panoramic production and broadcasting, local 5G media mobile live streaming, VR live streaming, 5G + big data media applications, and remote directing—making live streaming the most powerful information dissemination weapon of the new era.

5.3 Mastering Live Streaming Essentials to Make 5G Technology Live Streaming a Key Feature of the All-Media Era The high efficiency, low latency, and massive connectivity features of 5G technology have transformed new communication methods into reality. In the 5G era, VR/AR technology has achieved large-scale promotion, creating stronger immersion for users. Convergence media live streaming in the 5G era offers several advantages:

5.3.1 Adhering to Content-Centric Live Streaming While Maintaining Correct Guidance Building upon traditional media, we must actively construct new media news talent teams with rich experience in planning themed news live streaming and real-time coverage of breaking events. Traditional media possesses strong credibility and stable audiences, giving it clear advantages in the 5G network and popularized live streaming technology era. Only by clearly understanding the diversity, authority, and authenticity of news content and reasonably applying new 5G-era technologies can we stay at the forefront and lead trends.

5.3.2 Diversified Display and Multi-Channel Dissemination of Live Content for Broader Coverage In the 5G era, audiences show diversified trends in information attention and consumption. On-site live streaming, timely

follow-up, and mobile dissemination will inevitably become the preferred tools for convergence media communication. Building upon traditional mobile video live streaming, convergence media can also utilize AR, VR, holographic, and related technologies to gradually expand the scope of mobile live streaming and enrich audience on-site experiences. New media VR and AR technologies can carry massive information and sensory functions. With 5G technology support, VR and AR technologies become more stable and high-definition, delivering higher-quality novel experiences.

5.3.3 Optimizing Conference Coverage, Live Broadcasting Breaking Events, and Planning Live Streaming During the National Two Sessions period, numerous mainstream media fully leveraged convergence media technology advantages by equipping editors and photographers dispatched to news scenes with dedicated live streaming facilities. Frontline personnel completed capture work while 后方 (the rear team) finished editing and promotion, highlighting the timeliness of new media live streaming.

Conclusion

In summary, with the advent of the 5G era, media faces fierce competition, and its industry landscape and market environment have undergone tremendous transformation. Relevant organizations and personnel must reasonably utilize holographic, VR, AR, big data, and other new technologies in their work while consolidating traditional media' s content advantages and flexibly adapting to changes. Only then can they provide audiences with rich, diverse information products and spiritual sustenance.

References:

[1] Jiang Yijie. A Discussion on the Live Streaming Trend of Convergence Media Reporting in the 5G Era[J]. Journal of Guangxi Vocational and Technical College, 2019(3): 122-124.

[2] Jia Yi. How 5G-Era Live Streaming Boosts Media Convergence Development[J]. News and Cultural Construction, 2020(12): 159-160.

[3] Deng Gang. Analysis on the Application of Convergence Media Cloud Live Streaming Platform in the 5G Era[J]. Humanities and Friends, 2019(19): 49.

[4] Liu Yunjie. Discussion on the Development Trends and Ideas of the Publishing Industry in the 5G Era[J]. China Media Technology, 2019(7): 30-31.

[5] Liu Ruisheng. New Trends in Media Convergence in the 5G Era—Innovation and Development of China' s Media Convergence Seen from the 2019 Two Sessions News Communication[J]. Publishing Reference, 2019(4): 49-52.

[6] Shi Xia, Bai Xuefeng, Zhou Yan. Discussion on the Development of New Media in the 5G Era[J]. West China Broadcasting & TV, 2020(S2): 114-118.

[7] Tian Yaxin. Research on the Construction and Development Trends of County-Level Convergence Media Centers in the 5G Era[J]. Media Forum, 2020(5): 29-29, 31.

[8] Bai Xuefeng. Analysis on the Development Direction of Broadcast Media Under the 5G Era Background[J]. World Outlook, 2018(10X): 179-180.

Author Biography: Zhang Ying (1981-), female, from Penglai, Shandong, engineer. Research direction: Development trends of convergence media in the 5G era.

(Executive Editor: Zhang Xiaojing)

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