

# Integration and Innovation of News Publishing Technology in the Big Data Environment: Post-Print

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

## Abstract

Amidst the development of the big data era, the domestic news publishing industry has undertaken corresponding innovations. Leveraging relevant methodologies of the big data era to continuously propel the rapid development of the news publishing industry enables the sector to manifest renewed vitality and dynamism. Through industry innovation and exploration of publishing modalities based on big data, and upon launching corresponding categories of news publishing services, transformations are effected upon the development of China's news industry via systematic classification. Concurrently, integrating relevant technologies into the digital transformation of the news industry facilitates sectoral adaptation to big data, fosters the exploration of corresponding strategies, achieves information integration through the aggregation of news resources, and utilizes relevant models for the dissemination of data information.

## Full Text

### Preamble

**Title:** Integration and Innovation of News Publishing Technology in the Big Data Environment

**Abstract:** In the era of big data, China's news publishing industry has undertaken significant innovation. Leveraging big data methodologies accelerates industry development and injects new vitality. By exploring industry innovation and novel publishing forms based on big data, and introducing new service types through appropriate classification, the industry can achieve transformation. Meanwhile, integrating technology into digital transformation facilitates adaptation to big data, enabling the development of effective strategies. Through aggregating news resources, information integration can be achieved, and data dissemination can be conducted via relevant models.

**Keywords:** big data; news; publishing

**CLC Number:** G230.7

**Document Code:** A

**Article ID:** 1671-0134(2018)05-062-02

**DOI:** 10.19483/j.cnki.11-4653/n.2018.05.014

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Currently, the news publishing industry is in a transitional stage that requires journalists to engage in thoughtful conceptual innovation, integrate corresponding graphic and text information to establish multi-dimensional data dissemination forms, and create data integration within the larger industry.

## 1. Current State of News Publishing

News publishing is fundamentally based on information. In the big data era, the development of new forms of news publishing exhibits distinct characteristics and patterns. Built upon this foundation, novel news publishing forms emerge, creating new industry products that can be transformed into economic benefits to better serve the news publishing sector [2].

### 1.1 News Information Products

In the big data era, news publishing has given rise to new methods, accompanied by innovation and transformation in publishing products. News content is typically described semantically to better satisfy customer needs. Website information platforms are employed to construct data through semantic analysis. In dynamic library management, personalized content emerges through user participation. In digital news management, data transmission and updates are implemented to track news timelines, facilitating service management in the news industry.

### 1.2 News Management Services

In the development of big data, the news industry must manage relevant content and cannot remain constrained by traditional publishing service methods. Through new forms of news for mass information dissemination, the public can form impressions and obtain general understanding after learning about relevant news timelines—this constitutes the role of news communication. Relevant news information is shaped in news media to create public opinion atmospheres, and relevant environments must be simulated to transmit human reactions, thereby creating relevant environments in the real world to promote China's economic development and construction [1].

### 1.3 Domestic and International News Publishing Technologies

Relevant methods and strategies can also utilize advertising for product promotion, ensuring optimization of news publishing products and guaranteeing the

effectiveness of news publicity.

## **2. Challenges Facing News Publishing**

In the current era of data explosion, news publishing institutions face both challenges and opportunities. With the continuous development of information technology, they must learn to optimize news publishing operations, improve production efficiency, and expand business scale. During this period, sound plans must be formulated.

### **2.1 Integration of News Publishing Technologies**

As news publishing technology achieves major development, its digital management models have transformed significantly. The key to achieving news publishing transformation lies in unifying data operations and establishing stable information data sharing platforms. This promotes reform and innovation in digital publishing structures regarding publishing content, improves digital operation plans, and unifies management standards. Under these standardized provisions, data sharing platforms are established to satisfy the needs of news publishers.

### **2.2 Innovation in News Publishing Technology**

News publishing is characterized by timeliness and real-time demands. In allocating news media resources according to corresponding distribution ratios, without an innovative management spirit, current requirements for news publishing work cannot be met, nor can the distribution needs of news publishing institutions be satisfied, creating large gaps within the industry. Various institutions operate independently, often resulting in multiple interpretations of a single piece of information, making it impossible to properly interpret news information.

### **2.3 Management Innovation in Big Data**

As the big data era continues to develop, the value of information increasingly rises—this is an issue that must be considered in information data management. How the news publishing industry can ensure smooth operations and improve data authenticity constitutes the foundation of its work. Due to continuous network data propagation, data loss often occurs, creating difficulties for data protection efforts.

### **2.4 Adaptability in News Publishing**

Big data has enhanced news publishing outreach, and by utilizing data-driven planning and conducting user research, scientific strategies can be developed to facilitate the promotion of new technologies. Through investigating user background materials to analyze customer behavior, developing innovation in

news publishing industry data information on this foundation not only generates impact within the industry but also influences the strategic planning of news publishing enterprises. Therefore, both news publishing technology and strategy should implement relevant data management to improve industry adaptability and more effectively utilize data resources.

### 3.6 Talent Acquisition for Innovation Promotion

As China's digital publishing industry accelerates into the fast lane of development, traditional news publishing teams have not yet completed digital transformation, and the serious lack of technical literacy has become a bottleneck for integrated development. For news publishing units' transformation and upgrading, the transformation of talent—this core productive force—is the most fundamental transformation. The industry's demand for digital publishing talent has shifted from native digital publishing talent to comprehensive fusion talent—individuals with technical understanding and confidence, with industry expertise, capable of serving the industry and society, able to conduct content planning and proficient in content operation. These talents represent new blood for the news publishing industry in the big data environment.

## 4. Innovation in the News Publishing Industry

Most digital products are released through traditional publication methods, with a corresponding lack of innovation in new product forms.

### 4.1 Innovation in News Product Forms

Digital products undergo morphological evolution based on changes in their dissemination media and methods. The development of China's digital products has progressed through three main stages: The first stage was network newspaper and journal products. In the early 1990s, China saw digital newspapers and journals created through computer technology combined with network digitization, with *Shenzhou Xueren* being China's first digital journal. The second stage was database establishment. As digital technology became widely used in journals, databases were established on networks to collect relevant academic papers. The third stage is through smartphone mobile terminals. As intelligent products continue to develop, digital products have entered a peak period. Traditional products are mainly expressed through two forms: printed products and recorded products. Digital products are more convenient and advantageous, allowing diverse presentation of products through network information technology, with significant developments in digital books, digital newspapers, and other areas. Digital products are better adapted to contemporary social life, creating no obstacles for people's lives and providing convenience [3].

## 4.2 Integration of Traditional and Digital

Within the news publishing industry, traditional business still occupies an important position as the foundation of industry development. The stability of the traditional industry affects industry development and digitalization progress. Therefore, a mutually developmental and coordinated model must be maintained between traditional business and digitalization to promote progress in the news publishing industry.

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[2] Tian Jun. Research on New Business Models of Big Data Application in the News Publishing Industry[J]. Communication and Copyright, 2017(8): 47-49.

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## 3. News Publishing Strategy Under Big Data

In the development of the big data era, for the news publishing industry to have good development prospects, it must formulate development strategies for future direction...

### 3.1 News Publishing Technology Innovation

Through new products, news publishing upgrades corresponding science and technology, enabling increasingly rapid development. In development, the news publishing industry must conduct reasonable planning and formulate relevant strategies. For news publishing, the foundation of survival and development is traditional business. Although continuous development of news publishing technology has not yet changed the position of traditional business, the combination of traditional industry with emerging technology can promote the development of news publishing institutions. In managing traditional business, it is necessary to ensure sufficient revenue for news publishing and, on this basis, allocate partial funds for new technology research and development, continuously improving technical capabilities and achieving technology innovation.

### 3.2 Digital Product Upgrading

The products of the news publishing industry are primarily information collection and sales. Digital technology has been applied throughout the production of information products and plays an important role in product research and development, facilitating diversified product innovation. Currently, information products are mainly produced by news publishing institutions, most of which are

expanding business through diversified development models. Product marketing should apply some traditional sales concepts to promote marketing thinking and methods.

### 3.3 New Technology Research and Development

News publishing should be based on its own business areas to innovate relevant technologies, enabling development to keep pace with customer needs. In the big data era, news publishing must utilize new technologies, using computer technology to establish digital archives. Through data collection, news publishing institutions can obtain large amounts of data information, which also saves collection costs and increases profit. Meanwhile, innovation in news publishing technology helps streamline work procedures and processes, while assisting relevant technical means to innovate traditional technologies. This combination of old and new methods can improve the comprehensive strength of news publishing institutions.

### 3.4 Database Establishment

The goal of news publishing is to serve users. Regardless of what technology is used, user needs must be prioritized. Through corresponding website construction on the internet, users' sense of belonging is satisfied. By establishing relevant institutions to attract more people to join, this not only improves news publishing efficiency but also promotes products through social publicity, increases economic income, lays foundations for news publishing, and integrates news publishing information.

### 3.5 Digital Management Methods

News publishing institutions can adopt digital information management methods to solve many problems that cannot be resolved in traditional business. Because traditional business revenue is far lower than digital business, the development of digital business must not cause cost losses to traditional business. Regarding product production efficiency, institutions must improve their product value and appreciation space, adopt computer technology to reduce production costs, establish reasonable operation models, and reduce relevant cost expenditures.

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

*Source: ChinaXiv — Machine translation. Verify with original.*