

Iron Steel Vanadium Titanium: Interactive Publishing Practice and Reflection (Postprint)

Authors: Yang Dongmei, Shuhui Deng, Zhang Jidong

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Abstract

Iron Steel Vanadium Titanium has implemented interactive publishing based on the open science initiative through the Open Science Identity (OSID). This paper analyzes and reflects on issues encountered during operation and proposes corresponding countermeasures. First, in the digital transformation and development of scientific journals, editors themselves need to shift their mindset, continuously acquire new knowledge, embrace innovation, and accept challenges; second, while ensuring article content quality, effective publicity and promotion of OSID creation should be conducted among authors to encourage their active cooperation, deeply mine open data resources from papers, and further enrich OSID service functions; third, service content such as live courses should be actively introduced to guide the construction and healthy development of reader communities and enliven Q&A sessions. Through these measures, Iron Steel Vanadium Titanium will further enhance reader experience and better promote the integrated development of journal publishing.

Full Text

Preamble

OSID Open Science Initiative · Special Feature

ChinaXiv Partner Journal: Practice and Reflection on Interactive Publishing in *Iron Steel Vanadium Titanium*

Abstract: Based on the Open Science Initiative, *Iron Steel Vanadium Titanium* has implemented interactive publishing through Open Science Identity (OSID) codes. This paper analyzes and reflects on issues encountered during implementation and proposes corresponding measures. First, during the digital transformation of scientific journals, editors must shift their mindset, continuously acquire new knowledge, embrace innovation, and accept challenges. Second, while ensuring article quality, editors should actively promote OSID creation

to authors, encouraging their cooperation to deeply mine open data resources and further enrich OSID service functions. Third, the journal should introduce service content such as live courses to guide the construction and healthy development of reader communities and enliven the Q&A sessions. Through these measures, *Iron Steel Vanadium Titanium* will further enhance reader experience and better promote the integrated development of journal publishing.

Keywords: scientific journal; interactive publishing; Open Science Identity (OSID); reader community

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Authors: Yang Dongmei, Deng Shuhui, Zhang Jidong

The publishing industry bears the important mission of cultural accumulation, inheritance, and dissemination [1]. In today's era of continuous technological development, the carriers, methods, and channels through which people acquire knowledge and information have undergone significant transformation. For the publishing industry to continue fulfilling its "mission," it must adapt to changes in how audiences access knowledge and information, transforming its production methods, carriers, and dissemination approaches. Therefore, the integration of traditional and emerging media represents both the direction for strengthening and expanding the publishing industry and its intrinsic need for survival, development, and transformation [2-4]. In recent years, a comprehensive new media convergence solution developed by the National Press and Publication Administration's Publishing Convergence Development (Wuhan) Key Laboratory—the Open Science Identity (OSID) based on the Open Science Initiative—will fundamentally change the current situation where traditional media lose contact with readers, transforming "reading" into "linking." The specific approach involves embedding QR codes in traditional print books and configuring resources through a backend system. By scanning these codes, readers can listen to authors' voice introductions of papers and ask questions online; publishers can analyze reader scanning behavior and interactions to deeply understand reading needs, timely adjust publication direction, achieve rapid market feedback and product supply adjustment, and meet readers' diverse and personalized needs. In the Open Science Initiative, editors connect various roles throughout the publishing process, enabling publishing to become interactive like the internet and maximizing the value of content resources [5-6]. This system has been gradually promoted among scientific journals.

1. Journal Overview

Iron Steel Vanadium Titanium was founded in 1980 and is sponsored by Pangang Group Panzhihua Iron & Steel Research Institute Co., Ltd. It is the only

academic journal in China that systematically reports on comprehensive utilization achievements of vanadium-titanium magnetite resources. The journal is a Chinese core journal and is indexed by major domestic and international databases including Chemical Abstracts (USA), Abstracts Journal (Russia), Index Copernicus (Poland), and CNKI. Its influence continues to grow, and it enjoys certain recognition in the metallurgy and vanadium-titanium industries, playing an active role in promoting technological progress for Pangang and the vanadium-titanium sector. In recent years, as the comprehensive utilization of vanadium-titanium resources has evolved from a corporate initiative to a national strategy, and with the establishment of the State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization at Pangang, *Iron Steel Vanadium Titanium* will shoulder greater responsibilities and face higher, newer requirements for its development.

Currently, in addition to print distribution, *Iron Steel Vanadium Titanium* has developed independent Chinese and English websites, established two WeChat official accounts (service account “Iron Steel Vanadium Titanium” and subscription account “Vanadium Titanium Window”), implemented bilingual publishing, online-first publication, DOI registration, and is striving to build the journal into a characteristic information hub and full-media academic exchange platform serving the vanadium-titanium and metallurgy industries.

2. Exploration and Practice of Interactive Publishing at *Iron Steel Vanadium Titanium*

Throughout its 39-year development history, *Iron Steel Vanadium Titanium* has consistently kept pace with the evolution of the publishing industry. In today’s era of rapid convergence between traditional and emerging publishing, the journal has likewise been bold in pioneering new approaches. At the end of 2017, it joined the Open Science Initiative and launched interactive publishing exploration through OSID. Despite constraints from funding, talent, and other factors that have led to less-than-ideal progress, certain results have been achieved. The authors have organized their experiences from the implementation process for peer reference.

Since 2018, *Iron Steel Vanadium Titanium* has utilized OSID to provide value-added services within the codes. As of November 30, 2018, the journal had generated codes for 185 formally accepted papers, with total reader views reaching 8,326. [Figure 1: see original paper] shows several examples.

2.1 Implemented Functions

(1) **Audio Introduction: Presenting Papers in a New Way**

Authors provide audio introductions to their papers, enabling research significance and innovation points to be understood within one minute. Undeniably, voice conveys greater affinity than text, making expression more three-dimensional and diverse.

(2) **Academic Q&A Awaiting Kindred Spirits**

OSID provides a Q&A portal where readers can ask authors questions about article content or specific knowledge points for deeper discussion. This enhances readers' understanding of articles and enables knowledge expansion. Those engaged in research understand that substantive academic questions only emerge after careful reading and digestion of content, representing genuine inspiration. When such questions encounter brilliant answers, the resonance benefits not only the author and questioner but also observing readers.

(3) **Academic Community Construction**

The academic community presents authors' academic activities, publication information, and readers' reading and questioning patterns. Authors can establish online communication with readers, expand their networks, and achieve research extension. Through continuous revision, this function has evolved from single-paper communities to journal- or field-based communities, maintaining activity while enabling more targeted discussions and focused topics.

(4) **Enhanced Publishing**

OSID's open science data and content module can load video, audio, images, PPT, and other file formats to comprehensively present content previously limited by space constraints, equivalent to enhanced publishing. For example: In the article "Analysis of Contact Fatigue Crack Damage in U75V60 kg/m Steel Rail" (Issue 3, 2018), the author embedded a 9-minute video "Pangang Steel Rail" presenting the production process, output, and quality inspection of Pangang steel rails, supplemented with production line images. Beyond the article content, readers can more intuitively understand the steel rail production process, thereby deepening their comprehension of the article. Even non-specialists can learn much from it. In the article "Effect of Aluminum Sulfate on Abrasion Rate of Vanadium-Titanium Denitrification Catalysts" (Issue 4, 2018), the author reasonably utilized the enhanced publishing module to embed promotional courseware, high-definition images, and experimental dynamic diagrams for catalyst products, both deepening readers' understanding and effectively advertising manufacturers and products.

(5) **Other Services**

Tailored to the journal's characteristics and resources, personalized service content has been added, such as "Know Me Q&A," submission toolkits, specialized databases, and conference registration.

2.2 Existing Problems

As previously described, the Open Science Initiative implementation process is "editor-centered," connecting the entire publishing chain. Therefore, editors' subjective initiative and positive attitude are particularly crucial. Especially in

the initial implementation stage, editors need time to learn, master, apply, and innovate with the new system while handling traditional publishing tasks and promoting, explaining, and supervising material uploads from authors. Regarding OSID and its enhanced publishing functions, most authors have responded positively and cooperated readily, but a minority have shown resistance, considering it increased workload and being unwilling to cooperate until after patient explanation. Some authors upload audio materials untimely or with poor recording quality, some simply reading the abstract, failing to achieve desired effects. The Q&A segment has not met expectations, with far insufficient interaction. For enhanced publishing, few authors truly understand its purpose, resulting in limited uploaded content. Editors need to further promote the system and assist in resource mining. Consequently, interactive publishing shows limited short-term results and requires longer-term data accumulation and 沉淀.

3. Reflections and Countermeasures

3.1 Strengthening Team Building to Cultivate Interdisciplinary Talent

The publishing industry's characteristic of "content is king" determines that editors remain the core talent of publishing institutions, whether in traditional or digital publishing. Competition among scientific journals ultimately boils down to talent competition. As interactive publishing is a new technology that has gradually developed over the past two years, much new knowledge requires learning and demands faster overall learning capabilities than competitors. As a crucial link in the publishing chain, editors serve as "organizers" and "gatekeepers." Their attitude toward new technologies inevitably affects the journal's digital transformation process. Naturally, rational personnel allocation, creating more skill training opportunities, and establishing practical incentive mechanisms in performance evaluation are also essential measures.

3.2 Strengthening OSID Knowledge Promotion and Popularization

Scientific journal publishing differs slightly from book publishing in that each issue contains dozens of articles with different authors whose ages, experiences, and levels vary, resulting in different degrees of acceptance of new things and causing some trouble for OSID code generation and backend resource allocation. Code generation and audio upload require authors' active cooperation. As this work has just begun, many authors are not yet accustomed to it, requiring editors to provide detailed explanations and guidance to each author and patiently persuade and supervise uncooperative authors. Additionally, allowing authors sufficient preparation time and advancing the code generation process are also optional measures.

3.3.1 Enhancing Interaction in Q&A Sessions To strengthen Q&A interaction, the following measures can be adopted: (1) Strengthen manuscript solicitation, leverage the exemplary role of renowned authors and seminal pa-

pers, collect and organize questions, and regularly organize expert Q&A sessions. (2) For hot topics, mobilize readers to ask questions and authors to answer. (3) Cultivate reader habits through prize-winning Q&A and other forms. (4) Actively support emerging scholars in the industry, help them grow, enhance their reputation, and make them spokespersons for the journal.

3.3.2 Reader Community Construction and Maintenance As professional information providers, scientific journals possess professional authority built through long-term accumulation, solid user bases, rich expert reserves, and keen sensitivity to industry development directions. In today's new media and micro-communication era, utilizing these advantages and leveraging reader communities to gather professionals from different institutions and regions can solve information silo problems and achieve discipline information sharing. For individuals, this increases visibility and enhances sense of belonging. Editors must consciously guide the formation and healthy development of industry ecosystems, integrate disciplinary experts, cultivate opinion leaders, increase public recognition, win more readers, and plan and conduct diverse activities to enliven academic atmosphere and improve fan stickiness. Using the journal platform to integrate relevant disciplinary forums, blogs, and WeChat groups can create valuable networking opportunities.

3.4 Other Considerations

Compared with powerful service functions launched in some book publishing cases, current services provided by scientific journal OSID platforms remain relatively limited. However, the following aspects deserve attention and preparation:

3.4.1 Integration of Live Courses Since their inception, scientific journals have possessed strong disciplinary attributes. Academic conferences and professional knowledge and skills training in specific fields are topics of universal concern. However, only a minority can attend out-of-town conferences and training sessions. Therefore, utilizing internet technology to innovate academic exchange models and leveraging social tools for promotion to expand the beneficiary population is a worthwhile endeavor.

3.4.2 Formation of New Advertising Formats OSID's original intention is to transform "reading" into "linking." Therefore, the inclusiveness and richness of the enhanced publishing module and multi-format files within the code are sufficient to revolutionize traditional print advertising, institutional promotion, and product introduction, making methods and means more flexible and diverse. One can envision using the journal as an entry point to open an entirely new print media advertising format through enhanced publishing and virtual reality technologies, allowing users to be immersed in the "scene" and comprehensively understand products and their performance.

Interactive publishing represents another new initiative in *Iron Steel Vanadium Titanium*'s digital transformation and upgrading process. Although still in its infancy, we believe that through continuous promotion and persistence, with authors' active cooperation and continuous enrichment of backend resource allocation, we can further enhance readers' reading experience and maximize the value of content resources. Innovation in publishing convergence cannot succeed without editors' efforts. Only by truly transforming traditional mindsets, arming themselves with internet-plus innovative thinking, and enhancing learning capabilities can editors remain invincible in future competition and make positive contributions to publishing convergence development!

References: [1] Wang Siqu. Model Construction of National Soft Power—Strategic Thinking from a Communication Perspective [D]. Hangzhou: Zhejiang University, 2011. [2] Luo Zhangli. Reconstruction of Communication Power, Guidance Power, and Influence of Traditional Publishing in the New Media Era [J]. *Public Communication of Science & Technology*, 2018, 10(23): 3-5. [3] Wang Haitao. On the Direction and Approach of Traditional Media Transformation [J]. *China Media Technology*, 2018(10): 111-112. [4] Zhou Qiaomei. Development Ideas for Academic Journals Under Media Convergence Background [J]. *Journal of Changchun Normal University*, 2018, 37(12): 198-200. [5] Li Ting, Shi Qiming, Liu Qi. “OSID Open Science Initiative” Boosts Integrated Innovation and Development of Academic Journals [J]. *Publishing and Printing*, 2018(3): 11-17. [6] Wang Yan, Li Ran, Chen Yinzhou. Open Service: A Breakthrough Path for Knowledge Service Transformation of Academic Journals [J]. *Chinese Journal of Scientific and Technical Periodicals*, 2018, 29(11): 1095-1098.

(Author Affiliation: Editorial Department of *Iron Steel Vanadium Titanium*)

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

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