

Strategies for Enhancing the Competitiveness of Scientific Journals through New Media Technologies: Postprint

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Abstract

The flourishing development of new media technology has, to a certain extent, constrained the influence and dissemination capacity of print-based scientific journals. Although the application of new media technology has not yet been fully popularized among scientific journals in China, new media has already become the mainstream communication channel. Consequently, scientific journals should fully leverage new media technology to enhance their own competitiveness, thereby improving their dissemination capacity and influence. This article, based on an introduction to the opportunities and challenges that new media technology presents for scientific journals, analyzes strategies for improving the competitiveness of scientific journals through new media technology, with the aim of providing reference for the application of new media technology in other academic journals.

Full Text

Strategies for Enhancing the Competitiveness of Scientific Journals Through New Media Technology

Abstract: The flourishing development of new media technology has constrained the influence and dissemination capacity of print scientific journals to a certain extent. Although new media technology has not been fully adopted by scientific journals in China, it has already become the mainstream communication channel. Consequently, scientific journals should fully leverage new media technology to enhance their competitiveness and thereby improve their dissemination power and influence. This paper analyzes strategies for improving the competitiveness of scientific journals based on new media technology, following an overview of the opportunities and challenges that new media presents. The

aim is to provide a reference for other academic journals seeking to apply new media technology.

Keywords: new media technology; scientific journals; competitiveness; strategies

As internet technology gradually becomes ubiquitous, it has profoundly and dramatically transformed the information dissemination field, enriching communication methods, accelerating transmission speed, and reshaping audiences. As an important carrier for disseminating scientific knowledge, scientific journals are inevitably affected by their communication environment, which influences their dissemination power. While the transformed communication environment has challenged the development of scientific journals, it has also injected new vitality into enhancing their competitiveness. In this context, scientific journals should effectively utilize new media technology to continuously improve their competitiveness and promote sustainable development.

1.1 Opportunities

From a strengths perspective, content represents a key advantage for scientific journals. In the internet environment, massive amounts of information lead to information overload, where audiences receive far more information than they can process or need, resulting in reduced efficiency in information selection and utilization. From the audience's perspective, when information no longer helps them discover truth or even hinders their understanding of the real world, sheer quantity loses its meaning. In such situations, audiences increasingly demand reliable and useful information, tending to seek out "authoritative" sources. Scientific journals, with their highly professional academic platforms and strong author teams, guarantee high-quality and specialized content that can provide audiences with the scientific information they require. Furthermore, new media has a low entry barrier, allowing traditional scientific journals to make full use of it as a communication platform to achieve effective communication with customers and audiences, thereby promoting their own development.

1.2 Challenges

In terms of information transmission speed, traditional scientific journals cannot compete with new media. Internet-based information dissemination allows for instant publishing, whereas traditional scientific journals typically operate on half-monthly, monthly, or even quarterly publication cycles, which weakens the timeliness of information dissemination to some extent. When presenting content, traditional scientific journals rely primarily on text and images, a relatively monotonous approach. New media, by contrast, employs not only these two methods but also video, audio, and other rich and diverse formats, naturally attracting more audiences. Traditional scientific journals have largely represented one-way communication with limited audience participation in the

information dissemination process, whereas the interactive nature of new media inevitably diverts audiences and affects the dissemination power of scientific journals.

2.1 Transforming Journal Management Philosophy and Enhancing Editor Competence

Scientific journals should recognize that new media represents not merely an operational technology but also a philosophy—one that describes how content flows across multiple platforms and how changes in technology and industry sectors unfold. In other words, in the new media environment, scientific journals should fully recognize that they must not only utilize new media technology for their own development but also actively play their role in cultural integration and social development. In its application of new media technology, *Henan Science* has taken the enhancement of editorial competence as its entry point to promote transformation of its management philosophy and ultimately achieve competitiveness improvement. When transforming editorial work, *Henan Science* has focused on the following aspects:

First, it has reasonably repositioned editors by gradually de-emphasizing their dominant role. Previously, *Henan Science* operations assigned primary responsibility to editors, particularly executive editors, who occupied a central position in the entire science communication process. While this model ensured standardization, normalization, and accuracy in scientific communication, new media has made participants in science communication interactions more complex and diverse. Simply from an editorial structure perspective, when an organizational structure possesses internet attributes, a centralized model becomes unsuitable; instead, a parallel competitive structure should be adopted. New media contains massive amounts of information open to all audiences, thereby bringing audiences into science communication interactions. In response to this change, *Henan Science* retains only the necessary procedural responsibilities for editors, diluting their dominant status while encouraging editors to provide appropriate guidance to audiences and involve them in journal operations.

Second, it urges editors to enhance their comprehensive competence. In the process of transforming its management philosophy based on new media technology, *Henan Science* has courageously broken traditional constraints, encouraging editors to engage with interdisciplinary knowledge beyond their job requirements and regularly organizing training sessions and study programs to enrich editors' knowledge structures. Simultaneously, *Henan Science* has led editors to learn various new media technologies to strengthen their ability to use new media.

2.3 Rational Allocation of Content Resources

Currently, numerous new media platforms exist, each with distinct characteristics. When scientific journals publish content on new media platforms, only content that aligns with platform features can provide more targeted services

to audiences. For example, a statistical analysis of *Science World's* publications across platforms over a seven-day period revealed four blog posts (three journal articles and one original post), 27 Weibo posts (18 original and nine forwarded or blog-introducing posts), and four WeChat messages. In terms of content, blog articles tend to be lengthy and can present full journal content, while Weibo content faces a 140-character limit and must precisely summarize main points to accommodate audience fragmentation in reading habits. WeChat content length falls between these two, allowing integration of images and video, making it suitable for mobile reading. By publishing content aligned with platform characteristics across these three platforms, *Science World* has broadened its information dissemination reach, attracted more audiences, and enhanced its competitiveness.

2.4 Accurate Positioning of New Media Technology Functions

In the internet era, information dissemination must be content-driven. Therefore, when scientific journals use new media to disseminate information, they must accurately position new media technology functions, scientifically select communication content, and deliver the information audiences need and want most in flexible and concise ways rather than simply copying print journal content verbatim. Scientific journals should bravely experiment—first imitating and learning, then through practice and originality, forming their unique brand to enhance core competitiveness. *Electrotechnics & Electrical Engineering* is a typical traditional scientific journal that has faced limitations in published content and publication delays, problems that have become increasingly apparent under new media impact. Previously, *Electrotechnics & Electrical Engineering* relied primarily on email submissions, but QQ-based and WeChat-based solicitation methods in the new media environment have significantly impacted its manuscript acquisition channels. The journal required four months from solicitation to print distribution, and this publication lag caused substantial reader loss, greatly affecting its development. To change this situation, *Electrotechnics & Electrical Engineering* actively and thoroughly studied new media, innovatively integrated its traditional communication forms with new media, vigorously developed new media platform development and promotion, and recruited professional talent. Subsequently, it established an independent domain website, online submission system, official Weibo account, and WeChat public account, while also creating distinctive columns in its WeChat public account such as “Journal Guide” and “Focus Recommendations,” which attracted a large audience and achieved healthy development.

With the rapid development of internet technology, the application scope of social software has gradually expanded. Currently, WeChat and QQ serve as mainstream communication tools, both being online instant messaging platforms with massive user bases. Scientific journal editorial departments also use WeChat and QQ for external communication, significantly improving work efficiency and quality while markedly enhancing journal brand influence. In

recent years, the editorial department of *Aviation Science Magazine* has consistently used QQ to contact authors, utilizing the group function to establish reader communities that provide excellent platforms for reader exchange and information feedback, narrowing the distance between the journal and authors and facilitating the formation of loyal reader groups. In addition to QQ, *Aviation Science Magazine* has also begun using WeChat and Weibo to increase dissemination and communication channels, gradually establishing a strong on-line brand image.

In the new media environment, scientific journals must accurately grasp the characteristics of various platforms, combine their own strengths, create diversified network communication environments, enhance their competitiveness, and achieve sustainable development.

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