

Big Data Technology Supporting Converged Media Construction: Reflections and Analysis (Post-print)

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Abstract

In recent years, continuously advancing technology and the increasingly pervasive Internet have ushered society into the era of big data. The increasingly sophisticated big data technology has profoundly transformed information dissemination modalities, expanded information volumes, broadened information channels, and catalyzed the emergence of new media. This mature big data technology exerts substantial influence across numerous industries in China, with its most pronounced impact manifesting in the media sector, encompassing information and electronic technology domains. Media infrastructure development, undergirded by big data support, facilitates the integrated convergence of traditional and new media, thereby enhancing systemic stability. Consequently, this paper further examines strategies for constructing converged media underpinned by big data technology, aiming to provide valuable references and insights for relevant institutions.

Full Text

Preamble

Title: Reflections on Big Data Technology Supporting Converged Media Construction

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Abstract: In recent years, continuous technological advancement and the widespread adoption of the Internet have ushered society into the era of big data. Maturing big data technologies have profoundly transformed information dissemination methods, increasing information volume, expanding information channels, and facilitating the emergence of new media. These technologies have significantly impacted numerous industries in China, with the media sector—

encompassing information and electronic technologies—showing the most pronounced effects. The construction of media relies on big data support, which promotes the integrated development of traditional and new media while enhancing stability. This paper further explores strategies for big data technology to support converged media construction, offering references for relevant institutions.

Keywords: Converged Media; Technical Support; Big Data Technology; Media Convergence; New Media

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2. Significance of Converged Media Construction

The vigorous development of the Internet and mobile networks has brought revolutionary changes to technology. Against the backdrop of rising online media and Internet TV, traditional media's development direction has shifted, enabling it to span different platforms and fields, continuously expand its business scope, and improve its data operational capabilities. Data, as a hallmark of the information age, possesses infinite value and development potential. Traditional media's big data technologies and information resources have been widely applied. With the support and assistance of big data technology, the media industry can rapidly collect and analyze data information, providing new growth opportunities that enrich media connotation and functionality. In this context, the state has vigorously promoted the integrated development of traditional and new media, which has become the mainstream trend in the media industry.

1.1 Connotation of Big Data Technology

Big data technology essentially represents the aggregation of specialized data from the IT industry. To enable big data to possess process optimization capabilities, insight discovery, and strong decision-making power, advanced processing patterns must be applied to transform it into information assets characterized by diverse formats and high growth rates. Its main features include low value density, high velocity, diversity, and veracity. Furthermore, big data is closely linked with cloud computing, and both are indispensable. When applying big data, if a single computer cannot complete the necessary processing tasks, a distributed architecture must be employed, integrating multiple technologies such as virtualization, distributed databases, and distributed cloud computing to extract massive amounts of data. Therefore, mastering the relevant content of big data is of great significance. During data-related processing work, big

data technology actively promotes the construction of media convergence development and significantly enhances media dissemination capabilities.

Making full use of traditional media helps establish a converged media information platform, which is highly beneficial for media convergence development and business expansion. Current converged media platforms possess numerous capabilities, including data information transmission and classification, providing operators with timely, effective, and authentic information to facilitate the development of targeted services and products. The main functions are as follows: providing comprehensive, accurate, and objective data information to traditional media practitioners and operators; offering direction for media improvement and effective supervision; providing opportunities and technical support for the integrated development and platform construction of traditional and new media; revealing new development paths that facilitate further development between investors and operators; and enabling the collection of user and client information across the entire network, which serves as an important resource for building and developing converged media platforms. Promoting media convergence development requires leveraging the high-tech capabilities of big data platforms under big data technology conditions.

1.2 Connotation of Converged Media

From a certain perspective, the exploration of converged media's predecessor is converged media. This concept was first proposed by an American professor to describe a trend toward the multifunctional integration of various media. As it evolved, the concept gradually enriched. Nicholas Negroponte, a futurist, proposed the representative view of "three overlapping circles"—the computer industry, broadcasting television industry, and publishing industry—which would show overlapping and converging development trends under the digital wave. Converged media has gradually become converged media. Under the support of big data technology, making full use of interface-related protocols promotes the establishment of a sound service system, continuously improves the level of parallel data processing, enhances the functionality and practicality of converged media platforms, increases media dissemination power, discloses valuable information, improves data transparency, greatly enhances people's quality of life, and ensures stable and healthy social development.

3. Role of Big Data Technology in Supporting Converged Media Construction

3.1 Management Support

From a management perspective, the application of big data can provide certain support for converged media construction and play a supervisory and management role in the media industry. First, the scientific application of big data technology enables research and supervision of relevant programs, dynamic monitoring of big data information, and the utilization of intelligent data processing

platforms to perform corresponding operations on data. Through the use of relevant media, various forms of media can be delivered, ensuring synchronized broadcasting and achieving the goal of rapid and accurate information dissemination. This promotes the improvement of monitoring levels and capabilities, ensures high accuracy and speed, and facilitates the immediate application of big data technical methods to resolve identified anomalies, guaranteeing high-quality media content. Second, with big data support, public opinion can be controlled by identifying the specific conditions of audience groups, reflecting the requirements of different groups, and thereby carrying out predictive work in a planned and purposeful manner to adjust corresponding content and objectives. Third, relying on big data technology enables real-time, dynamic monitoring of media content, management of copyright work, severe crackdowns on illegal versions, effective protection of legitimate copyrights, and provision of corresponding data information for the sustainable development and growth of media convergence.

3.2 Technical Support

Technological advancement and support constitute the foundation and prerequisite for media convergence construction and development, and big data technology actively promotes the comprehensive development of media convergence. First, through big data technology, users' individual needs can be mined and analyzed, allowing for the creation of highly targeted content based on user preferences. Second, leveraging big data technology continuously expands the fields of media convergence development and information consumption, providing more information services. In addition to content products, it enables deep integration of games, e-commerce, lifestyle services, and other content, converging media with production, continuously expanding channels, and extending traditional media to combine with broadcasting, television, and new media. This creates an integrated new media platform that can generate different audio and video content through a single collection process, enabling real-time transmission and operation, achieving resource centralized scheduling and media overall planning, ensuring flexible interactive needs, greatly improving production efficiency, and taking meeting the specific needs of different users as the premise to continuously enhance user stickiness, guarantee media convergence and development, and maximize its role and value.

4. Key Points of Big Data Technology Support for Media Convergence Construction

The prominent characteristic of big data technology is its complex diversity. From the perspective of data information sources and content, it is extremely complex, necessitating analysis and processing work. Data information mainly involves content such as SQL, video, audio, text, and images, with complex sources intertwined with massive amounts of information data. In the digital network era, data information spreads rapidly. To ensure the timeliness of infor-

mation dissemination, data must be processed and analyzed quickly. Therefore, the urgent problem to be solved in converged media construction and development is improving data analysis and processing efficiency. Regarding big data, relevant staff must conduct objective and meticulous research and statistical work to fully extract valuable information from massive data and formulate effective solutions to address corresponding problems promptly. Symmetric distribution structures can be used to build systems to enhance their practicality, scalability, and expandability, and more servers must be invested to meet the actual needs of different media. Under the support of big data technology, many modules including analysis and classification search are integrated into the media platform. The analysis and indexing functions in the system modules are extremely powerful, directly connecting to data business, enabling rapid analysis and screening of valuable information data from multiple paths, facilitating comprehensive coverage of data information, and fully utilizing data to strengthen dissemination channel analysis and provide reference information to support relevant staff in making better decisions.

5. Measures for Big Data Technology Supporting Converged Media Construction

5.1 Data Research

In the new era and under new circumstances, analyzing media industry and economic development data information leads to the conclusion that, from an overall perspective, the development trend of media industry economic data is upward, reflecting the industry's enormous development potential. However, traditional media economic data shows a continuous downward trend, while the rising trend of new media year by year proves that the continuously developing new media significantly impacts traditional media's market share and business domain.

5.1.2 Data on Development Issues in the Media Industry Traditional media and new media each have their advantages and problems. To achieve the goal of media convergence development, it is necessary to maximize benefits and avoid harm, attaching great importance to solving various problems. Therefore, it remains necessary to further analyze and research various issues in media development to clarify the shortcomings of new media development and the problems of traditional media. Conducting data analysis and research work can provide referential basis for determining the mainstream direction and main trends of converged data, ensuring its future development.

5.2 Clarifying Objectives

For media convergence construction, clarifying objectives is the core and key. Only in this way can the future development direction be grasped and work effectiveness maximized. With the support and assistance of big data technol-

ogy, media convergence work can be better carried out, fully demonstrating its advantages and functions. First, clarifying objectives. Taking a local radio station as an example, under the influence of new media popularization, traditional television's market share has decreased significantly. In this context, it is necessary to effectively utilize new media and clarify long-term development objectives. Through analysis of relevant data information, it is concluded that the number of Internet users in China has multiplied, with a large number of netizens watching online videos. This presents an opportunity for television stations to innovatively produce online videos beyond their original business, increase promotion efforts, take this as a development goal, actively build network sites and client ports, and thus open up network channels to achieve the purpose of common development between television stations and new media. Second, clarifying benefit objectives. For traditional media to occupy a dominant position and gain development advantages in the new media environment, correct benefit objectives must be established to ensure that various tasks are implemented with reference to these benefits. The construction of benefit objectives can strengthen overall work and promote the improvement of relevant work efficiency and quality.

5.3 Converged Data Aggregation Modules

5.3.1 Converged Media Creation The full application of big data technology facilitates the construction of service information system platforms for processing various types of data information. To architect central converged media and process layer data systems, the integration of big data technology is essential, simultaneously promoting capabilities for centralized, selective, and sampled data processing to enable data screening and cleaning within a certain timeframe, ensuring high precision and reliability of data. Converged data platforms must support various data types. Processing and fusing information through big data technology can rapidly concentrate various social focus events in a short period, promote the integration of traditional media and information technology, and under the effect of big data technology, facilitate the further development of related information, greatly improving program quality.

5.3.2 Internal Big Data When constructing converged media, the data silo problem must be given high priority. Using big data cloud platforms facilitates the unification of data platform content, effectively solving various deficiencies and problems related to external data, increasing some standard services, and achieving the goal of unified management of various businesses and unified data exchange. After applying a unified database platform, it promotes the aggregation, collection, fusion production, and release of all-media clues, and enables retrieval and analysis of big data. The big data analysis function has strong pertinence and feasibility for relevant data involved in content, not only effectively utilizing output results but also using them as reference basis. The foundation of big data formation is network data behavior, which differs from traditional data structures. Big data can accurately locate the hobbies and network behaviors of

all individuals, providing more convenience for application personnel to obtain required content in a short time. On the other hand, this data analysis function can push advertisements, greatly improving promotion and dissemination efficiency.

5.3.3 External Big Data During media convergence and construction, in addition to effectively analyzing relevant parameters of external data, corresponding services must be integrated to increase personalized features and avoid purposeless data collection and analysis summarization. To comprehensively and rapidly collect data, Internet data network forums and Weibo information constitute the main content of information sources. Moreover, through the application of big data technology, distributed algorithms such as data processing and feature engineering can be constructed to perform real-time summarization, collection, and analysis of these massive data. Through the application of complex computing, precise business insights can be guaranteed.

5.3.4 Evaluation and Improvement The final link in media convergence construction is evaluation and improvement. Evaluation mainly manifests in the acceptance work conducted for media convergence architecture and operation, with the benefit of comprehensively understanding operational status and actual business comprehensive effectiveness. Through acceptance work, relevant functions and advantages can be clarified to better grasp the drawbacks and problems in the convergence process, thereby providing convenience for formulating optimization plans based on deficiencies and improving the comprehensive effectiveness of media convergence construction.

In summary, for the media industry currently in a period of rapid development, the support of big data technology has prompted the development trend to transform into converged media construction. Through the utilization of converged media platform systems, the goal of intersecting network-wide data information and related business can be achieved, thereby developing valuable and meaningful data hidden in big data, which is conducive to substantially improving media dissemination capabilities and levels and actively promoting industry progress and growth.

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