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Guidelines for Library Resource Development and Management in the Data Governance Era: A Review of *Standards and Specifications for Data and Digital Resources*

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Abstract

[Purpose/Significance] This review and analysis of the book “Data and Digital Resource Standards and Specifications” aims to summarize its research focus and explore its value and significance, providing support for readers to comprehensively understand the national standards for electronic resources in China and the United States, and offering theoretical basis and practical reference for improving the data and digital resource standards system in library and information science work in China. [Method/Process] Using methods such as literature research and summary induction, this paper systematically evaluates the work from aspects including the background of its writing, overall content, and value significance. [Results/Conclusions] Based on industry pain points, this work accurately grasps the contradictions between the diversity of resource forms and standard uniformity, as well as between the rapid pace of technology iteration and standard stability in digital resource construction. It comprehensively and systematically introduces various key aspects of data and digital resource standards and specifications, closely aligns with actual library work requirements, integrates international cutting-edge concepts, and plays an irreplaceable important role in promoting digitalization construction in the library industry, improving digital resource service quality, and facilitating international exchange and cooperation.

Full Text

Guidance on Library Resource Development and Management in the Era of Data Governance: A Review of *Standards and Specifications for Data and Digital Resources*

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Abstract

[Purpose/Significance] This analysis of *Standards and Specifications for Data and Digital Resources* aims to summarize its research focus and explore its value and significance. It provides support for readers seeking a comprehensive understanding of national standards for electronic resources in China and the United States, while offering theoretical foundations and practical references for refining China' s standards system for data and digital resources in library and information science work. **[Methodology/Process]** Employing literature research, summary and induction methods, this review systematically evaluates the work from the perspectives of its publication context, overall content, and value significance. **[Results/Conclusion]** Addressing critical industry challenges, this work precisely identifies the contradictions between resource diversity and standardization unity in digital resource development, as well as the tension between rapid technological iteration and standard stability. It comprehensively and systematically introduces key aspects of data and digital resource standards and specifications, closely aligns with practical library work requirements, and integrates international cutting-edge concepts. The book plays an irreplaceable role in advancing digital transformation within the library sector, enhancing digital resource service quality, and fostering international exchange and cooperation.

Keywords: Data and Digital Resources; Standards and Specifications; Book Review

Classification Number: G253-65

1 Introduction

In today' s era of global digitalization, digital technology has permeated every industry and become deeply integrated into people' s daily work and lives. Libraries are no exception, with “transformation” and “sharing” emerging as core themes in the profession' s development. Against this backdrop of intelligentization, data has surpassed traditional documents to become the core asset of library and information institutions. Libraries, as knowledge hubs, are undergoing a profound transformation from “document custodians” to “data governors.” For both the publishing and library communities, as electronic resources have become the mainstream resources used by patrons and collected by digital libraries, the development of their standards and specifications has become a critical consideration and fundamental guarantee for resource development and

utilization [1]. With the continuous advancement of network information technology, digital resources—due to their convenient forms and delivery methods—have become the dominant mode of information production, publishing, preservation, transmission, and exchange. The sharing and integration of various types of digital resources and services, including e-journals, e-books, databases, images, and audio-visual materials, have become increasingly seamless, making standards and specifications construction the cornerstone and guarantee for the sustainable development of digital resources [2]. The prerequisite for digital resource sharing and governance is the standardization of data and digital resources. For university libraries in particular, the surge in demand for multi-source heterogeneous data in teaching and research has made the “data silo” problem caused by lack of unified standards a serious constraint on resource effectiveness.

Edited by Xiao Long and colleagues, *Standards and Specifications for Data and Digital Resources* (hereafter referred to as *Standards and Specifications*) emerges as a valuable guide against this backdrop. It provides clear direction and systematic normative guidance for university libraries and the entire library community in exploring and practicing digital resource development, possessing significant theoretical value and practical importance.

2 Background

In recent years, China’s data and digital resource standards and related standardization work have developed rapidly. However, problems persist, including insufficient societal recognition, standards lagging behind industrial development, and urgent need for content system improvement. Most notably, many Chinese electronic publications exported overseas contain high-level resources valuable for Chinese studies and East Asian research, yet their digital publishing processes have been rather arbitrary, failing to follow international or industry standards. This makes them difficult for users to discover and utilize, and challenging to integrate with other resources in foreign library systems.

With support from the China Academic Library and Information System (CALIS), the Digital Resource Acquisition Alliance of Chinese Academic Libraries (DRAA), and the Council on East Asian Libraries (CEAL), librarians from seven Chinese university libraries and sixteen North American university libraries formed a joint project team to conduct research on the “China-U.S. Translation and Research Project on American Electronic Resource Standards and Specifications.” Subsequently, primarily with Chinese team members, the project applied for and received support as a National Social Science Fund general project under the name “Comparative Study of China-U.S. National Standards for Electronic Resources.”

The “China-U.S. Translation and Research Project on American Electronic Resource Standards and Specifications” was completed in 2021, and the “Comparative Study of China-U.S. National Standards for Electronic Resources” project

passed the evaluation by the National Office for Philosophy and Social Sciences the following year. Afterward, the project team strengthened the logical connections between the two project outcomes to make them mutually supportive, updated some content according to standards development, and compiled these into the 600,000-word *Standards and Specifications*, officially published by Guangxi Normal University Press at the end of 2024.

3 Main Content

The writing team for *Standards and Specifications* comprises over 30 librarians primarily from Peking University Library, Xi'an Jiaotong University Library, Renmin University of China Library, Capital Normal University Library, Xiamen University Library, Shenzhen University Library, and the University of Hong Kong Library, as well as more than ten libraries in the United States and Canada. The team members work and conduct research in areas including digital resource development, technical services, electronic resource services, knowledge organization, standards and specifications, subject services, and intellectual property. The editors employed methods such as investigation and research, case collection, translation studies, application evaluation, comparative analysis, and expert consultation to conduct research on China-U.S. electronic resource national standards [2].

First, the book proposes a framework for data and digital resource standards and specifications, innovatively constructing a content system encompassing seven categories: acquisition and compilation, processing and description, publishing and distribution, service and discovery, exchange and transfer, management and statistics, and long-term preservation.

Second, it provides translation and application research on 13 electronic resource standards and specifications from the U.S. National Information Standards Organization (NISO). Based on the content system for data and digital resource standards and specifications, and according to China's relevant development needs, the book selects and carefully translates NISO's latest developed and revised standards and specifications, while comprehensively collecting data and cases. It explores the content and application of these standards and specifications in the form of research reports, identifies problems and gaps in the data and digital resource standards system, and provides recommendations and solutions.

Finally, the book compiles a terminology index to promote industry understanding of standards and specifications. In addition to providing open access to Chinese versions of the standards and specifications, it organizes Chinese-English terminology correspondence tables for each standard, creating a "Terminology Index" that serves as an important reference for related research.

4 Value and Significance

4.1 Breaking with Tradition, Emphasizing Application

Standards and Specifications is the work of experienced frontline librarians who break from traditional frameworks. Taking data and digital resource standards as the main thread, it connects related technical standards, professional applications, and industrial development, emphasizing an application-oriented philosophy. From the user's perspective, it progresses from the superficial to the profound, from the exterior to the interior, enhancing the book's readability and operability. It serves as both an introductory text, reference book, and guide manual for data and digital resource standards, and as testimony to fruitful cooperation between Chinese and foreign librarians.

Academically, the book clarifies the relationships among data, information, and digital resources, and innovatively constructs a content system for data and digital resource standards and specifications. It conducts comprehensive research on the content, application, formulation, and maintenance of standards and specifications, as well as related organizations and their operations. By compiling the "Terminology Index," it organizes common terms and proper nouns in the data and digital resource fields, providing references for research in information science, information technology, library science, informatics, data science, digital publishing, and standards and specifications.

From an application perspective, the standards and specifications proposed in the book provide soft infrastructure for the data and digital resource industries, promoting parallel development of industries and standards. This enables standards to play a facilitating, guiding, and normative role from the very beginning of industrial development, improving industrial efficiency and ensuring scientific development. Simultaneously, by translating and introducing dozens of U.S. national and industry standards and deeply examining their application, advantages, and disadvantages in the industry, the book promotes academic exchange and cooperation between Chinese and American university libraries and research libraries, providing references for China to develop, formulate, or adopt relevant digital resource standards and specifications.

4.2 Addressing Industry Pain Points, Driving Digital Transformation

Standards and Specifications addresses critical industry pain points by precisely grasping the contradictions between resource format diversity and standardization unity, as well as between rapid technological iteration and standard stability in digital resource development. Oriented toward the data industry and digital publishing industry, it systematically introduces the development of relevant standards and specifications in both China and the United States. Its publication will have a profound and lasting impact on the digital transformation and development of the entire library industry.

From the perspective of industry standard formulation, the book builds a bridge

between standards research and industrial application, promoting the transformation of standards research results and driving the technical standardization, data normalization, and industrial innovation of China's data and digital publishing industries. This helps the industry improve efficiency and engage with the global market. Additionally, the book provides important theoretical foundations and practical references for improving China's library data and digital resource standards system. It is expected to prompt relevant departments and professional institutions to formulate more scientific, rational, and harmonized industry standards and specifications based on existing standards, thereby enhancing the collaborative efficiency and overall effectiveness of China's library industry in data and digital resource sharing and interoperability.

4.3 Fostering Talent Development, Enhancing International Influence

For library talent cultivation, this book serves as a rare textbook and reference work. It can be used as teaching material for library science courses, helping students systematically master professional knowledge and skills in data and digital resource standards and specifications, and laying a solid foundation for future work in library digital resources. Additionally, it provides important guidance for continuing education and professional training of practicing librarians, helping to enhance the professional competence and capabilities of library practitioners and providing strong talent support for the sustainable development of the library profession.

In terms of promoting exchange and cooperation between Chinese and foreign libraries, *Standards and Specifications* keeps pace with international frontiers in library science by actively introducing and drawing upon advanced international data and digital resource standards and specifications. This not only helps China's library and information field to timely understand and master advanced international concepts and technical methods, and to improve the overall level of China's library digital resource development, but also lays a solid foundation for Chinese libraries to participate in international digital library project cooperation and achieve cross-national digital resource sharing and exchange. This will enable China's library cause to play a greater role on the international stage and enhance its global influence.

5 Conclusion

In summary, *Standards and Specifications* is a landmark work that comprehensively and systematically covers all key aspects of data and digital resource standards and specifications. Closely aligned with practical library work requirements and integrating international cutting-edge concepts, it plays an irreplaceable role in advancing digital transformation in the library sector, improving digital resource service quality, and promoting international exchange and cooperation. For library and information professionals, standards and specifications are not shackles but keys to unlocking data potential. We should not only be implementers of standards but also co-creators, contributing wisdom

through localized practice to jointly promote the standardization of China' s data and digital resources. *Standards and Specifications* should be an essential reference on every technical librarian' s desk and a conceptual compass for management in strategic planning. In-depth study and practical application of the standards and specifications in this book will help us better fulfill our library missions in the digital age, providing higher quality, more efficient, and richer digital resource services for faculty, students, and readers, thereby contributing to the development of university teaching and research and the improvement of national information literacy, and jointly writing a new chapter for the library profession in the digital era.

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

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