Application of Network Technology in Converged Media Radio and Television Engineering Technology (Postprint)

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Abstract

In the contemporary era, the rapid development of information technology and the widespread adoption of network technology applications have transformed the developmental trajectories of numerous industries. Specifically, the advancement of converged media broadcast television engineering technology must prioritize the integrated application of network technology, riding the wave of technological convergence in industrial development to chart its own course amidst disruptive forces. This paper first provides a brief overview of the current state of domestic broadcast television industry development, subsequently analyzes the advantages of network technology integration in converged media broadcast television engineering technology, and finally enumerates practical application examples of network technology within this domain, thereby providing valuable references for those concerned with this topic.

Full Text

Application of Network Technology in Converged Media Broadcasting and Television Engineering

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Abstract: In the contemporary era of rapid information technology advancement, the pervasive application of network technology has fundamentally transformed developmental trajectories across numerous industries. The evolution of broadcasting and television engineering toward converged media must similarly emphasize the integrated application of network technology, leveraging industry-wide technological convergence to identify viable pathways forward. This paper first outlines the current development status of China' s broadcasting industry, then analyzes the advantages of applying network technology in

converged media broadcasting and television engineering, and finally presents specific application examples to provide practical references for stakeholders.

Keywords: network technology; optimization rate; enriched forms; data analysis; enhanced publicity

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1. Analysis of Current Development Status of China' s Broadcasting Industry

The domestic radio industry has been profoundly impacted by epochal shifts and advancements in information technology. As living standards improve, audiences increasingly demand high-quality audio-visual entertainment, gradually diminishing their attention to traditional radio media. Contemporary popular audio formats predominantly utilize network technology through "podcasts" and similar content forms. Although traditional radio has attempted exploratory reforms, its inherent limitations—constrained by time and space—prevent effective real-time sharing in the short term. Currently, the industry is actively exploring converged media pathways, leveraging new media platforms to enhance information reception efficiency and interactive participation. Program promotion and offline event organization now employ WeChat, Weibo, and similar platforms for information dissemination, aligning with modern online information consumption habits. During this exploratory phase, the advantages of network technology have become increasingly evident, making its deeper integration a requisite strategy for the radio industry to secure its market position [1].

The television industry has experienced equally significant disruption. Cable television audiences now consist primarily of middle-aged and elderly viewers, while younger demographics prefer smart TV terminals on video platforms that enable autonomous content selection. These platforms employ network technology to provide highly flexible on-demand services, and major local station festival galas are increasingly simulcast on video websites. Given this fundamental shift in national audio-visual consumption patterns, the television industry must pursue deeper network technology integration within its converged media development trajectory [2].

2. Advantages of Network Technology in Converged Media Broadcasting and Television Engineering

The evolution of broadcasting and television engineering toward converged media represents an inevitable outcome of industry development. Strengthening network technology application can enhance customer information acquisition rates, improve interactive experiences, and elevate promotional effectiveness. This analysis therefore holds substantial practical significance for industry practitioners.

2.1 Optimizing Production Efficiency and Enhancing Style Flexibility

Network technology provides direct access to vast online resources, which is essential for program production that requires extensive resource collection and relies on network technology for information transmission to achieve cross-regional collaboration. The thriving live streaming industry further necessitates robust network infrastructure and new media platforms. The broadcasting sector should reference these emerging industries to increase program style flexibility and capture market trends. Network technology enables remote operations and synchronous cross-location production, significantly reducing costs and production cycles while improving overall efficiency [3].

2.2 Enriching Interaction Forms and Expanding Resource Channels

Traditional audience interaction was limited to telephone orders and SMS subscriptions, which neither permitted real-time engagement nor substantially influenced programming decisions. Converged media operations now facilitate efficient two-way communication, enabling audiences to participate via various media platforms and share multimedia content, transcending text-only limitations. Enhanced network application promises further breakthroughs in interaction modalities and resource acquisition pathways, thereby fostering sustainable industry development [4].

2.3 Accumulating Technical Experience and Predicting Trends Through Big Data

Big data technology exemplifies network technology' s capacity to shape market dynamics. In the converged media era, broadcasting development must prioritize audience interests and viewing preferences. By improving production and interaction efficiency through network technology and systematically accumulating developmental experience, the industry can leverage big data analytics to forecast market trends, select optimal strategic directions, and revitalize audience engagement strategies [5].

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3. Application Overview of Network Technology in Converged Media Broadcasting and Television Engineering

3.1 Developing Service Applications to Expand Market Presence

Network technology has become ubiquitous in modern life, with video platforms employing this technology now dominating leisure time. These platforms have launched mobile and smart TV clients to meet viewing convenience demands, while short-video platforms like Douyin have captured mass audiences through brief, entertaining content. Consequently, broadcasting stations are developing proprietary applications—such as Hunan Satellite TV' s Mango TV —to re-establish presence in frequently accessed media channels. The industry should employ "leveraged publicity," advertising on new media platforms while simultaneously developing quality programs. This approach ensures both content relevance and rapid audience awareness, maximizing market penetration [6].

3.2 Providing Extended Services to Improve Resource Conversion

Online shopping represents another popular daily activity that presents opportunities for broadcasting industry extension. The industry now offers extended services through network technology, such as actor information pages adjacent to programs and collaborative promotion of commercial performances. Soft advertising in dramas aims to generate purchase intent through plot integration, while fantasy dramas with source material can concurrently market related books and merchandise during broadcast. This resource conversion approach proves more efficient and lower-risk than sole reliance on big data analysis, creating additional revenue streams while enhancing viewer engagement.

3.3 Multi-Platform Information Sharing for Data Acquisition and Analysis

Most video platforms support multi-platform login and sharing to enhance promotional reach and user convenience. Broadcasting platforms similarly utilize network technology across social media, implementing interactive campaigns like prize-sharing and quizzes to amplify program information efficiency. By analyzing online activity data, operators can push personalized content and continuously refine recommendations through feedback loops. This iterative cycle yields increasingly customized delivery while accumulating valuable analytical data for strategic decision-making.

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4. Future Prospects and Strategic Directions

4.1 Enhancing Promotional Effectiveness Through Live Streaming

Broadcasting engineering technology should intensify research on real-time interaction capabilities. Development can proceed along two primary paths: promotional live streaming for new dramas and peripheral products, and online broadcasting of large-scale events (the latter already partially realized). This strategic focus should prioritize enhancing promotional impact for both radio and television programs, creating immersive experiences that drive audience engagement and brand loyalty.

4.2 Identifying Development Support Through Network Technology

Meeting diverse audience needs constitutes the foundation of both broadcasting development and information technology advancement. Future converged media expansion will likely incorporate additional "members," with network technology—as the basis for data collection, storage, and analysis—providing crucial directional support. In program investment and peripheral product decisions, network analysis can identify optimal promotional platforms and improve operational efficiency. Future applications should further reduce production costs and facilitate cross-industry collaboration. For instance, big data analysis of a hit series can identify audience consumption tendencies to recommend suitable manufacturers, while actors can release plot-related Easter eggs on social platforms for comprehensive, preference-based advertising. The industry must also synthesize platform feedback to propose improvements, collaboratively refining services to meet evolving audience needs [7].

4.3 Optimizing Interaction and Exploring Customized Content

As network technology advances, optimizing interactive experiences will become increasingly prioritized. Some video platforms currently use big data for preliminary user preference analysis to produce self-developed dramas. Future applications could strengthen preference analysis to provide customized drama services, potentially adopting a crowdfunding-style "I choose, I support"production model funded through online payments. Network technology would facilitate identity verification, crowdfunding support, and information collection services. Combined with VR and other emerging technologies, first-person perspective drama production for specific audiences may become feasible. While costly to produce and view, this approach could drive technological innovation and industry development. Whether to prioritize this direction over traditional video platforms remains a strategic decision for industry management [8].

Conclusion

Analyzing network technology' s application in converged media broadcasting and television engineering is essential for industry advancement. Practitioners should prioritize examining domestic industry development status, understanding the advantages of technological integration, and contemplating current applications and future prospects to formulate grounded, step-by-step development plans that ensure long-term competitiveness.

References

[1] Shu Maohua. A Preliminary Study on the Impact of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. Digital Communication World, 2020(7): 131-132.
[2] Shi Xiaoyan. Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. Satellite TV and Broadband Multimedia, 2020(12): 7-8.
[3] Wang Wei. Research on the Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. Satellite TV and Broadband Multimedia, 2020(1): 33-34.
[4] Yi Zhizhong. Reflections on the Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. TV Technology, 2019(22): 16-17+72.
[5] An Meirong. A Preliminary Study on the Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. West China Broadcasting TV, 2019(22): 227-228.
[6] Li Juyan. Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. West China Broadcasting TV, 2019(7): 186-187.
[7] Zhang Jie. Application of Network Technology in Converged Media Broadcasting and Television Engineering Technology[J]. China Media Technology, 2021(8): 155-157.
[8] Chen Duoxi. Research on Problems and Strategies in Broadcasting and Television Engineering Technology in the Converged Media Era[J]. China Media Technology, 2020(7): 55-56.

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