

## Reflections and Discussions on the Application of Big Data Technology in Broadcasting and Television: Postprint

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### Abstract

In the contemporary era, the big data era is developing explosively and continuously permeating people's production and daily lives. Due to its massive data scale, people can extract valuable information from these vast datasets, representing a tremendous transformation compared to traditional information collection and processing models, saving significant amounts of time, manpower, and material resources, and substantially altering the public's production and lifestyle patterns. Naturally, this technology is also being continuously applied and promoted in the broadcasting and television field, fostering the healthy and sustainable development of the broadcasting industry. Therefore, this paper will analyze and discuss the application of big data technology in the broadcasting and television domain, and propose feasible measures to address related challenges, thereby laying the foundation for the deepening development of the broadcasting industry.

### Full Text

## Reflections and Explorations on the Application of Big Data Technology in the Broadcasting and Television Field

**Abstract:** In today's era, the big data epoch is developing explosively and continuously permeating people's production and daily lives. Characterized by massive data scale, it enables people to locate valuable information from these vast repositories, representing a dramatic shift from traditional information collection and processing models while saving substantial time, manpower, and material resources. This transformation has fundamentally altered public lifestyles and modes of production. Naturally, this technology is also being continuously applied and promoted in the broadcasting and television field, fostering the

healthy and sustainable development of the industry. Therefore, this paper analyzes and explores the application of big data technology in broadcasting and television, proposing practical and feasible measures to address existing challenges, thereby laying a foundation for the industry's deepening development.

**Keywords:** big data; broadcasting and television; application measures

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With the rapid development of computer network technology, big data technology has emerged and matured, ushering humanity into the big data era. This new epoch is propelling the broadcasting and television field toward informatization, networking, technicalization, and modernization, giving rise to new domains such as broadcasting network development, news information network construction, and network operation and maintenance. The advent of big data technology has precipitated a new revolution in broadcasting and television. While the industry has achieved considerable development under this backdrop, it simultaneously faces a series of challenges—truly a situation where “challenges and opportunities coexist, with both gains and risks present.” To ensure healthy and sustainable development that aligns with contemporary trends and satisfies public demand for cultural products, broadcasting authorities must innovate their development models and enhance their comprehensive capabilities, thereby steadily advancing amidst the big data wave. This represents both an inevitable social trend and an essential requirement for industry development.

### 1.1 Enhancing Broadcasting Service Platforms

The big data era imposes new demands on broadcasting and television, requiring continuous business improvement and innovative transformation to stand out in the big data wave. The integration of big data technology into broadcasting has expanded services to include news construction, network maintenance, audience feedback mechanisms, and other areas, while significantly improving operational efficiency and resource integration capabilities.

### 1.2 Deepening Customer Understanding Through Big Data Resources

Big data technology implies massive information repositories in databases. In recent years, socioeconomic development and scientific advancement have propelled internet technology into millions of households and across various industries. Big data enables information sharing from diverse fields and global regions. In this context, people can access worldwide information via the internet and computers to locate desired content. Broadcasting program directors and producers can leverage audience evaluations to gain deep insights into customer needs, allowing them to emphasize specific aspects in program production and direction, thereby maximizing satisfaction of public spiritual and cultural needs

and serving the deepening development of socialist spiritual civilization.

## **2. Development Prospects of Broadcasting Industry Under Big Data Background**

The arrival of the big data era has driven upgrades and reforms across all social sectors. The broadcasting industry has also begun seeking new transformations and developments under this backdrop. This requires the industry to proceed from its actual conditions, fully implement government fiscal policies, optimize and upgrade internal management, and effectively improve management forms, network innovation, and service quality. Undoubtedly, the broadcasting industry has achieved certain development results in the big data context—its audience base is gradually expanding, viewership is increasing daily, and its attractiveness is continuously strengthening. Its advantages and capabilities have been fully highlighted, largely satisfying public demand for spiritual civilization development. However, numerous factors still hinder stable and sustainable development, including a relative shortage of technical personnel (both in quantity and quality) and the lack of advanced management models that fail to effectively mobilize staff enthusiasm and initiative, creating negative impacts for future development. In this environment of coexisting opportunities and challenges, the broadcasting industry must examine itself objectively and rationally, improve management skills, emphasize the importance of theoretical knowledge and technology, and fully leverage their guiding role in practice.

## **3. Current Development Status of Broadcasting Industry Under Big Data Background**

The emergence of big data has not only changed people's understanding of data but also elevated data analysis and processing capabilities. Big data technology has enabled the broadcasting network's transition from analog to digital, gradually pushing it toward the big data era. From the current development perspective, while the broadcasting industry is rapidly developing, it has also exposed numerous problems that significantly hinder further progress. Facing increasingly fierce market competition, the broadcasting industry must comprehensively examine its existing problems, analyze them one by one, seek countermeasures for future work from its deficiencies, and draw lessons from its mistakes. Only through efficient management measures can a necessary institutional foundation be laid for scientific industry development.

### **3.1 Outdated Ideological Concepts**

As an emerging scientific technology, big data has triggered a revolution in human social development—justifiably termed a new technological revolution of the twenty-first century. The big data era signifies not only tremendous changes in production and lifestyle but also a massive impact on public thinking, fundamentally altering people's mindsets and worldviews. Naturally, the application

and promotion of big data technology in broadcasting require staff to transform their thinking, continuously update their concepts, and keep pace with the times to meet new industry demands. However, current conditions reveal that some personnel maintain outdated concepts, preserving traditional work thinking patterns, showing inflexibility and rigidity that are incompatible with big data era requirements. They reject or even resist big data technology psychologically. This ideological gap frequently leads to conflicts in work, which is detrimental to long-term industry development. Therefore, implementing practical measures to address this issue is an urgent priority.

### **3.2 Insufficient Professional Personnel**

The application and promotion of big data technology impose new skill requirements on broadcasting staff. Equipping the industry with professional personnel who can apply their knowledge and capabilities to serve broadcasting development and highlight talent advantages is essential. However, reality presents a bleak picture: the industry suffers from professional staff shortages, incomplete understanding of big data and cloud computing technologies, and unskilled operations prone to errors. When problems arise—whether human-caused or due to network system failures—the lack of professional personnel prevents timely and effective system maintenance. Broadcasting organizations must then hire expensive external contractors, wasting substantial time, energy, material, and financial resources, increasing operational costs while reducing efficiency and service quality. This factor makes it difficult to unify economic and social benefits, creating significant deviation from original development goals.

### **3.3 Singular Management Model**

Big data technology penetration in broadcasting requires the industry to elevate management models, optimize structures, and enhance capabilities through integration with big data technology and full utilization of new media platforms to improve comprehensive management capabilities. However, current development shows singular management models, with the industry still following traditional patterns without deepening reforms according to changing times. When facing business, marketing, and conceptual challenges, the industry continues using traditional marketing models that are overly passive, lacking deep and thorough understanding of user needs, leading to declining sales performance. Meanwhile, performance evaluation mechanisms are still formulated according to traditional development models, resulting in systems that lack feasibility and practical operability, fail to gain staff support, and even exist in name only, preventing the industry from achieving expected development results.

## 4. Development Strategies for Broadcasting Industry Under Big Data Background

In the more competitive market environment of the big data era, the broadcasting industry—responsible for transmitting and receiving images, videos, audio, and information, and playing a guiding role in public spiritual and cultural literacy—must carefully and comprehensively analyze its existing problems and formulate practical measures based on current conditions to better serve public production and daily life, especially in an age where everyone can be a self-media voice.

### 4.1 Continuously Update Ideological Concepts to Keep Pace with the Times

The big data era signifies accelerated social development and replacement, where the survival principle of “survival of the fittest” applies. To secure a favorable position in fierce competition and grasp market trends and social resources, the broadcasting industry must first transform staff thinking. Personnel must fully recognize and emphasize the importance of big data technology in broadcasting, actively record its positive impacts, and subconsciously accept and acknowledge this technology. Ideologically, they must align with development trends; psychologically, they must accept and support big data application and promotion. Outdated, obsolete, and decaying concepts must be abandoned in favor of innovation and self-adjustment, laying a solid foundation for further big data application in broadcasting. Such transformation enables the industry to establish stable footing and deepen development in the big data era, seeking its most suitable survival path in the big data wave.

### 4.2 Cultivate and Develop Professional Personnel

As China’s traditional media representative, the radio and television industry has long dominated the media market. However, rapid scientific development, socioeconomic progress, and the emergence of information technology have given rise to big data and new media technologies, creating certain impacts on broadcasting development. How to extract valuable information from massive data has gradually become the main challenge facing broadcasting professionals. To better promote big data technology in broadcasting, we must fully recognize the human element. Therefore, we must cultivate and develop technical professionals. For existing staff, we should organize expert lectures, symposiums, video promotions, and regular training to continuously improve their scientific skills. For external professionals, we should adopt measures to attract their participation to serve sustainable industry development. Economic incentives can encourage professional involvement through equity participation and profit sharing, creating a talent magnetic field and leveraging policy appeal. Performance evaluation systems can also motivate professionals, mobilizing their enthusiasm to dedicate their expertise and experience to broadcasting development, thereby highlighting the advantage that talent is both resource and productivity.

### 4.3 Optimize Management Models and Innovate Management Structures

Regarding big data technology application in broadcasting, we should not only conduct in-depth technical research but also implement management-level reforms to remove obstacles for industry digitization and improve service levels and people's quality of life. The big data era imposes new requirements on broadcasting development models and structures, demanding continuous integration and optimization. Complex and redundant management structures should be streamlined to avoid unnecessary cost expenditures and financial investments. Supply-side reforms must be implemented in human resources, marketing, network construction, financial management, and social responsibility. Strategic objectives should be clarified by incorporating the broadcasting industry into the state-owned enterprise management system, transferring management authority from party committee propaganda departments to state-owned enterprises. Administrative means should be utilized during integration to clarify relationships between group companies and provincial/municipal companies. Additionally, the broadcasting industry's evaluation system should be improved to ensure effective market alignment. Scientific and reasonable promotion mechanisms should be established based on actual company development conditions to create an operational advancement system, implementing the development concept of making the best use of human and material resources throughout the entire industry development process.

### 4.4 Big Data Operation and Maintenance Strategies

As an important traditional media entity, broadcasting departments face enormous crises and must introduce big data technology to solve data storage and processing problems, seeking new breakthroughs. Based on this technology, we can conduct vertical and in-depth mining of broadcasting industry data, construct intelligent expert systems according to industry development needs, accurately locate fault occurrences, and carefully examine processes and details. Network resources in the broadcasting field can be accurately configured, and data on service content and monitoring business can be comprehensively obtained. During data processing, different cleaning strategies should be adopted according to various business needs to filter or clear unimportant data or low-value information. Meanwhile, scientific, reasonable, and simple strategies should be employed to extract and integrate different data sources. Therefore, in the big data era, the broadcasting industry can employ diversified data analysis methods to meet system requirements for high-precision data. Simultaneously, this approach continuously improves service quality. Furthermore, stable system operation also requires enhanced staff awareness of prevention and maintenance. In practical operations, staff must standardize their behavior according to rules and regulations to avoid errors or unnecessary problems caused by improper operations. Establishing prevention and maintenance awareness in practical work plays a crucial role in broadcasting operations, reducing system failures, low-

ering production costs, improving service efficiency, expanding coverage, and ultimately unifying economic and social benefits.

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

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