

Optimization Recommendations for Broadcasting and Television Technology in the Digital Information Age: Postprint

Authors: Yu Jiang

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

Abstract

As the digital information era unfolds, the critical role of broadcasting technology in the development of broadcasting has become increasingly evident. To advance broadcasting technology in the future, emphasis must be placed on its development in the digital information domain. This paper takes this topic for discussion, conducts a comprehensive analysis of the development trends of broadcasting technology, and proposes relevant recommendations for optimizing broadcasting technical standards, with the hope of providing limited assistance for the development of the domestic broadcasting industry.

Full Text

Preamble

Journal: ChinaXiv Cooperative Journal - Media and Development Research

Title: Optimization Suggestions for Radio and Television Technology in the Digital Information Era

Abstract: With the advent of the digital information era, the critical role of radio and television technology in the development of broadcasting has become increasingly evident. To improve radio and television technology in the future, it is essential to focus on its development in the digital information domain. This paper discusses this topic, comprehensively analyzes the development trends of radio and television technology, and proposes relevant recommendations on how to optimize the technical level of radio and television, hoping to provide valuable assistance for the development of domestic radio and television undertakings.

Keywords: Digital information; Radio and television technology; Optimization suggestions

CLC Number: TN948

Document Code: A

Article ID: 1671-0134(2017)07-039-02

DOI: 10.19483/j.cnki.11-4653/n.2017.07.005

Author: Yu Jiang

Introduction: In the present day, the impact of information technology and culture has led to a proliferation of new media, which has significantly constrained the development of traditional domestic media, with radio and television being particularly affected and their living space substantially reduced. Therefore, to enhance their overall competitiveness and strength, it is necessary to further optimize their technical capabilities, enabling them to adapt more quickly to the transformations of the times and societal needs, thereby achieving sustainable development across economic, technical, and other dimensions.

1. Main Measures for Radio and Television Technology Reform

With the changing times, professionals working in radio and television today must first clearly understand the critical significance of improving radio and television technology. Such improvements not only enhance the competitiveness of radio and television undertakings in core social technologies but also help all employees of an enterprise establish excellent work philosophies, improve their comprehensive qualities, and ultimately present radio and television programs with high efficiency and quality. Additionally, those engaged in radio and television work should correctly recognize that the development direction of modern radio and television undertakings lies in making digital audio stations a reality and applying them to practical work. When constructing digital audio stations, robust carriers are required as support—namely, computer systems. By leveraging mastered digital audio technology, optical disc storage information technology, and other tools, the goal of digitalizing radio and television programs can be achieved while also making their playback digital. To reach this objective, it is necessary to strengthen the management of all equipment in machine rooms and relay stations, reasonably improve and perfect management systems and broadcasting operation protocols, and ensure that broadcast programs meet standard quality requirements.

2. Specific Implementation Plans for Improving Radio and Television Technology

Based on the above analysis and discussion, correctly understanding the development needs of radio and television technology can enhance the future competitiveness of its core technologies. As daily life increasingly moves toward digital information, to achieve overall optimization of radio and television technology, continued efforts should be made in the following areas.

2.1 Building Digital Audio Stations

Digital audio stations possess unique performance characteristics and powerful functions, enabling excellent human-computer interaction. Their primary data recording objects are hard disks that can be computer-controlled. Digital audio stations are widely applied in the recording, editing, and smooth playback of various programs. Compared with traditional analog methods used in the past, this approach not only saves material and human resources but also guarantees program quality, making resource sharing a reality. The actual editing and operation processes are highly convenient and secure, thereby enabling digital audio workstations to replace analog methods with digitalization when producing audio programs. To achieve this goal, it is essential to strengthen the management of all equipment in machine rooms and relay stations, reasonably improve and perfect management systems and broadcasting operation protocols, and ensure that broadcast programs meet standard quality requirements.

2.2 Applying Non-Linear Editing Systems to Work

Non-linear editing systems actually originated from film editing, but the meaning of non-linear editing has since been enriched. From a narrow perspective, non-linear editing has the characteristic of not requiring repeated installation when performing editing tasks such as copying and pasting on storage media. From a relatively broader perspective, non-linear editing can achieve special-effects-like editing results when using computers for video editing work, transforming the previous singular mode. When editing existing radio and television programs, the workflow must follow a chronological schedule, requiring the use of numerous external facilities and making the process of calling materials exceptionally complicated. However, if non-linear editing technology is employed, the entire editing process can effectively utilize technical tools from computer-aided programs. By using computers to optimize editing work, the number of facility calls can be simplified, editing efficiency improved, and material selection no longer constrained by time or location. Arrangements can be made according to spatial sequence observation, enabling signal quality to meet standard requirements. This approach not only reduces financial consumption in terms of facilities and personnel but also ensures work quality and improves efficiency, which is particularly evident in saving production time and enhancing visual effects. However, all technologies can only be successfully implemented under effective supervision and management. In this regard, emphasis should also be placed on constructing optoelectronic signal detection systems to strengthen monitoring of radio and television program broadcasting conditions, ensuring that signals and graphics meet standards. Furthermore, in daily work, attention should be paid to regular maintenance and repair of facilities to ensure all equipment operates effectively and stably, vigorously developing radio and television undertakings.

2.4 Rational Utilization of New Media Technology to Improve Technical Capabilities

Emphasis should be placed on constructing digital broadcasting platforms. With technological reforms, traditional radio and television undertakings have already adopted digital technology. In principle, the fundamental difference between reformed radio and television technology combined with internet development and traditional radio and television technology lies in the significant differences in reception methods and terminals, utilizing the digital characteristics of radio and television to achieve positive interaction with audiences. Therefore, it is necessary to explore and research the organizational methods and program content of radio and television programs, continuously innovate, and apply the characteristics of new media to the structure of broadcasting platforms. As technical personnel engaged in radio and television work, it is essential to value the functions of new media and apply them to practical work to enhance one's technical capabilities. In addition to proficiently applying professional skills, one should also strive to learn and continuously strengthen comprehensive abilities. Furthermore, emphasis should be placed on building network platforms. The development of the internet has made people's lives inseparable from networks; therefore, the radio and television industry should reasonably apply internet technology, construct network platforms, optimize the broadcasting forms of radio and television programs, and improve dissemination efficiency and influence. Radio and television personnel must understand network platforms, adapt to the development of the times, utilize the internet to enhance their innovation capabilities, enable audiences to receive radio and television programs on time, and elevate program influence. Optimizing radio and television technology can actually improve its core competitiveness in the social market. To meet the developmental needs of the times, staff must master sufficient new media technology, use internet platforms such as Weibo to achieve positive interaction with audiences, and additionally apply digital technology to improving radio and television program technology, with the goal of ensuring that the core competitiveness of radio and television technology continues to strengthen.

3. Conclusion

With the rapid development of science and technology, radio and television have made great strides in detection technology. However, attention should also be paid to many problems and deficiencies that have emerged in their development. When maintaining radio and television technology, since facility detection actually involves hardware detection with high technical requirements, to ensure quality requirements, it is necessary to strengthen the detection of optoelectronic facilities, fundamentally extend the service life of radio and television facilities, and create a better hardware environment for digital technology. In this regard, the following requirements should be emphasized in daily life: First, conduct regular inspections of all radio and television facilities to identify hardware damaged by temperature effects. Inspection and maintenance work must be taken

seriously, with particular attention to dust removal to prevent facility operation efficiency from being affected. Additionally, identified faults in facilities should be reasonably repaired to ensure that temperature changes in important components such as power supplies remain normal, preventing facility damage caused by undetected excessive temperatures. Ventilation and heat dissipation work should be performed during routine inspections. Second, if radio and television facilities fail, it is necessary to carefully analyze the causes of the failure and use various methods to observe external equipment. For frequently occurring problems, complete handling plans need to be formulated so that all management personnel can correctly understand their responsibilities and ensure that equipment remains in optimal working condition at all times, vigorously developing radio and television undertakings. Third, actively introduce advanced instruments and equipment, strengthen inspection work, particularly by making rational use of instruments to improve maintenance efficiency, formulate relevant plans to promptly troubleshoot and resolve problems, and minimize economic losses caused by faulty equipment.

References: [?] Zhang Bo. A Brief Discussion on the Implementation of Network Digital Radio and Television Technology[J]. Heilongjiang Science and Technology Information, 2011(24): 110. [?] Lv Xiaomei. On Lightning Protection Technology for Radio and Television Transmission Stations[J]. Science and Technology Communication, 2016(10). [?] Kong Jie, Liu Minghua. Comprehensive Lightning Protection Measures for Radio and Television Transmission Stations[J]. Little Writer Selection, 2016(16). [?] Tian Shijie, Li Ruizhen. Lightning Protection and Grounding Measures for Radio and Television Equipment at Transmission Stations[J]. Digital Media Research, 2016, 33(1): 59-61. [?] Ding Jianhua, Liu Meng. Analysis and Treatment Methods for Common Faults in Radio and Television Transmission Antenna Feed Systems[J]. Technology and Enterprise, 2015(12): 228.

(Author's Institution: Xinjiang Radio and Television Bureau, Station 91620)

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

Source: ChinaXiv — Machine translation. Verify with original.