# Excellence through Diligence, Achievement through Reflection: Meng Liansheng's Explorations in Digital Library Theory and Practice (Postprint)

**Authors:** Wang Xin, Li Hong, Wanling

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## Abstract

[Purpose/Significance] This study systematically reviews and reflects on Mr. Meng Liansheng's theoretical research and innovative practice in digital libraries, aiming to provide reference for the current construction and development of digital libraries in China. [Method/Process] Employing research methods such as web surveys, literature research, and expert interviews, it summarizes Mr. Meng's major contributions in digital library theoretical research, digital resource construction and application, digital library technology, digital reference services, and long-term preservation of digital resources, and investigates his exploratory journey in projects including the National Science and Technology Library (NSTL), the Chinese Academy of Sciences National Science Digital Library (CSDL), the development of China's digital library standards and specifications, and the Super Thesaurus and Ontology Construction for Foreign Scientific and Technical Literature Information (STKOS). [Results/Conclusion] Re-analyzing and learning from Mr. Meng's digital library research achievements against the backdrop of today's intelligent technologies and open science development helps clarify the original intention, development trajectory, and future direction of China's digital library construction, seize opportunities presented by era transformation, and better promote the development of digital libraries and smart libraries.

## Full Text

## Preamble

**Efficiency Comes from Diligence, and Success Comes from Thinking: Mr. Meng Liansheng's Theoretical Research and Innovative Practice in the Field of Digital Libraries**

**Wang Xin**[1], **Li Hong**[2],[3],[4], **Wan Ling**[5]

[1]Higher Education Press Limited Company, Beijing 100029
[2]Institutes of Science and Development, Chinese Academy of Sciences, Beijing 100190
[3]Institute of Strategy Research for Guangdong, Hong Kong and Macau Greater Bay Area, Guangzhou 510070
[4]School of Public and Management of University of Chinese Academy of Sciences, Beijing 100049
[5]School of Management, Hebei University, Baoding 071002

**Abstract:** *[Purpose/Significance]* This article systematically reviews and reflects upon Mr. Meng Liansheng's theoretical research and innovative practice in digital libraries, aiming to provide reference for the current construction and development of digital libraries in China. *[Method/Process]* Using research methods such as internet survey, literature investigation, and character interviews, this article summarizes Mr. Meng's major contributions in digital library theoretical research, digital resource construction and application, digital library technology, digital reference consultation, and long-term preservation of digital resources, and explores his exploratory journey in projects such as the National Science and Technology Library (NSTL), Chinese Science Digital Library (CSDL), China's digital library standards and specifications construction, and the Super Thesaurus and Ontology Construction for Foreign Scientific and Technological Literature Information (STKOS). *[Result/Conclusion]* Re-analyzing and studying Mr. Meng's digital library research achievements in today's context of intelligent technology and open science development helps clarify the original intention, development context, and future direction of China's digital library construction, capture opportunities for era transformation, and better promote the development of digital and smart libraries.

**Keywords:** Mr. Meng Liansheng; digital libraries; theoretical research; innovative practice
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Mr. Meng Liansheng (hereinafter referred to as "Mr. Meng") is an outstanding scholar, graduate supervisor, and organizational management practitioner who has long been deeply engaged in China's library and information science field and personally experienced the cross-century development of the profession. Since graduating from the Department of Library Science at Peking University in 1977, he has pursued studies in the United States, France, Australia, and other countries, dedicating over 40 years to library and information science research, teaching, and the organization and management of scientific literature information construction and services. In the field of bibliometrics, he was the first to conduct comprehensive Chinese scientific citation analysis and the first to experiment with Chinese scientific citation database construction. He has also made substantial contributions to information resource management, scientific literature information retrieval and services, and literature database construction.

In the early 21st century, based on years of theoretical exploration and deep participation in the practice of information resource digitization and library automation, he gradually formed an understanding of digital library development paths and service models, constructed a theoretical research and teaching system for digital libraries, and presided over or participated in several important digital library construction projects in his practical work. This article explores and summarizes Mr. Meng's main academic viewpoints and practical journey in the digital library field from the perspectives of macro-theoretical exploration, specific disciplinary areas, and project investigation and organizational management.

## 2. Background of Digital Library Research and Practice

After the mid-1990s, with the deepening application of computers in library and information work, academic and professional communities increasingly recognized the importance of digital information resource construction and networked services. Based on user needs analysis and self-assessment of construction capabilities, libraries across different regions, types, and systems in China began strengthening automation and networking of various library operations while focusing on large-scale digitization of paper collections, launching construction projects for bibliographic databases, subject literature databases, and internet information navigation for digital resource processing and networked information services. These efforts laid the necessary material foundation for the large-scale digital library construction that would prominently emerge in China at the beginning of the new century.

At that time, Mr. Meng served as Director of the Data Department at the Documentation and Information Center of the Chinese Academy of Sciences (CAS) and Director of the Data Department of the CAS Online Documentation and Information Sharing System Engineering Department, personally experiencing the development of China's literature database industry in the 1990s. With his research foundation in bibliometrics and experience in literature database construction, he deeply participated in the planning, construction, management, and promotion of various CAS literature databases (including CD-ROM products), completing the CAS Online Documentation and Information Sharing System Engineering Construction Project. Through learning in practice and summarizing from practice, the knowledge and experience accumulated over years of scientific literature database construction and management laid a solid foundation for his subsequent digital library research and management work.

### 2.1 Long-term Attention to International Library Frontiers

Mr. Meng consistently emphasized diligence in work and deliberation in action. While at the forefront of library research and construction, he paid great attention to international exchanges and tracked the development of cutting-edge library technologies and events worldwide. One area he continuously monitored was American libraries, particularly the automation development of American

university and professional libraries. He followed early developments such as the emergence of CD-ROM literature databases in the United States, Seton Hall University's conversion of all card catalog data to machine-readable format, Ohio University's launch of a large-scale library automation project connecting 18 major libraries into an information network where readers could access all participating libraries' collections from any library or laboratory on the network [1]. He maintained continuous attention to OCLC, the world's largest library bibliographic system at the time, visited OCLC for investigation, and promptly introduced to domestic colleagues its latest developments in resources, technology, management systems, and service models. When introducing OCLC's full-text database service project ECO (Electronic Collections Online) launched in 1998 [2], he considered this event a milestone in the development of library and information services.

After participating in a CAS publishing and library delegation visit to the United States in 1993, Mr. Meng put forward specific suggestions for the development of library and information services in China and CAS: First, during China's transition from a planned economy to a socialist market economy, domestic colleagues should strengthen understanding and research of various aspects of the American library and information field, not limited to introducing advanced technology and equipment but also learning from its effective management systems and operational mechanisms. Second, domestic sectors should create conditions for more institutions to join international data communication networks such as the Internet (which had not yet been established in China at the time, with only the CAS Institute of High Energy Physics connected to the Internet via satellite communication) to more fully develop and utilize domestic and international information resources. Third, he recommended that the CAS Documentation and Information Center join the OCLC system to utilize its bibliographic information resources and promote the development of library and information work within CAS and even nationwide. These suggestions were not only forward-looking but also scientifically sound and feasible, providing important reference for the development of CAS library and information work and subsequent digital library construction [1].

### 2.2 Deep Participation in CAS Literature Database Construction

In the 1990s, while serving as Director of the CAS Literature Database Expert Committee Office, Mr. Meng attached great importance to reforming and improving management systems and operational mechanisms, vigorously promoting the development of CAS literature database construction. First, he reformed the management system for literature database construction, changing from the original model where each discipline independently determined source journals, processed data separately, and provided independent services to a centralized management, distributed processing, 全院共享数据资源 (全院共享数据资源), and multi-channel service provision model. He also changed the original block funding approach to a post-control pricing-based allocation method.

Second, he placed high importance on unified standards and operational mechanism construction, establishing unified data processing and service standards and specifications, and creating centralized and distribution mechanisms during data processing. This unified the originally dispersed literature database construction work into a master database construction effort, building a large-scale "Chinese Science Literature Database" with certain authority in the natural sciences field in a relatively short time. Third, he proposed a user-centered development concept, striving to expand user services, and cooperated with the CAS Network Management Center to achieve China's earliest internet-based scientific literature online retrieval service. Fourth, he emphasized seizing market initiative in database construction, actively developing new database products, and successfully developing a demonstration full-text literature database [3]. In the mid-to-late 1990s, CAS built a series of literature databases including the "Chinese Science Literature Database" and "Chinese Science Citation Database," and developed various CD-ROM database products, demonstrating the development level of domestic database construction at that time [4].

### 2.3 Summarizing the Development of China's Literature Database Construction

Having personally experienced various stages of China's literature database construction, Mr. Meng wrote articles at the turn of the century to sort out its development history. In his article "A Brief Review of China's Literature Database Construction in the 1990s" [5], he not only analyzed the development characteristics of literature database construction in different periods but also provided profound analysis of its operational models. He pointed out that from the mid-1980s to early 1990s, literature database application and service work had significant limitations due to the lack of computer technology popularization, absence of networks, weak infrastructure, and the tendency of this period's database construction to be career-oriented management with emphasis on development over service and social benefits over economic benefits. From the early to late 1990s, database construction technology continuously improved, computer applications in libraries became increasingly popular, and particularly with the deepening of China's science and technology management system reform, a large number of market-oriented database construction and service companies emerged, various types of literature database products were successfully developed and brought to market, and more institutions and research/teaching personnel began to understand and utilize Chinese database products, bringing vitality to China's literature database construction and application. Mr. Meng's evaluation of the situation at that time was concise yet accurate: enterprise management brought vitality to database construction, commercialization gradually formed a database market, abstract literature databases became increasingly mature, CD-ROM database products were rich and colorful, networked online retrieval systems developed rapidly, full-text literature databases emerged as new forces, and scientific evaluation literature databases developed distinctive features [5]. These few words precisely described the overall development trend of China's

literature database construction at the end of the 20th century.

## 3. Exploration of Digital Library Theoretical Systems

Around 2000, with strong support from various national ministries and commissions, China began digital library construction work. Several digital library projects were launched successively, including the "China Academic Library & Information System (CALIS)" led by the Ministry of Education, the "China Digital Library Project" initiated by the National Library, the National Science and Technology Library and its "National Science and Technology Literature Resources Network Service System" organized by the Ministry of Science and Technology, and the "National Science Digital Library" constructed by the Chinese Academy of Sciences. These projects painted a magnificent development picture for China's library and information services at the turn of the century. To gain in-depth understanding of the construction and service characteristics of this new phenomenon, entrusted by NSTL leadership, Mr. Meng formed a "Digital Library Theory and Practice Research" task group, organizing 11 staff members and doctoral students from the CAS Documentation and Information Center to spend more than half a year completing the research and writing a research report. Based on this work, he published the article "Several Thoughts on Developing China's Digital Library Undertaking" [6], which comprehensively elaborated on the development path of China's digital library construction and explored possible service models for digital libraries by analyzing the research and construction of digital libraries in major countries worldwide. He subsequently taught the doctoral course "Digital Library Theory and Practice" at the CAS Documentation and Information Center for many years, continuously enriching his understanding of digital library theoretical systems and development trends.

### 3.1 Digital Library Macro-Strategy Research

Regarding the definition and role of digital libraries, Mr. Meng believed that although there is no universally accepted definition for digital libraries, they should never be understood through the narrow concept of "digitized libraries." Digital libraries will completely break away from the limitations of traditional physical libraries in solely carrying literature information dissemination functions. In a future system where public access is universal, public institutions are responsible for distributed management, and integrated services are intertwined, "digital libraries" will become information operation platforms and main service hubs, evolving into "national-level digital information resource centers" and further developing into nationwide, cross-regional, cross-departmental, and cross-industry information resource networks and knowledge kingdoms.

**3.1.1 Digital Libraries Completely Transform Social Information Service Models** Mr. Meng believed that although digital libraries emerged in the United States in the 1990s, their development boom and practical trends

worldwide would fundamentally transform human society's modes of information preservation, dissemination, and utilization. China's previous information transmission and service industries, represented by libraries and information services, suffered from low information resource integration, poor sharing capabilities, and insufficient investment in traditional resource and service facility construction. The construction and operation of digital libraries would greatly change China's backward information service situation, meeting the rapidly expanding information needs of the entire society, including education, scientific research, and technology, at faster speeds and in more convenient ways. Therefore, the construction of digital library systems would be a national information infrastructure project that should not and could not be undertaken solely by individual libraries or even the library community alone, requiring unified national organization and coordination of the engineering construction.

**3.1.2 Digital Libraries Challenge Traditional Library and Information Work Models** In the 1980s, Mr. Meng participated in formulating reform and innovation plans for the integration of library and information services at CAS, promoting the development of integrated library and information work at the Academy. With the arrival of the network era, his understanding of "integration" gained new dimensions and connotations. In the article "Evolution of Integrated Library and Information Work Models Under Network Environment" [7]—which he guided his doctoral student to write—he conducted in-depth analysis of integration issues. Before the network era, integrated library and information work was library-centered because information research work mainly focused on processing and analyzing library collection resources, making it difficult for information researchers to widely utilize resources beyond library collections. The purpose of integration was primarily to provide information researchers with a good environment for accessing literature resources while enabling better development and utilization of library resources.

Mr. Meng believed that with the deepening of digital library research and construction practice, and in an increasingly pervasive and fast network information environment, continuously improving digital library services and convenient network information resource access helped information researchers gradually break away from dependence on specific library collections and thus from complete reliance on traditional libraries. Information researchers could use various intelligent knowledge analysis tools to organize, integrate, analyze, and process massive network information resources, extracting knowledge content reflected in various types of digital resources to provide decision support services for users. In other words, in the digital library era, the connotation of "library and information integration" should change—it should no longer emphasize the "integration" of organizational management systems but rather provide integrated information solutions tailored to users' teaching and research needs.

**3.1.3 Recommendations for Promoting China's Digital Library Development** Addressing problems in China's digital library construction process

at that time—such as insufficient understanding and attention from government and society, lack of organic connections in management measures, few research institutions, inadequate technology development, and insufficient emphasis on resource construction—Mr. Meng proposed corresponding countermeasures and suggestions based on research and reflection: (1) raise awareness and transform concepts; (2) formulate development plans and improve relevant laws; (3) establish experimental digital libraries to gain experience; (4) accelerate talent cultivation; (5) speed up construction and transformation of information network infrastructure; (6) increase research and construction investment; (7) improve organizational construction systems and mechanisms; and (8) pay attention to tracking and learning from advanced foreign digital library technologies and management experience [6]. Today, in the context of mobile internet and 5G high-speed information transmission, reviewing Mr. Meng's cognition and foresight regarding digital library development paths and paradigms from 20 years ago reveals their scientific nature and forward-looking perspective. Particularly noteworthy is his early proposal to introduce market mechanisms in digital library construction and emphasize using economic levers to mobilize participation from all social sectors—a principle that has been widely applied today with excellent results and has withstood practical testing.

### 3.2 Exploration of Digital Library Construction Fields

#### 3.2.1 Construction and Application of Digital Information Resources

Mr. Meng attached great importance to digital information resource construction and application, pointing out that the digitization of literature information resources is an important foundation for promoting resource co-construction and sharing and for developing digital library construction and services. Libraries should emphasize developing various types of digital information resources. He published a series of articles on digital resource construction in network environments, collaborating with students or colleagues. In articles such as "On the Digital Construction of Literature Information Resources" [8], he analyzed the types and characteristics of digital information resources, key technologies in digital construction, selection of resources requiring digitization, and issues of co-construction and sharing of digital resources, discussing principles such as economy and standardization that should be followed in the digital construction process. Some articles also explored digital construction and service issues for different types of literature resources—for example, "On the Construction of a National Digital Resource Guarantee System for Doctoral and Master's Theses" [9] and "The Construction and Service Model of Australia's National Thesis Database and Its Enlightenment to Us" [10] introduced foreign developments, analyzed the current situation of China's thesis database construction, and made recommendations regarding construction models and further development.

When digital information resource construction reached a certain scale and digital libraries began preliminary operations, problems such as information overload, uneven quality, lack of effective organization and management models,

and information delivery methods became apparent, greatly affecting users' confidence in effectively accessing and utilizing relevant information resources. Starting from the concept of digital information resource integration, Mr. Meng co-published papers with his students focusing on analyzing the characteristics of digital information resource integration and exploring new services in digital libraries regarding information resource organization, full-text delivery, retrieval and search paths, navigation systems, reference consultation, and personalized services, comparing them with corresponding work in traditional physical libraries. Using examples such as CALIS, NSTL, and CSDL, he studied integration forms of digital information resources, subject information portals, and subject gateways that provide one-stop retrieval and content-based information guidance systems. He proposed key issues to address in digital information resource integration services, including: scientifically planning the disciplinary fields for information integration, adopting new standards and technologies to integrate resource systems, establishing integration mechanisms including open information resources such as open description, open data interfaces, and open service interfaces, and emphasizing dynamic link resource reliability and stability, system maintenance and updates, and compliance with various network system standards and specifications [13]. Mr. Meng's arguments in academic papers have important practical significance for digital library data exchange, software interoperability, semantic services, and information reorganization [14-19].

**3.2.2 Digital Library-Related Technologies** In articles such as "A Brief Analysis of the History and Trends of American Digital Library Research and Construction" [11] and "India's Open Access Activities for Information Resources and Their Enlightenment" [12], Mr. Meng summarized the development trends of American digital library research and construction, tracking and analyzing the development of key U.S. digital library projects over more than a decade, including the Digital Libraries Initiative and the National Science, Mathematics, Engineering, and Technology Education Digital Library program. He also introduced India's promotion of open access activities for information resources and proposed relevant suggestions for China's situation. In articles such as "Research on Digital Information Resource Integration" [13] and "Analysis of Personalized Information Reorganization Models Under Network Environment" [14], he conducted in-depth analysis of digital information resource integration and utilization issues. These extensive and in-depth studies and explorations deepened domestic academic understanding of the significance, construction models, and technical methods of digital resource construction, playing a positive role in promoting China's digital library construction.

**3.2.3 Digital Reference Services** Reference consultation is one of the most basic library services. Digital reference services expand the forms and connotations of traditional reference consultation and constitute an indispensable component of digital libraries. In the digital environment, online users have higher

expectations and more demands for consultation services, posing new challenges to digital reference services.

Mr. Meng consistently paid close attention to theoretical and practical developments in this area. In co-authored articles such as "The Digital Challenge of Reference Services" [20], "Development and Issues of Digital Reference Services" [21], "On Real-time Network Reference Services—With a Description of NSTL Real-time Reference Consultation System Construction and Service" [22], and "Overview of the Development of Digital Reference Consultation in China" [23], he conducted in-depth discussions on related issues. He detailed the progress of foreign digital reference services, such as the Collaborative Digital Reference Service (CDRS) implemented by the Library of Congress, summarized the research and practice progress in this field in China, and proposed that establishing relevant knowledge bases and vigorously developing inter-library cooperation are essential for good digital reference services. He organized research projects focusing on establishing real-time digital reference services for NSTL, with research results contributing to the official launch of NSTL's self-developed real-time digital reference consultation system on September 28, 2004, which deepened the connotation of NSTL's network system services and was widely welcomed by users.

**3.2.4 Long-term Preservation of Digital Resources** The stability and long-term preservation of digital resources are critical factors for digital library construction and services. After China's digital library construction initially got on track, Mr. Meng began paying attention to this issue. He co-authored the article "Preserving History for the Future—An Introduction to Australia's Web Resource Archive PANDORA" [24], introducing foreign ideas and measures for long-term preservation and permanent use of digital resources and discussing strategies, methods, and technical support for long-term preservation and services of digital resources. Mr. Meng pointed out that future network information resources will continue to increase, while early information publishers rarely paid attention to long-term preservation. The information society needs to strengthen long-term preservation of digital information resources, not only to retain history but also to protect and preserve the potential value of information to support future teaching, research activities, and meet future users' information needs.

## 4. Innovative Practice in Digital Library Construction

While conducting theoretical research and teaching graduate students, Mr. Meng presided over or participated in several digital library construction projects starting in 2000, including the National Science and Technology Library (NSTL) organized by the Ministry of Science and Technology and other ministries, the Chinese Science Digital Library (CSDL) constructed by the Chinese Academy of Sciences, the key project of scientific infrastructure work supported by the Ministry of Science and Technology—China's digital library

standards and specifications construction project, and the Super Thesaurus and Ontology Construction for Foreign Scientific and Technological Literature Information (STKOS) project, achieving the integration of digital library theoretical research and innovative practice.

### 4.1 National Science and Technology Library

To adapt to the development of modern information processing service technology and network technology, fully develop and utilize the rich scientific and technological information resources accumulated by domestic systems over many years, the Ministry of Science and Technology proposed in July 1999 a cross-system resource co-construction and sharing project implementation plan—building the China Scientific and Technical Literature Information Network Service System. Following the principles of distributed data processing, centralized database construction, centralized retrieval, and distributed services, it would provide comprehensive secondary literature retrieval and primary literature provision services to scientific research users nationwide via the Internet. On June 12, 2000, the National Science and Technology Library (NSTL) was formally established, and on December 26, 2000, the network service system organized by NSTL officially opened, marking the initial success of China's largest information resource co-construction and sharing project and the formal emergence of China's largest national science and technology digital library on the historical stage [25-26].

As a member of the NSTL preparatory group, Mr. Meng participated in drafting documents such as the "National Science and Technology Library Charter" and "National Science and Technology Library Council Charter." As a member of the NSTL Office, he participated in drafting the NSTL medium and long-term development plan, multiple five-year development plans, and annual work plans. As Director of the NSTL Database Construction Department, he was fully responsible for organizing NSTL data processing and literature database construction, drafting data processing plans, organizing the formulation of data processing management methods and work specifications, and organizing member units to implement data processing tasks, vigorously promoting the construction of NSTL's information resource strategic guarantee system adapted to the digital environment. During his nearly 18 years at NSTL, Mr. Meng dedicated his efforts and wisdom to promoting the formation and consolidation of NSTL's innovative co-construction and sharing management system and operational mechanism, promoting the creation and improvement of the network-era digital scientific and technical information service system oriented to the whole country, and promoting the establishment and development of NSTL's literature resource digitization processing system.

### 4.2 Chinese Science Digital Library

Mr. Meng comprehensively participated in and actively promoted the construction of the Chinese Science Digital Library. In 2000, as Chairman of the Aca-

demic Committee of the CAS Documentation and Information Center, he served as a core member of the drafting group, successively drafting the "CAS Digital Library Construction Plan" and "National Science Digital Library Construction Plan Proposal," and participated in project application and preliminary implementation preparations. In 2001, the Chinese Science Digital Library (CSDL) project officially launched as a major infrastructure construction project of the CAS Knowledge Innovation Program. The project's goal was to build a scientific information sharing guarantee environment across the entire CAS, establishing an integrated, one-stop resource integration system that integrates and links global scientific research information resources to form an information environment supporting digital scientific research across the Academy. As Director of the Project Management Center Office, Mr. Meng participated in macro-management and overall coordination of the project, playing a positive organizational and promotional role in the construction of CSDL's literature resource guarantee system, subject information portal websites, union catalog construction, full-text delivery services, distributed reference consultation, open system description mechanisms, and distributed portal service specifications.

### 4.3 China's Digital Library Standards and Specifications Construction Project

The "China Digital Library Standards and Specifications Construction" project, participated in by dozens of domestic library and information institutions, was a key project of the Ministry of Science and Technology's scientific infrastructure work special funds. Mr. Meng participated in project pre-research and application organization work. As leader of one sub-project, he organized research on the "Digital Resource Unique Identifier Application Specification." Through several years of joint efforts by experts from the CAS Documentation and Information Center, National Library, Peking University, Central Party School, and other institutions, the project completed its first and second phase research tasks. Through open experiments, it proposed a digital object unique identifier application specification suitable for China's digital library development, laying a solid foundation for establishing a practical unique identifier system for digital library systems.

### 4.4 Super Thesaurus and Ontology Construction for Foreign Scientific and Technological Literature Information

With the vigorous development of massive scientific and technical literature resources and knowledge discovery systems represented by the "National Scientific and Technical Literature Resources Network Service System," how to effectively organize, deeply reveal, and associate resources to enhance knowledge discovery, mining, and computing application capabilities became a fundamental and critical issue facing China's scientific and technical literature information institutions in improving their knowledge service capabilities. As a team member, Mr. Meng participated in the early research, feasibility study report and

task document writing, and project application organization for the "Knowledge Organization System Construction and Application Demonstration for Foreign Scientific and Technological Literature Information" (Scientific & Technological Knowledge Organization Systems, STKOS). After the project was approved by the Ministry of Science and Technology, Mr. participated in related organizational work as a project team member and participated in the organization and research of sub-projects such as "STKOS Intellectual Property Response Strategies" and "Knowledge Organization Category System Construction." The project's completion is of important practical significance for better developing and utilizing the literature information resources of the national scientific and technical literature sharing platform, giving full play to the comprehensive utilization benefits of literature information resources, and accelerating the improvement of China's literature information knowledge-based, intelligent, and integrated service capabilities.

Even in his seventies, Mr. Meng continues to write prolifically, paying close attention to the latest developments in the library and information field and the profound, positive changes of datafication, intellectualization, and precision in digital libraries driven by innovative technologies. His persevering academic attitude and rigorous, pragmatic work style continue to inspire and motivate his students and younger generations of library and information professionals to forge ahead despite difficulties, dedicate themselves to the field, and innovate courageously.

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**Author Contributions:**
Wang Xin: Formulated the paper framework and wrote the paper;
Li Hong: Collected and processed main content, wrote the paper;
Wan Ling: Determined the paper framework, collected materials, and revised the final draft.

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