Research on the Innovative Development Path of Media Convergence in the 5G Era (Postprint)

Authors: Yang Kai

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

Abstract

【Purpose】To explore the implementation pathways for innovative development of media convergence in the 5G era. 【Method】Based on literature review and survey research methodologies, this study systematically organizes objective analytical results and theoretical evidence from relevant literature, searches via internet channels for content related to "solidly advancing in-depth media convergence" during the National Two Sessions, establishes reference frameworks by integrating relevant research findings, and conducts a detailed exposition on the opportunities and challenges arising from media convergence development in the 5G era. 【Results】The study finds that "quality improvement" is a critical prerequisite for media convergence to achieve innovative development, and that revolutionizing media product content, form, and services based on "quality" constitutes the core support for ensuring the realization of innovative development in media convergence. 【Conclusion】To achieve innovative development of media convergence in the 5G era, it is necessary to pay equal attention to both talent cultivation and quality improvement, as the professional competence and vocational capabilities of talent determine the quality of media products, which in turn affects whether the path of innovative development for media convergence can be further broadened.

Full Text

Preamble

Research on the Innovative Development Path of Media Convergence in the 5G Era

(Integrated Media Information Center of Shandong Radio and Television Station, Jinan, Shandong 250000)

Abstract: This study explores the implementation pathways for innovative development of media convergence in the 5G era. Based on literature review

and survey research methods, we systematically analyze objective findings and theoretical evidence from existing scholarship, supplemented by online searches for content related to "advancing in-depth media integration" during the 2023 Two Sessions. Drawing on these research outcomes as reference points, we examine in detail the opportunities and challenges that 5G-era media convergence presents. The findings reveal that "quality enhancement" constitutes a crucial prerequisite for achieving innovative development in media convergence, with revolutionizing media product content, format, and services based on "quality" serving as the core support for ensuring this innovation. To realize innovative media convergence development in the 5G era requires simultaneous emphasis on talent cultivation and quality improvement, as professionals' expertise and competencies determine media product quality, which in turn influences whether the path for innovative media convergence development can be further broadened.

Keywords: 5G era; media convergence; communication; innovative development; path
Classification Code: G233
Document Code: A
Article ID: 1671-0134(2023)05-113-04
DOI: 10.19483/j.cnki.11-4653/n.2023.05.026
Citation Format: Yang Kai. Research on the Innovative Development Path of Media Convergence in the 5G Era [J]. China Media Technology, 2023(05): 113-116.

1. Changes in Communication Patterns in the 5G Era

1.1 Emphasis on High-Quality Experience

Traditional information communication patterns were characterized by "audio-visual" features that enriched audience sensory experiences. However, as we transition from the 4G to the 5G era, communication patterns have become faster and more efficient, while rising living standards have further increased audience demands. Various audio-visual media products must first ensure "high quality" to truly stand out and capture attention, aligning with the requirements of the "high-quality development" roadmap. Whether for capturing audience groups, ensuring sustainable industry development, or advancing timely industry transformation, achieving "high quality" is an essential prerequisite. From the perspective of media convergence and its audience, value realization, and application purposes, media convergence serves the broad masses. The communication of content and information constitutes the primary implementation pathway, and the audience' s experience—from content reception and consumption to information acquisition—determines media product value. Therefore, media product communication in the 5G era must firmly grasp the audience' s demand for a "high-quality experience."

1.2 Transition from Real-World to Scenario-Based Social Interaction

Under 4G technology, the media industry restructured the communication landscape based on new media platforms, transforming audiences from "passive recipients" into "participants in information dissemination," "leaders in media product creation," and even "producers of media products." This transformation occurred because the forms and methods of public participation in social activities changed, with social actors extending their social relationships online for reconstruction, making the network environment more authentic and transparent. However, even though 4G technology expanded the internet' s ability to transcend time and space, it did not completely eliminate the "sense of distance." For instance, audiences' real social activities still relied on "screens" and "platforms," and even mature video communication technology limited sensory experiences to the "screen." In the 5G era, supported by VR, AR, and other technologies, audiences can experience diversified social scenarios online, obtaining more authentic experiences at visual, auditory, and sensory levels through activities such as multi-person interactive online conversations in different scenarios and VR-based simulated reality games. Overall, the communication landscape reconstruction led by media institutions in the 5G era has further enhanced the interest and stickiness of online social interaction.

1.3 Shift from "Internet Plus" to "Plus Internet"

The widespread application and comprehensive coverage of 5G technology can facilitate industrial structure upgrading and transformation while empowering industries to innovate production methods, content, and products to achieve "quality enhancement." Taking the 4G-era consumer internet model as an example, audiences conducted activities through "networked connections via the internet." In contrast, the 5G era emphasizes "deep connections between users and intelligent terminals." Simply put, the 4G era had audiences selecting from "existing products" based on their needs, whereas the 5G era develops diverse and varied "products" based on audience choices, transforming "products" by "serving personalized needs"to achieve transformation, upgrading, and landscape reconstruction. From the perspective of industrial development characteristics, the 4G era was dominated by "Internet Plus," while the 5G era exhibits "Plus Internet" features. An important condition for achieving this transformation is data information and digital technology boosting social innovation and development. Under the "Plus Internet" paradigm, communication forms must achieve "in-depth advancement" to adapt to 5G-era development, with "connecting everything" as the main goal to expand construction space and activity scope, creating conditions and providing support for promoting more industrial technologies or sector development.

2. Mainstream Trends of Media Convergence in the 5G Era

2.1 Technology Integration Developing Intelligent Media

5G serves as the driving force for innovative development and application of technologies such as artificial intelligence, virtual reality, big data, and 4K/8K ultra-high-definition video. Artificial intelligence and other technologies constitute crucial support for media convergence to achieve in-depth development in the 5G era and represent important tools for catalyzing innovation vitality. Analyzing audience demands for media products and information dissemination based on current living standards reveals that enhanced intelligent application services represent the pathway to link audience personalized needs and launch innovative media products. This is particularly true as 5G technology accelerates the implementation of large-scale scenario applications such as new infrastructure construction, providing higher-specification technical support for reconstructing media product presentation methods and communication models. For instance, technology-integrated application products such as sensor news and drone news have already emerged, offering more timely and precise data information support for media product output in the 5G era. Based on this analysis, whether from the perspective of social development trends or industry development trajectories, developing intelligent media through technology integration is an inevitable outcome, and 5G technology can effectively guarantee the results of media convergence. Furthermore, as "5G Plus"technology becomes deeply promoted and innovatively applied, cross-domain and integrated applications of 4K/8K ultra-high-definition video technology, intelligent scenarios, and AGC technology will become the norm in the 5G era, heralding an information communication landscape characterized by high efficiency, intelligence, comprehensive data coverage, and diversified scenarios.

2.2 Cross-Boundary Integration Achieving Diversified Industrial Forms

In the 5G era, the research, development, and application of new-generation technologies centered on 5G provide an operational platform for in-depth media integration. Achieving deep media integration requires not only convergence in form, content, methods, and channels but more importantly, effective integration between media and various industries—namely, cross-boundary integration. According to the main characteristics of media cross-boundary integration, it can be divided into cross-platform integration and cross-regional integration. The former primarily refers to cooperation and resource sharing between authoritative traditional mainstream media such as central and provincial media and commercial platforms, focusing on functional coordination between different platforms, innovative application scenario development, and promoting mutual complementarity and business model innovation. The latter is a cooperation model that has emerged based on strategic drivers to meet development needs, primarily aiming to integrate and deeply develop different media forms

to establish comprehensive, full-chain, multi-level, and multi-faceted information dissemination chains that satisfy audience information acquisition needs. The development goal of cross-platform integration is to innovate media service methods and boost effective economic growth in social development. The development goal of cross-regional integration is to form a horizontally and vertically coordinated regional layout, leveraging national strategies to advance in-depth media integration. Examining the overall development trends facing media convergence in the 5G era from these two construction directions can be summarized as "achieving diversified industrial forms."

2.3 Immersive Field Experience Under Spatiotemporal Concepts

In the 5G era, many cutting-edge technologies are gradually maturing and becoming widely applied. Against the backdrop of digital technology influencing spatiotemporal sequences, the "spatiotemporal concept" has attracted widespread attention from all sectors of society. In the converged media era supported by 5G technology, the intersection, integration, and mutual embedding of "time" and "space" have made it possible to arbitrarily extract cross-spatiotemporal social activity schedules. For example, media can conduct real-time live broadcasts of breaking news events based on 5G communication technology, and audiences can experience national Two Sessions as if they were on-site through mobile electronic devices and 5G communication technology. From the overall perspective of media convergence development in the 5G era, media convergence has passed the difficult initial exploration period and is in a crucial stage of consolidating foundations and promoting superstructure construction. Borrowing from McLuhan' s perspective that "media are extensions of human senses," 5G-era media convergence development represents not only a comprehensive interpretation of "technical media and human ecology," "bodily senses and the objective world," and "spatial mobility and temporal compression," but also an intuitive manifestation and demonstration. Analyzing the main directions of media convergence development under the "spatiotemporal concept" and linking them to audience experience needs reveals that achieving "immersive field experience" is the correct choice for satisfying audience needs and the "knock on the door" for media convergence to broaden its sustainable development path using 5G technology. Virtualized and experiential communication not only transcends spatiotemporal concepts but also creates favorable conditions for deriving diversified products from media convergence development. The application of 5G and other new technologies connects the subject' s sensory nerves and bodily touch, achieving multi-dimensional displays of virtual immersive experiences that can strengthen audiences' sense of presence and realism when using media products.

3. Innovative Development Paths for Media Convergence in the 5G Era

3.1 Grasping Content Quality Through Talent Cultivation

To achieve innovative and sustainable development of media convergence in the 5G era, we must first ensure the core strength—talent. The realization of continuously optimized technological productivity is based on human-centered social production activities that achieve continuous innovation. Currently, interdisciplinary talent is an essential driving force for social development and the key to achieving cross-platform and cross-regional cooperation. Media convergence cannot burst with vitality in social production in the 5G era without the support of interdisciplinary human resources. Moreover, the phenomenon of amateurization in information dissemination has increased the difficulty for media to maintain discourse power and authority. To firmly capture audience attention and enhance stickiness, media product content quality must be improved. The simplest and most direct approach is to achieve content innovation in media products, which is also where the core strength of media convergence development lies. Therefore, we recommend comprehensively optimizing talent cultivation and control to ensure that media convergence development in the 5G era can obtain continuous momentum for growth. First, start with the cultivation of current employees to enhance the strength and quality of existing professionals, ensuring the dominant position of mainstream media in social public opinion. By establishing a professional, sincere, and approachable image, media can reconstruct their connection with audiences while enhancing their credibility and authority. This requires media practitioners to reconsider the roles of "media professionals," their social status, and value realization in the context of the 5G era. For instance, as media product output advances toward automation and intelligence, how should practitioners independently realize their value? This demands that practitioners reflect on their professional competence, creativity, innovation ability, and research capabilities to propose solutions for personal comprehensive ability enhancement. Second, organizations and institutions must strengthen guidance for practitioners by offering professional training on automation and intelligence to enhance their skills and knowledge reserves and guide them in scientifically applying 5G technology to produce high-quality products with depth and connotation. Finally, at the university talent cultivation level, we must adhere to advancing with the times, focusing on cultivating students' innovation abilities by introducing real-time industry content into teaching to simultaneously develop students' professional capabilities, vocational skills, and sustainable development capacity, using "producing high-quality, content-rich media products" as the metric for evaluating educational outcomes.

3.2 Improving Service Quality Through Content Integration

Based on the above analysis, during the process of media convergence development in the 5G era, significant changes have occurred in media product output

forms, activity nature, and leading actors. Improving media product services according to audience needs is the guarantee for the long-term survival of media convergence development. To enhance media product service quality, content integration must first be achieved. On this foundation, industry optimization should be conducted according to audience demand differences to ensure increased user rates and service quality, thereby broadening and extending the path of media convergence development. Moreover, 5G technology emphasizes serving information dissemination between audiences, such as communication activities in the form of "audience individual—friends, family, colleagues···" Corresponding to the needs of media convergence development, this means that organizations, institutions, or media practitioners can rely on 5G technology to further improve information utilization and deeply explore various information dissemination needs of individual audiences. By scientifically grasping audience demand characteristics and improving media product output management from a holistic planning perspective, media organizations can simultaneously innovate services based on audience demand characteristics to ensure they can provide needed services to different audience individuals, thereby further enhancing the correlation and interactivity between media and audiences. To this end, media organizations and institutions need to adjust media product output workflows, using telecommunications technology, artificial intelligence technology, and cloud computing technology to conduct comprehensive analyses of audience information dissemination needs, and leverage the advantages of 5G technology to enhance communication with audiences, mining their potential needs based on their information browsing characteristics. Additionally, media organizations must increase media product innovation efforts based on content integration. For example, in the application environment of 5G+AI accelerating high-quality content output, for important news reports, media outlets should advance dynamic and standardized collaborative news content translation and production, further innovating technology applications to achieve simultaneous domestic and international release, personalized adjustment of original content translation, and ensuring post-translation content accuracy.

3.3 Innovating Communication Forms Through Technology Integration

Currently, 5G+AI represents the frontier of modern social science and technology development and the dominant force for innovating human social development. Media convergence development in the 5G era will inevitably produce new communication forms—this is both an advantage brought by technology integration and an inevitable result of serving audiences and improving overall service quality. Based on existing achievements, the China Earthquake Networks Center has used AI technology to connect with media broadcasting to forecast earthquake information for local populations. Analyzing the main development trends to identify innovative development paths for media convergence reveals that solving conventional problems such as resource collection, sharing, and application through virtual reality technology is already a substantive act of media

convergence innovation in the 5G era. To address development challenges in the next stage, the media industry must innovate technology integration applications to create new communication forms while strengthening media product quality control. For example, embedding VR technology and AR technology into real-time live streaming based on 5G communication technology and new media platforms can promote coordinated development across various fields and make media innovation more effective. Additionally, media convergence can enrich diversified application scenarios and facilitate the formation of new communication forms through vertical cross-boundary integration from the perspective of "advancing in-depth development." For instance, Hainan Radio and Television' s converged media center collaborated with the Hainan Provincial Museum to launch a joint R&D project, offering live "online museum tours" to the public based on 5G technology. On this foundation, technology integration innovation can consider developing experiential projects such as VR panoramic experiences and 3D world exploration. By using AI technology to identify cultural relics and displaying QR codes or interactive buttons for VR sensory experiences on the live broadcast page, audiences can freely choose whether to "have a dialogue with cultural relics." After selecting "enter," the page content supports VR display and AI-controlled interaction with "cultural relics," introducing basic information through self-narration by the "cultural relics" and then conducting human-computer interaction with the audience. This can not only enrich and enhance audience experiences but also achieve further dissemination and promotion of cultural relic information.

3.4 Connecting User Needs Through Scenario-Based Applications

Different from audience demand mining under content integration, this section primarily discusses how to advance media work improvement from the perspective of user needs, aiming to propose methods for strengthening close connections with user numbers and linking potential demand development with scenario application innovation to boost diversified development of industry forms. In the 5G era, technologies such as virtual reality, augmented reality, and holographic projection have developed multiple application models by connecting with cloud service functions and terminals of new media technology and traditional media technology, basically satisfying audience diversification needs. However, from a long-term development perspective, continuously rising quality of life will inevitably lead audiences to demand higher and more diverse experiences. Therefore, for media convergence development, the urgent problem to solve is how to conduct deep development and efficient utilization of next-generation technologies to build sufficiently realistic media scenarios for audiences, constructing immersive and three-dimensional scenarios based on their diversified needs to obtain more data information support for expanding innovative media convergence activities. By allowing audiences to receive information in multi-scenario applications and become witnesses, real-scene observers, or even disseminators of information dissemination, media organizations can examine all aspects of media product content services. Then, media organiza-

tions and institutions can adjust personalization, interactivity, and immersion settings based on problems occurring during user experiences. Additionally, scenario application innovation in the 5G era will also affect the information dissemination level, creating new scenarios for information dissemination. In response, media organizations and institutions must properly apply 5G technology, scientifically conduct user demand mining, and use data, input, services, and interconnection to complete the connection between media and users, building a closed-loop communication chain to dynamically grasp user operation habits.

In summary, the 5G era has brought new communication forms and patterns to media convergence development, presenting new opportunities driven by modern technology led by 5G technology. However, media convergence development also faces new challenges. The simplest and most direct way to solve these new-era challenges is to timely grasp "quality improvement" as the foundation for innovation, including innovating media product content and services. To this end, media practitioners must effectively connect with audiences' actual needs, take serving audiences well as the starting point, revolutionize technology and content integration, and enrich diversified application scenarios. Most importantly, personnel' s professional quality, vocational competence, and innovation capacity must keep pace.

References

[1] Chen Yuancheng. Revolutionizing Media Concepts to Promote Converged Media Development—Revisiting Media Convergence in the 5G Era [J]. Audio & Video, 2020(2): 126-127.

[2] Zhang Jie, Wang Qingfu. Construction of Discourse Power of Mainstream Media in the Collaborative Development of Media in the 5G Era [J]. Journalism Lover, 2022(6): 47-49.

[3] Lu Di. Synergy and Connectivity: The Mechanism by Which 5G Promotes In-Depth Media Integration [J]. Modern Communication (Journal of Communication University of China), 2021(8): 15-19.

[4] Qi Yalan. Research on Communication Methods of Mainstream Media from the Perspective of Media Convergence in the 5G Era [J]. Digital Communication World, 2021(2): 239-240.

[5] Zhang Ying. A Brief Discussion on the Live Streaming Trend of Converged Media Reports in the 5G Era [J]. China Media Technology, 2021(8): 50-52.

[6] Dou Ying. The "Content + Technology" Path for Smart Media Convergence in the 5G Era—Taking People' s Daily as an Example [J]. Reporter Observation, 2020(27): 26-27.

[7] Cao Jing, Liu Yuxi. Exploration and Reflection on Immersive Experience News in Media Convergence Development in the 5G Era—China Youth Daily [J]. News and Writing, 2020(3): 45-48.

[8] Liang Zhen. Research on New Trends of In-Depth Media Integration in the 5G Era—Taking the 5G Practice of Central Mainstream Media as an Example [J]. Journalism Research Guide, 2022(14): 78-81.

[9] Lu Di, Lin Zhiyao, Zhuang Shudan. From 5G+ Converged Media to Media Convergence +5G—In-Depth Media Convergence Development Driven by Advanced Technology [J]. China Editor, 2022(8): 87-91.

[10] Chen Qiong. Research on the Live Streaming Trend of Converged Media Reports in the 5G Era [J]. China Media Technology, 2022(12): 77-80.

[11] Xiong Ying, Yang Jianmin. Research on Communication Methods of Mainstream Media from the Perspective of Media Convergence in the 5G Era [J]. China Media Technology, 2021(1): 39-40+64.

[12] Peng Guanglin, Zeng Chen. Specialization, Interconnection, and Platformization: The Path for In-Depth Integration and Development of County-Level Converged Media in the 5G Era [J]. Journal of Jishou University (Social Sciences Edition), 2021(6): 143-150.

Author Profile: Yang Kai (1992-), male, from Tengzhou, Shandong, Assistant Editor, research direction: media convergence.

(Responsible Editor: Zhang Xiaojing)

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