

Research on the Digital Transformation Path of Traditional Book Publishing Industry in the Context of Big Data, Artificial Intelligence, Mobile Internet, and Cloud Computing (Postprint)

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Abstract

Currently, under the impetus of information technology, the era of digital empowerment has emerged, with various industries embarking on preliminary information-based reforms. The traditional publishing industry is likewise experiencing a dual impact of opportunities and challenges within this context. To advance with the times, align with market development trends, seize market opportunities, and address challenges by formulating effective countermeasures, reading is transitioning toward ‘paperless’ formats against the backdrop of ‘大智移云’ (Big Data, Artificial Intelligence, Mobile Internet, and Cloud Computing). This paperless reading mode demonstrates high consistency with the ‘green development’ concept advocated by China. The public also exhibits a growing preference for data convenience and transmission processes. In light of this, this paper discusses development strategies for the editing and publishing industry under the ‘大智移云’ background, analyzing how to effectively improve editing and publishing workflows under the ‘大智移云’ background.

Full Text

Preamble

Research on the Digital Upgrade Path of Traditional Book Publishing Industry Under the “Big Data, AI, Mobile, and Cloud” Era

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Abstract: In today’s era, driven by the advancement of information technology, the age of digital empowerment has arrived, prompting preliminary information reforms across all industries. Traditional publishing faces a dual impact of opportunities and challenges in this environment. To keep pace with the times,

align with market development trends, seize market opportunities, and meet challenges with effective countermeasures, the publishing industry must adapt. Under the “Big Data, AI, Mobile, and Cloud” context, reading is shifting toward “paperless” modes that align closely with China’s “green development” philosophy. The public increasingly favors data convenience and streamlined transmission processes. In view of this, this paper discusses development strategies for the editing and publishing industry under this background, analyzing how to effectively improve editing and publishing workflows.

Keywords: Big Data, AI, Mobile, and Cloud; traditional publishing industry; digitalization; transformation and upgrading

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1. Transformations Faced by Traditional Publishing Under Digital Technology

The widespread application of big data has significantly impacted the traditional book publishing industry, driving transformation across multiple dimensions including social demand, publishing processes, product diversification, and business models.

1.1 Digital Technology Reduces Social Demand for Traditional Publications

Internet and big data technologies have shattered temporal and spatial constraints on human communication, accelerating information flow at an unprecedented pace and diversifying channels for accessing needed information beyond specialized books and journals [1]. In 2019, China published 225,000 new traditional book titles, while internet-based e-books—valued for their content diversity, low acquisition costs, and easy reproduction and dissemination—have gained strong support from young and middle-aged readers. The rise of online self-media has flooded the internet with articles on technology, education, medicine, science, and lifestyle, posing significant challenges to traditional publishing. Although total print numbers have increased, this growth stems primarily from higher print runs of individual titles, such as *Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era* exceeding 78 million copies and *Excerpts from Xi Jinping’s Discussions on “Staying True to Our*

Original Aspiration and Keeping Our Mission Firmly in Mind reaching 47 million copies. Beyond sustained consumer enthusiasm for outstanding original works, most books show declining performance. Meanwhile, China's digital publishing industry demonstrates robust growth, with market growth rates continuously exceeding 15% annually, as traditional print media gradually shifts toward internet platforms.

1.2 Digital Technology Changes Traditional Publishing Processes

Traditional book publishing requires collecting relevant information and materials through various channels before integration and publication [2]. This approach inevitably suffers from poor timeliness and weak practicality, consuming substantial human and material resources while offering no guarantee of distribution success. Big data applications effectively address these issues through comparative analysis that extracts high-interest content for readers, identifies preferences across age groups, and enables targeted digital publishing, thereby greatly enhancing publishing efficiency and quality.

1.3 Digital Technology Diversifies Publishing Products

Traditional publishing and editing focused primarily on print books, offering limited product variety and narrow reader choice. Big data applications have diversified distribution channels for traditional publications [3]. The deep data mining and analytical capabilities of big data technology fully reflect different users' personalized needs, prompting the publishing industry to develop personalized content products and targeted marketing strategies. This directly drives diversified development across the publishing industry.

1.4 Digital Technology Optimizes Publishing Business Models

Traditional publishing business models relied mainly on experiential judgment, depending on sales data and personnel communication from existing distribution channels for product marketing and distribution. This approach suffered from partial and incomplete data collection [4]. Big data and related technologies fill these gaps, enabling publishers to accurately grasp product sales data and post-sales conditions while analyzing markets from multiple perspectives including policy, industry trends, and demand. Particularly, big data can capture user habits and preferences to categorize different user groups, supporting business decision-making in publishing. Simultaneously, these technologies strengthen operational management and enhance the precision and applicability of topic selection and distribution.

2. Business Transformation Analysis of Traditional Book Publishing Under the “Big Data, AI, Mobile, and Cloud” Context

To address the impacts and challenges of the big data era while seizing its opportunities, publishing professionals must continuously innovate, optimize publishing models, improve professional competencies, emphasize resource integration, and achieve deep industry development.

2.1 Digital Innovation in Work Thinking

To respond to big data era impacts, the primary challenge for traditional book publishing lies in breaking old work mindsets and clarifying the complementary relationship between digital technology and publishing. Traditional book editors must broaden their perspectives, leverage the convenience of knowledge acquisition in the big data era, and use multiple media channels to efficiently gather and analyze information, integrating various resources to inject new vitality into publishing [5]. Simultaneously, they should gradually embrace new digital publishing concepts, integrating modern technological ideas into publishing work. Continuous learning is essential to familiarize themselves with new industry formats, forms, and workflows in the big data era, thereby enhancing core competitiveness.

2.2 Digital Enhancement of Topic Selection and Planning

Topic selection and planning constitute a critical link in book publishing; errors in selection affect the entire publishing process. Traditional publishing relied mainly on editors’ planning experience, making experiential judgment paramount. However, this approach lacked scientific data analysis of target reader needs [6]. Therefore, traditional book editors must leverage big data opportunities, engage extensively with social life, stay informed about national policy directions, closely monitor book market conditions, and continuously improve topic selection capabilities.

First, big data enables analysis of reader needs. In today’ s highly developed internet environment, reader demand shows diversified and personalized characteristics. Accurately grasping reader needs has become paramount for editors. Big data can track and analyze most readers’ reading preferences, habits, and consumption levels to identify both actual and potential needs, enabling on-demand publishing. Second, big data helps accurately grasp social trends, focal points, and information to give publications guiding significance. Real-time information dissemination supported by big data facilitates editors’ timely understanding of national political directions and enhances political sensitivity. Through big data collection, editors should actively focus on cultivating and practicing socialist core values, planning more high-quality positive-energy topics that improve people’ s ideological awareness, moral standards, and cultural qualities. Third, big data enhances editors’ comprehensive qualities. To adapt to the new pub-

lishing industry driven by knowledge production and transformation innovation, editors must leverage big data resource advantages to continuously deepen professional knowledge and extensively explore related fields, achieving both depth and breadth in knowledge structure. Simultaneously, editors must proactively strengthen capabilities in digital publishing technology, big data mining and analysis, and new media operations to address technical shortcomings [7].

2.3 Diversification of Manuscript Acquisition Channels

In the big data era, to address readers' diversified and personalized needs, editors should break traditional manuscript acquisition patterns and effectively expand solicitation scope. Leveraging big data convenience, publishers can widely solicit manuscripts through official websites, WeChat public accounts, blogs, microblogs, and other channels, broadening acquisition pathways.

First, utilize big data's precise guidance to understand popular professional field developments. Combined with data resources from CNKI and university libraries, analyze discipline leaders and leading research institutions in specific fields, grasp technology resource distribution, establish scientific information databases, and achieve targeted solicitation and precise manuscript acquisition. Second, accurately grasp market dynamics to create high-quality publications. In the big data era, editors must strengthen market data collection and organization, understand market trends behind the data, and produce accurately positioned high-quality publications [8].

2.4 Comprehensive Improvement of Information Capabilities

In the big data era, information exhibits characteristics of massive volume, complexity, and uncertainty. Against this backdrop, editors must gradually enhance their ability to capture, analyze, transform, and apply effective information. First, strengthen the purposefulness of information capture. After defining topic selection and planning, editors should selectively filter information using multiple channels. Second, improve information processing capabilities. Whether the effective value of massive information can be fully excavated depends on information analysis and processing to identify commonalities and correlations, providing solid data support for publishing. This requires editors to possess both profound professional knowledge and skilled information processing techniques. Third, enhance information application capabilities. All preliminary information processing and analysis serve information application. Editors must use data information as guidance to optimize topic selection, planning, and content production, achieving "data for our use" [9].

2.5 Rational Utilization of Electronic Copyrights

In the big data era, the copyright concept for traditional publications has undergone profound transformation, requiring attention to regulations on electronic

publication copyrights. When utilizing large data platform information and using photos, language, images, and other materials, compliance with relevant laws and regulations is essential [10]. Editors must master China's digital publishing standard systems, digital copyright protection standards, digital copyright legal systems, and other digital production-related requirements to integrate and apply various resources reasonably and lawfully.

3. Development Strategies for Traditional Book Publishing Under the “Big Data, AI, Mobile, and Cloud” Context

3.1 Mining Reader Data for Precise Reader Profiling

Only by continuously creating value for readers can book publishing achieve its true value. The key is to address demand-side needs, retaining existing readers while attracting new ones. Precise reader segmentation enables construction of different marketing strategies and business systems for different reader needs and groups, establishing different industry formats. By segmenting markets and readers and establishing different sales channels according to different needs in different geographical locations, publishers can maximize target customer reach, improve reader satisfaction, and make timely adjustments based on reader demand.

3.2 Continuously Improving the Book Industry Ecosystem, Promoting Integration, Digitalization, and Intelligence

China's digital publishing industry development requires building a sound ecosystem that forms a mutually beneficial and symbiotic structure and effective operational mechanism from authors, content providers, hardware providers, service platforms to consumers. Due to publishing's significant role in improving national quality, the National Press and Publication Administration has consistently supported digital publishing through policies covering space, funding, and taxation. The publishing industry must innovate business development models, promoting integration, digitalization, and intelligence, transitioning from initial policy support to sustainable and healthy development driven primarily by market and consumer demand.

3.3 Cultivating and Forming New Digital Book Industries

Digital books address consumer pain points in the market by satisfying users' fragmented reading needs and providing greater information capacity and more flexible reading methods. Currently, reading hardware devices have diversified, and digital reading is no longer limited to PC terminals. Powerful smartphones, tablets, and affordable e-readers have gradually gained consumer recognition. The vigorous development of digital publishing has diverted audiences and markets from traditional publishing, creating significant impact. The traditional

book publishing industry must focus on cultivating this new market.

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The following content appears to be from a separate article in the same journal issue:

County-Level Media Convergence and Video Content Development

(Continued from page 67)

Converged media centers are shifting their business focus toward video and emerging media, producing large quantities of short videos, live streams, H5

works, animations, comics, illustrations, data journalism, documentaries, and other formats, creating new development opportunities.

Each video genre represents a rich vein worth deep exploration. For example, a county television station in central China has prioritized live streaming programs, which have become quite popular in townships and county agencies, surpassing the influence of traditional television programs. This initiative generates nearly 4 million yuan in annual revenue, exceeding the total annual operating income of many county television stations in central and western China. More importantly, video content from county-level media embodies the principle that “a picture is worth a thousand words,” breaking limitations and creating turning points by developing potential markets for local enterprises and institutions in product (service) marketing and image promotion, generating additional annual revenue ranging from several million to over a hundred million yuan. This offsets the decline in traditional advertising business and makes integrated development more purposeful.

Cultivating Visual Expression Talent to Establish a Video Foundation

First, recruit professional video production talent to address urgent needs. Second, ensure all traditional editorial and advertising personnel acquire video skills to cultivate more new media professionals. Specialized visual expression training programs should be established with assessment metrics and practical application requirements to guide and urge veteran talent to master new skills in photography, videography, graphic design, animation, digital editing, and related thinking methods, achieving practical application and thorough transformation. Third, utilize online crowdfunding and external resources to discover visual expression talent beyond institutional boundaries, leveraging external forces to obtain visual materials and enhance the freshness, breadth, and exceptionality of reporting and services.

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

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