Research on Big Data Analytics Technology and Its Application in Digital Publishing (Postprint)

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Abstract

With the continuous development of China's economy and society, information technology is constantly advancing, and its integration with various sectors of society is becoming increasingly close. Big data analytics technology represents modern technological advancements, and its application in the publishing industry can yield significant benefits. To harness the practical value of big data analytics technology, it is essential to promote the development of the new media publishing industry. This paper will specifically explore big data analytics technology and its application in digital publishing, aiming to provide valuable insights for relevant stakeholders.

Full Text

Abstract

With the continuous development of China's economy and society, network information technology has achieved ever-higher levels of advancement, becoming increasingly integrated with various industries. Big data analysis technology represents a hallmark of modern technological progress, and its application in the publishing industry can yield substantial benefits. To fully realize the practical value of big data analysis technology, it is essential to promote the development of new media publishing. This paper specifically explores big data analysis technology and its applications in digital publishing, aiming to provide valuable insights for relevant practitioners.

Keywords: big data analysis technology; digital publishing; application

1.1 The Connotation of Big Data Analysis Technology

Big data analysis technology is a modern technological approach that relies on internet technology to store, manage, and precisely analyze data, thereby

identifying useful information while automatically eliminating irrelevant data [1]. This technology offers outstanding practical functionality and has garnered widespread attention across various industries. As China's economy and society continue to develop, network information technology has permeated every aspect of daily life. Individuals encounter vast amounts of data in their production and living activities, and only through analyzing this massive information can they enhance data processing capabilities and achieve sustainable development. Traditional information processing methods suffer from inherent lag, reflecting only the conditions of previous time periods. Big data technology compensates for these deficiencies by integrating diverse data sources and enabling rapid analysis of real-time data. In terms of content, big data technology includes data flow prediction, database management, and data algorithm optimization. Methodologically, it encompasses data collection, data entry, and data processing techniques.

Data mining represents the most critical operational method within big data analysis technology. Also known as data development, it involves extracting and developing massive datasets from the internet to identify the most valuable real-time information. Since the external environment is in constant flux, data exhibits strong variability. Data mining uses these real-time data characteristics as a foundation for categorical analysis of data resources. Specifically, data mining operations comprise four key stages: First, data type classification. The internet contains enormous volumes of data information, necessitating the creation of different databases to manage various data types conveniently. From the publishing industry's perspective, data information includes user data, publisher data, and book data, among others. Data mining enables systematic categorization and preservation of this information in databases. Second, data subdivision. Each data category can be further divided into hierarchical levels. For instance, user information encompasses user preference data, user product data, and user attribute data; publisher information includes business data, distribution data, and sales data; book information comprises author data, e-book data, and promotional data. Third, analysis of data information characteristics. Each information type possesses distinctive features, and data mining can aggregate data to extract the most valuable characteristic information. Fourth, regression analysis of data. Data exhibits certain fluidity, and data mining can predict publishing industry sales trends based on data flow patterns.

2. Overview of Digital Publishing

2.1 The Connotation of Digital Publishing

Digital publishing is a new publishing model that relies on network data information. Based on network information technology, digital publishing can compensate for the shortcomings of traditional publishing models. It exhibits strong systematic characteristics, encompassing not only the digitization of publishing methods but also the digitization of publishing operations and user consumption [2]. In implementing digital publishing, it is necessary to construct

an information platform using internet technology, where users can access electronic reading materials upon payment and transaction with providers.

2.2 Advantages of Digital Publishing

First, digital publishing offers outstanding convenience. Supported by network information technology, it stores massive amounts of data that users can efficiently locate by data type, saving considerable search time. Every link in the publishing industry chain exhibits interconnections, and digital publishing facilitates data transmission and information sharing across network platforms. Traditional publishing relies primarily on manual operations, resulting in higher error rates and costs. In contrast, digital publishing employs intelligent operations with lower error rates and reduced costs. From this perspective, digital publishing has become an inevitable trend in the industry's development.

Second, digital publishing demonstrates remarkable richness. Currently, China's digital publishing encompasses various products including digital newspapers and periodicals, e-books, and electronic maps, all of which can be loaded onto mobile terminals. As network information technology continues to advance, offline publishing products have expanded to online platforms. Compared with traditional publishing, digital publishing provides users with more intuitive service experiences and transforms their entertainment modes.

Third, digital publishing exhibits strong developmental potential. Grounded in internet technology, digital publishing's development accelerates alongside technological progress. In the information age, digital publishing has attracted public attention as one of the most dynamic products of modern technology. Big data technology injects fresh vitality into digital publishing and will undoubtedly drive the contemporary publishing industry's advancement.

3. Applications of Big Data Technology in Digital Publishing

3.1 Publishing Process

Big data technology can be applied throughout various stages of digital publishing, significantly reducing publication time. Specifically, the digital publishing process includes the following phases: First, preparing publishing products, analyzing product characteristics, and managing them by category. Second, developing product marketing strategies, analyzing market conditions, and collaborating with mass media. Third, optimizing the allocation of human and material resources by calculating workload for each process stage, with greater workload requiring increased resource allocation. Fourth, centralized user management and storage of massive user information. For example, during product preparation, the RDM system [3] can be applied. The RDM system is an intelligent network management platform that enables centralized management of publishing products. To support RDM system operations, an ERP system

can also be constructed to delineate responsibilities between the two management systems. When systems generate data, big data technology should be employed for precise real-time data analysis. If product information contains errors, secondary review and correction are required.

Digital publishing processes follow two tracks: business process flow and management process flow. Big data technology applications differ according to the specific process. For business processes, big data technology should be utilized to examine market consumption patterns and user preferences when designing workflows, with all information recorded in databases. To enhance business process design, network information platforms can be created to attract designers' attention. For management processes, a data analysis department should be established to search for and process business data while examining supply-demand relationships to control input-output ratios.

3.2 Publishing Products

Big data technology can be applied to digital publishing products. As material life becomes increasingly abundant, people's spiritual demands grow stronger, placing higher requirements on publishing products. Only by meeting users' diverse needs can publishing products promote sustainable industry development. Big data analysis technology can investigate user demand patterns and innovate publishing products based on demand data, providing users with multiple choices. Supported by big data technology, product production speeds accelerate, market share continuously increases, and greater economic and social value is created.

3.3 Publishing Services

Big data technology can be applied to digital publishing services. With big data technology support, digital publishing becomes more intelligent, significantly advancing China's publishing industry development. Based on users' historical data, big data technology can push relevant content to users, eliminating the need for repeated online searches. User historical data includes consumption preferences, content preferences, and personal evaluations [4]. Big data technology must categorize products by theme, character, etc., to align closely with market demands.

While providing services, it is also essential to establish good relationships with users and solicit their feedback. For instance, on social media platforms such as WeChat and Weibo, user opinions and suggestions should be actively collected. Big data technology enables intelligent data analysis, and providers should utilize data mining functions to evaluate user experiences and adjust service delivery accordingly.

In summary, as China's economy and society continue to develop, the publishing industry has entered a rapid growth phase. To expand the scope of digital

publishing, it is essential to explore the practical significance of big data analysis technology.

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