Postprint: Applied Research on Big Data Technology in Radio and Television Monitoring

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Abstract

To ensure the quality and broadcast effectiveness of radio and television programs, television stations must strengthen supervision and monitoring of radio and television, and continuously adjust and improve the content, structure, and system of radio and television through data obtained during the supervision and monitoring process. Big data technology can effectively accomplish this task by monitoring radio and television through its inherent capabilities. Therefore, we need to conduct more in-depth research and analysis on the application of big data technology in radio and television monitoring.

Full Text

3. Application of Big Data Technology in Radio and Television Monitoring

3.1 Data Collection

Prior to the widespread adoption of big data technology, radio and television monitoring systems operated in a traditional mode where data from different broadcasting platforms was fragmented into numerous small segments, each requiring separate monitoring before integration. This constrained polling-based monitoring model, while capable of collecting data comprehensively, demanded substantial human, material, and financial resources and faced multiple limitations. The application of big data technology in broadcasting monitoring has effectively resolved these issues. Monitoring systems can now comprehensively and completely receive broadcast information, enabling timely problem detection, feedback, and resolution during the monitoring process. Furthermore, big data technology offers massive information storage capabilities, preserving television and radio programs not merely as text but in more diverse formats such as video and audio, ensuring more complete content preservation. Broadcasting

personnel can also analyze the various data collected through big data to prevent similar failures from recurring. Effective monitoring of broadcasting status requires leveraging big data technology to integrate, collect, and organize monitoring data, extracting valuable information for analysis from vast datasets to provide technical experience for future issues.

3.2 Information Processing and Professional Model Construction

When conducting real-time monitoring of television and radio program information, data, and broadcast details, it is essential to construct professional models appropriately and focus on processing and analyzing collected data. A professional model is not merely decorative; it must be used correctly to facilitate staff operations. The data and information generated within professional models form what are known as information trees, which broadcasting staff must preprocess effectively to extract valuable data from large volumes of information and rank it by importance before reintegrating it into the information tree for logical classification. Staff should effectively utilize big data as a powerful tool during information processing. Information trees can automatically categorize various types of information collected through big data, significantly reducing staff workload. Moreover, this data is not immutable; personnel can modify and adjust it based on real-world factors. Therefore, constructing professional data models enables faster and more accurate data processing.

3.3 Information Analysis and Early Warning

The ultimate purpose of information collection is analysis. Thus, the most critical task of broadcasting monitoring systems is to analyze information and draw conclusions. These analytical results provide timely and accurate feedback to relevant systems and personnel, enabling real-time understanding of broadcasting program status, rapid identification of issues during transmission, and implementation of appropriate remedial measures to resolve various problems smoothly. Effective information analysis can continuously improve the quality and standards of radio and television programs. Broadcasting staff must integrate monitoring systems with big data technology to conduct comprehensive monitoring of programs, generate analytical reports from monitoring results, and identify patterns that help address potential future issues. Additionally, monitoring information navigation trees can be utilized to help personnel process and analyze data, solving the problem of isolated components in traditional monitoring systems. This integration creates a complete large system that enhances inter-system connectivity, resulting in more logical data and greater accuracy and authenticity of broadcast information.

3.4 Integrated Management Platform Analysis

Big data technology has profoundly impacted societal development and transformation, primarily due to the emergence of more complex data structures and types, along with massive data resources brought by the internet age—

resources that traditional technologies can no longer process and analyze effectively. Consequently, new technologies must be introduced into broadcasting monitoring. Big data technology can properly collect, process, and analyze these vast amounts of information, transforming them into effective data that promotes social development and assists people in their work and lives. In societal development, we must continuously strengthen the construction of big data integrated management and analysis platforms. Such platforms must possess several technical characteristics: First, they must have high-capacity storage space capable of horizontal and vertical expansion to continuously broaden information scope. Second, they must feature high-speed and efficient information processing capabilities, converting various virtual information into concrete data during processing to provide effective references for staff while offering users access, search, and other functional capabilities. Third, they must maintain an objective and reasonable data analysis environment, ensuring that data processing and analysis remain free from objective and subjective influences.

In summary, China' s radio and television industry has developed rapidly in modern society, and big data technology can serve as an effective tool widely applied in broadcasting supervision and monitoring. While big data technology can provide more effective reference data for program monitoring, the data it provides may not be entirely accurate and only holds certain reference value. Although it can summarize patterns within data, these are not exhaustive, and some special patterns cannot be induced. Therefore, while utilizing big data technology for broadcasting monitoring and supervision, we must also employ other scientific technologies as supplements to create a complete broadcasting supervision and monitoring system.

References

[1] Liu Xiao. Application Methods of Big Data Technology in Radio and Television Monitoring[J]. Digital Communication World, 2018(10): 184.
[2] Dai Dongyun. Discussion on the Application of Big Data Technology in Radio and Television Monitoring[J]. Audio-Visual, 2018(7): 247-248.
[3] Yu Huawen. A Brief Analysis of the Application of Big Data Technology in Radio and Television Monitoring[J]. Journalism Research Herald, 2018, 9(8): 243.
[4] Xu Hao. Application of Big Data Technology in Radio and Television Monitoring[J]. West China Broadcasting TV, 2018(7): 184.
[5] Wang Wen. A Tentative Discussion on the Application of Big Data Technology in Radio and Television Monitoring[J]. Research on Transmission Competence, 2018, 2(10): 245-246.
[6] Fan Xiuhua. Research on the Application of Big Data Technology in County-Level Radio and Television Monitoring[J]. TV Guide, 2018(1): 231, 233.
[7] Gao Qi. How to Use Big Data Technology to Advance Radio and Television Monitoring and Supervision Work[J]. Science and Technology Innovation Herald, 2017, 14(15): 180-181, 183.

[8] Cheng Shi, Liu Zhiwei. Exploring the Application of Big Data Technology in Radio and Television Monitoring[J]. Communication World, 2017(8): 100.
[9] Lü Haiying. Research on Using Big Data Technology to Advance Radio and Television Monitoring and Supervision Work[J]. Public Communication of Science & Technology, 2016, 8(21): 58-59.

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