Exploring the Convergence Development Path of Water Conservancy Science and Technology Journals: Postprint

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Abstract

The development of Internet technology has not only accelerated the speed of information acquisition and broadened the channels for obtaining information, but also enriched the modes of information dissemination, thereby transforming people' s lifestyles and learning methods. In the new media era, digital technology presents both opportunities and challenges for traditional media. Against the backdrop of the convergence between traditional and new media, this article analyzes the necessity of the integrated development of water conservancy scientific and technological journals with multimedia, identifies the existing problems of such journals, and, based on the recent integrated publishing practices explored by some water conservancy scientific and technological journals, further investigates effective pathways for their integration with new media, aiming to break through self-limitations, achieve integrated development, and provide references for similar journals.

Full Text

Preamble

Title: Exploring the Integration and Development Path of Water Conservancy Science and Technology Journals

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Abstract: The development of internet technology has not only accelerated information acquisition and broadened access channels but also enriched communication methods, fundamentally changing how people live and learn. In the new media era, digital technology presents both opportunities and challenges for traditional media. Against the backdrop of traditional and new media convergence, this paper analyzes the necessity of integrating water conservancy

science and technology journals with multimedia, identifies existing problems, and explores effective integration pathways based on recent practices. The aim is to break through self-imposed limitations, achieve integrated development, and provide reference for similar journals.

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With the rapid development of information and internet technologies, traditional media including books, journals, and newspapers face new impacts and challenges. For water conservancy science and technology journals to become platforms for academic exchange and theoretical innovation, they must leverage digital technology to enhance journal quality and academic standards [3].

1.3 The Shift in Reading and Information-Seeking Habits Requires Integrated Development

Media convergence represents the organic integration of traditional media built upon the rapid development of the internet, representing the best path forward for media development and a significant, profound transformation in the communications field. In this era of media convergence, readers' habits for reading and obtaining information have changed dramatically under the influence of new media. Most users now access articles published in scientific journals through mobile devices or the internet, making digital publishing an irreversible trend and tide of the information age. At this stage, media convergence has become the developmental trend, and water conservancy science and technology journals must adapt to today' s digital era and new reading habits, making integrated development imperative.

2. Dilemmas Faced by Water Conservancy Science and Technology Journals

Media convergence has entered a new developmental stage. It represents a new operational model under diversified information transmission channels and the "convergence" of different media forms. For water conservancy science and technology journals, this presents enormous challenges and unprecedented transformations.

2.1 Outdated Mindsets and Lack of Innovation Awareness

Under current rapid digital development, water conservancy science and technology journals can no longer adapt to the new media ecosystem under media convergence. Some journals believe they have completed digital publishing and new media dissemination simply by transferring digital copyrights to databases such as CNKI and Wanfang. However, with the emergence and rapid development of new media, many water conservancy science and technology journals still cling to their original work models, falling behind the times and resulting in small audiences and limited dissemination channels. Their survival environment is similarly bleak. Water conservancy science and technology journals, due to their strong professional nature and fixed readership—primarily frontline construction personnel, managers, and designers in the water conservancy industry or related fields—and because the papers in these journals are highly academic, their traditional operational models can no longer adapt to the larger environment of media convergence. These journals must face challenges head-on, seize opportunities, transform their concepts, and pursue integrated development with emerging media [2].

2.2 Constraints from Systems and Policies

Water conservancy science and technology journals have numerous supervising and sponsoring units, which are often two different entities. Some journals are affiliated with universities or research institutes and lack independent legal status, while others are run by water conservancy associations or societies and belong to social organizations, making it difficult to effectively lead journal development. Against the backdrop of media convergence, water conservancy science and technology journals need to break previous institutional constraints, continuously improve relevant policies, and promote forward development [5].

2.4 Lack of Funding

Water conservancy science and technology journals are generally public welfare in nature, making it difficult to earn substantial profits—also prohibited by national policy. Due to industry limitations, small audiences, and limited distribution scope, they cannot attract large-scale investment. However, for long-term development, these journals must adapt to the general trend of media convergence and obtain special funding support to accelerate integration. The lack of funding renders their integration development aspirations powerless.

2.5 Lack of Professional Talent

Currently, the quality of personnel in traditional water conservancy science and technology journals is uneven. Some editorial staff are older, while others operate with just two or three people. Additionally, some journals have not yet adopted management systems like “editorial platforms,” lagging far behind their

peers. Personnel quality determines a journal' s direction. The media convergence environment requires editors to be versatile and composite talents. The integration of water conservancy science and technology journals with new media demands not only proficiency in network technologies such as databases and search engines but also the ability to filter effective information from big data and master planning, solicitation, and multi-directional communication skills [6].

1. The Necessity of Integrated Development for Water Conservancy Science and Technology Journals

Media convergence changes the communication methods of water conservancy science and technology journals, providing excellent communication platforms and becoming an important developmental path. These journals should face challenges squarely, seize opportunities with innovative spirit, and accelerate integrated development. This integration includes both technological and operational model integration, enabling water conservancy journal communication to reach new heights [1].

1.1 Technological Development Provides Conditions for Journal Integration

The rapid development of media digitalization, networking, and intelligent technologies has severely impacted the media industry. Print journals suffer from long printing cycles and inconvenient portability, leading to shrinking audiences and declining circulation year by year. Meanwhile, a batch of emerging media has emerged and continuously developed.

1.2 High-Quality Development Requires Integration

Water conservancy science and technology journals generally focus on the water conservancy industry or related fields, with strong professionalism and high quality requirements. They must select high-quality academic articles with certain standards, theoretical depth, and technical content. In the media convergence era, they need to pioneer new ideas, update concepts promptly, adapt to media convergence, and keep pace with the times [4].

3. Effective Paths for Integration Development

3.1 Building Brand Awareness

The lifeline of water conservancy science and technology journals lies in the academic level of their articles. They should fully utilize the convenience provided by network technology, entrust platforms such as CNKI and Wanfang to conduct refined big data analysis, and perform in-depth analysis and comprehensive evaluation of published papers' influence, hot topics, columns, and authors in recent years. By identifying their positioning, setting up appropriate columns,

adhering to the concept of quality publishing, pinpointing development pathways, and planning key development areas, journals can ensure they become authoritative and specialized journals in the water conservancy field.

3.2 Strengthening Content Integration

In the media convergence environment, regardless of how communication channels change, content itself retains irreplaceable market value. Content remains the main body of communication, with channels serving content. Water conservancy science and technology journals must adapt to media convergence by consistently adhering to a "content is king" strategy. By leveraging the advantages of different media and reorganizing professional content from different water conservancy subfields, journals can provide readers with more comprehensive, in-depth, and valuable papers, thereby enhancing their industry standing and discourse power [7].

3.3 Leveraging Clustered Service Platform Advantages

Practice has proven that journal clustering is an important pathway for optimizing resource allocation, improving journal quality, and enhancing academic influence, which facilitates the integrated development of water conservancy science and technology journals. As water conservancy science and technology journals, they should accelerate integration with industry journals, achieve large-scale and intensive operations, share resources and information, leverage scale advantages, and continuously improve their communication power and influence.

3.4 Extending Communication Forms

Media convergence not only dramatically increases information volume but also accelerates information dissemination speed, fundamentally changing how audiences access information. Consequently, well-planned topics in some water conservancy science and technology journals are quickly imitated by others, producing similar or identical topic selections and resulting in journal homogenization. In reality, each water conservancy science and technology journal has its own positioning and should feature distinctive columns rather than blindly following trends to reduce homogenization.

Traditional print journals primarily communicate through one-way, whole-volume dissemination, whereas the media convergence era offers diverse, non-unidirectional communication forms. Given that water conservancy science and technology journal papers are relatively dry, difficult to understand, and lengthy, they struggle to meet readers' personalized and differentiated needs, limiting readership. Therefore, journals should adapt to current "short, refined, and fast" fast-food reading styles, fully utilize converged media advantages, apply emerging digital technologies, and transform pure text content into pictorial, audio, and video formats for secondary deep processing. For example,

cutting-edge water conservancy technology papers can have their abstracts, innovation points, and technical cores extracted and pushed via short videos before formal publication. Certain experiments or designs in water conservancy technology papers can be displayed through VR technology for greater intuitiveness. For experimental details or data not clearly expressed in papers, readers can access extended links for detailed understanding. These diverse communication forms build a "bridge" for barrier-free communication between authors and readers, compensate for traditional journals' deficiencies, expand readership, and enhance influence [8].

3.5 Strengthening Online-First Publishing

The traditional publishing process of water conservancy science and technology journals involves lengthy review procedures that result in long publication cycles. This prevents excellent papers with major scientific research achievements from being published promptly, causing them to lose first-publication opportunities and affecting their communication power. Therefore, water conservancy science and technology journals should break conventional publishing routines, shorten publication cycles, and fully utilize the convenience of network technology. Online-first publishing can effectively meet the need for rapid publication by leveraging the timeliness and flexibility of online distribution. Thus, some excellent cutting-edge manuscripts can be published first on network platforms to reach readers quickly, shortening dissemination time and improving communication efficiency.

3.7 Innovating Business Models

The main business models for water conservancy science and technology journals, being primarily print media, include: publication fees, special issues/columns, council units, and advertising .

Table 1 Business Model Table

- **Publication Fees:** Charging authors certain fees when their manuscripts are accepted
- **Special Issues/Columns:** Collaborating with outstanding design units and enterprises to publish special issues/columns, charging fees to centrally publicize their latest research and engineering projects
- **Council Units:** Primarily targeting influential design units, research institutes, and water conservancy-related enterprises, charging fees to provide advertising, conference participation, and other services
- **Advertising:** Charging fees for advertising enterprises or products

Beyond the business models mentioned in Table 1, water conservancy science and technology journals can continuously explore and innovate their operational models, such as organizing academic conferences and activities, operating new media platforms, etc., to increase revenue [10].

3.8 People-Oriented Talent Team Building

Talent is key to the integrated development of water conservancy science and technology journals. First, journals should actively identify and recruit outstanding talents with new media expertise into editorial teams, boldly provide opportunities for training, continuously improve editorial literacy, and build a long-term mechanism for new media talent cultivation. Second, according to the needs of journal integration development, journals should conduct planned and targeted training, such as training existing editorial staff in new technologies and skills to achieve talent transformation and upgrading, and improve current editors' new media application capabilities. By providing a favorable employment environment to retain talent, journals can cultivate a politically steadfast and professionally exquisite talent team for water conservancy science and technology journals.

3.9 Innovating Service Methods

Water conservancy science and technology journals provide information exchange platforms for water conservancy industry constructors, designers, and researchers. As knowledge products and innovation platforms, these journals should strengthen service awareness and innovate service methods. For example, they can provide customized knowledge services based on user needs, grounded in new information discovery, integration, and organization; utilize advanced technologies such as big data and cloud computing to provide various evaluation and data support services; leverage content advantages to expand extended services; and utilize other new media advantages to innovate service models and develop new services. By focusing on knowledge service as the core of transformation and upgrading, journals can create new service integration models derived from extended content value, expand new service models, and enhance their influence.

Conclusion

With the development of internet technology and new media, a new era of media convergence has arrived, providing an important strategic opportunity period for water conservancy science and technology journals but also posing tremendous challenges. Water conservancy science and technology journals should conform to media convergence development trends, adhere to the principle of "quality-based, content-core," establish brand awareness according to water conservancy industry characteristics, set up distinctive columns, utilize diverse communication methods, and improve journal influence. To strengthen quality and brand building, journals must firmly seize this historical opportunity, actively make adjustments, continuously innovate business models, increase revenue, provide strong financial support for integrated development, and recognize that talent is also key. Therefore, journals should actively introduce new media talent, strengthen editorial team building, promote transformation and upgrading, and create more value in the media convergence context.

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