Evolution and Development of the Information Resource Management Discipline for Scientific and Technological Self-Reliance and Strength: Postprint

Authors: Qin Shun, Qin Shun

Date: 2023-04-06T00:00:00+00:00

Abstract

Purpose/Significance: Against the backdrop of disciplinary renaming, this paper analyzes and reflects on the development path of information resource management discipline oriented toward high-level scientific and technological self-reliance and strength, aiming to expand disciplinary connotations, enrich the disciplinary system, and contribute disciplinary strength to accelerating the construction of a scientific and technological powerhouse.

Methods/Process: Based on literature research and national strategic orientation, this paper proposes the issue that "serving scientific and technological self-reliance and strength is an important dimension of information resource management discipline development," and observes the evolution and development of this discipline in serving the goal of scientific and technological self-reliance and strength from three dimensions: history, reality, and future.

Results/Conclusion: Oriented toward scientific and technological self-reliance and strength, China' s information resource management discipline faces practical problems such as vague goal positioning, prominent supply-demand contradictions, and weak core capabilities. To strengthen disciplinary effectiveness and better promote innovation and development in the industry, several recommendations are proposed: facing realistic contexts, strengthen disciplinary institutional construction; adhere to absorption and reference, build an independent knowledge system; promote integration and mastery, emphasize interdisciplinary collaboration; improve talent echelons, and stimulate disciplinary development momentum.

Full Text

Evolution and Development of Information Resource Management Discipline Oriented to Self-Reliance in Science and Technology

Qin Shun
School of Information Management, Wuhan University, Wuhan 430072

Abstract:
[Purpose/Significance] Against the backdrop of disciplinary renaming, this paper analyzes and reflects on the developmental path of information resource management discipline oriented toward high-level self-reliance in science and technology, aiming to expand disciplinary connotations, enrich the disciplinary system, and contribute to accelerating the construction of a technologically powerful nation. [Method/Process] Based on literature research and national strategic guidance, we propose the proposition that "serving self-reliance in science and technology represents an important dimension for the development of information resource management discipline," and examine the evolution and development of this discipline in serving the goal of self-reliance in science and technology from three dimensions: historical, present, and future. [Result/Conclusion] In facing the challenge of self-reliance in science and technology, China' s information resource management discipline confronts practical problems such as vague target orientation, prominent supply-demand contradictions, and weak core capabilities. To strengthen disciplinary effectiveness and better promote innovation and development in the field, we propose several recommendations: grounding in real-world contexts to strengthen disciplinary institutional construction; adhering to absorption and reference to build an independent knowledge system; promoting integration and emphasizing interdisciplinary collaboration; and improving talent echelons to stimulate disciplinary development momentum.

Keywords: self-reliance in science and technology; information resource management; disciplinary system

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1. Problem Introduction

The disciplinary system is considered a knowledge classification institution that profoundly influences the construction of academic and discourse systems and serves as an important guarantee for the development of various industries. Since the germination and establishment of library science in China, the discipline has continuously evolved by exploring the interaction patterns between data, information, knowledge, intelligence, and wisdom with users, society, and the nation, giving rise to cognate disciplines such as intelligence science, archival science, and data science, gradually forming the library, information, and data science discipline cluster. The Ministry of Education (formerly the State Education Commission) has adjusted the *Undergraduate Major Catalogue of Regu-*

lar Institutions of Higher Education four times in 1987, 1993, 1998, and 2012, during which the various sub-disciplines of this discipline were once scattered under the categories of literature and science. The name of the first-level discipline at the graduate level has undergone multiple changes since 1983, evolving from "Library and Information Science" (1990 version) to "Library, Information, and Archival Management" (1997 version), then to "Library, Information, and Archival Management" (2011 version). As early as 2000, there were already proposals to use "Information Resource Management" as the name for a first-level discipline. In the latest 2022 version of the *Graduate Education Discipline and Major Catalogue* released by the Academic Degrees Committee of the State Council and the Ministry of Education, "Information Resource Management" has become the unified name for coordinating the development of this discipline, providing new space for overcoming previous problems such as limited patterns, difficulties in student enrollment and scale, and logical errors, though concerns remain about the weakening of traditional sub-disciplines and merely treating symptoms rather than root causes. Therefore, it is necessary to construct an information resource management disciplinary system that can answer China' s questions, world questions, people' s questions, and epochal questions by integrating national strategic orientation and practical contexts.

Books, intelligence, archives, and even data all possess the attributes of information resources. Chinese-style modernization requires building a complete strategic scientific and technological strength system, and one of the missions of information resource management is to obtain information about science, technology, and industrial frontiers through various channels and provide high-level services, representing a key foundational task for "controlling the commanding heights and initiative" in scientific and technological development. Since 1956, China' s successive scientific and technological development plans have attached considerable importance to the deployment of library, intelligence, and other information resource management work. The Fifth Plenary Session of the 19th CPC Central Committee proposed "adhering to the core position of innovation in China' s modernization drive and taking self-reliance in science and technology as the strategic support for national development." The national "14th Five-Year Plan" and the 2035 Long-Range Objectives, as well as the report of the 20th CPC National Congress, have repeatedly reaffirmed the epochal orientation of high-level self-reliance in science and technology, providing policy guidance for the development of the information resource management discipline. As the foundation for national prosperity and security, self-reliance in science and technology cannot be separated from the guarantee of the information resource management discipline. Analyzing the evolution and construction strategies of the information resource management discipline oriented toward self-reliance in science and technology will help promote the realization of the strategy for a strong science and technology nation and break international scientific and technological blockades. Based on this, by analyzing the historical origins, practical problems, and innovative directions of the development of the information resource management discipline serving self-reliance in science and

technology, this paper aims to provide references for strengthening disciplinary effectiveness and better promoting innovation and development in the field.

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2. Historical Review: Seeking Experience from Disciplinary Evolution

2.1 Early Emergence: Disciplinary Evolution in the Context of Western Learning Spreading to the East

In 1916, an article titled *The Origin of Initiating Library Construction* published in *Science* magazine noted that "the matter of learning requires tracing back to sources through literature, and investigating principles through things also depends on books. At present, domestic collections are incomplete, with scarce encyclopedic books, making library establishment an urgent task," beginning to recognize the role of scientific and technological libraries in science education. Modern library science in China was established in the 1920s, with archival science emerging in the 1930s. In the process of national salvation, the library profession was based on the idea of "saving the nation through education," and library science aimed to awaken the people and popularize knowledge. Against the backdrop of "Western learning spreading to the East," a group of scholars actively introduced and absorbed advanced foreign library science theories, concepts, and methods. The goal of "continuing translation to benefit the profession" and learning from Western strengths to counter Western challenges became the objective of library scientists such as Yang Zhaojing, Qian Yaxin, and Li Yanting. Du Dingyou believed that introducing Western theories meant "on the one hand importing emerging Western sciences, and on the other hand transforming China' s inherent methods." The introduction of Western translations, to some extent, filled the gaps in Chinese library science and met the management needs of new-style libraries. The return of overseas students such as Shen Zurong, Hu Qingsheng, and Qiu Kaiming also injected fresh blood into the development of Chinese library science. During the New Library Movement, scholars represented by Liang Qichao proposed the century-long proposition of building Chinese library science. Liu Guojun called for "forming a library science that suits China' s national conditions" ; Jin Minfu advocated building "library science suitable for Chinese library applications"; Du Dingyou promoted specialized library science, combining European and American library management methods to promote the development of Chinese library science; Xu Jialin discussed theoretical issues such as the concept of scientification of library science, scientific research methods, and scientific research spirit. Unfortunately, the development of both library science and archival science during this period focused mainly on fulfilling cultural missions. While consciously promoting national awakening and improving public scientific literacy, it was difficult to form disciplinary theories and knowledge systems that could support scientific and technological development under the political and economic conditions of the

time. However, this period accumulated rich disciplinary heritage, with library science and archival science providing necessary theoretical methods and talent support for the transformation and development of scientific and technological information work.

2.2 Establishment: Disciplinary Evolution Under the Pressure of Breaking Blockades

Breaking through technological blockades has been a major task in China' s development. In the early period of the People' s Republic, with weak industrial, military, and technological foundations, the United States and other countries imposed long-term comprehensive blockades and isolation on China. Library and intelligence work, as a major lever, received high attention from the Party and the state, and intelligence science subsequently entered the disciplinary system, playing an important role in breaking technological blockades. In 1956, the Party Central Committee issued the call to "march toward science." Premier Zhou Enan emphasized that it was necessary to prepare books, archival materials, technical materials, and all other necessary conditions for the development of scientific research, and to strengthen the work of libraries, archives, and museums. Subsequently, the library science field published the editorial *Library Work in the March Toward Science*, sparking a boom in professional learning and research, and library science gradually formed a functional orientation of assisting scientific and technological innovation. Archival science was established as an independent discipline, giving rise to sub-disciplines such as scientific and technological archival management and archival preservation technology. In 1958, the founding of the Department of Scientific and Technical Intelligence at the China University of Scientific and Technical Information marked the origin of intelligence science education and indicated that a discipline system oriented toward scientific and technological innovation development had begun to take shape.

Reform and opening up promoted the integrated and symbiotic development of Chinese library science, intelligence science, and archival science, making the disciplinary system more open and inclusive. The development of Chinese scientific and technological archival management delved into the archival work practices of scientific and technological production departments, summarizing experiences and elevating them to theories, forming a characteristic of being derived from practice and serving practice. The ability of intelligence science to support scientific and technological development was significantly enhanced. Starting in 1978, Wuhan University established a complete undergraduate, master' s, and doctoral training system for scientific and technical intelligence, offering a curriculum system adapted to the business processes of scientific and technical intelligence work. Peking University and the Institute of Scientific and Technical Information of China obtained authorization for master' s degree programs in scientific and technical intelligence. During this period, the development of Chinese intelligence science was influenced by Mikhailov' s scientific

intelligence system school and introduced Western intelligence science thoughts and theoretical systems, including those of Brookes, Saracevic, Yovits, Vickery, and Lancaster, forming a relatively complete disciplinary system, education system, and academic exchange system. This period clarified the role positioning of "eyes and ears, vanguard, and staff officer," introduced a large number of foreign works, thoughts, and theories, and explored localized intelligence science theoretical achievements and systems. For instance, Bao Changhuo proposed the disciplinary framework of Chinese intelligence science, establishing a methodology system for directional selection and scientific abstraction that transforms information into intelligence products, which to some extent resolved the absorption problem of "imported doctrine" in breaking through blockades.

2.3 Exploration: Disciplinary Evolution Under the Information Wave

From the 1990s onward, waves of informatization, marketization, and internationalization swept across the library, intelligence, and archival management fields. In 1992, the State Science and Technology Commission decided to change "scientific and technical intelligence" to "scientific and technical information," proposing disciplinary names such as information system management, knowledge information resource science, literature resource science, and literature information management. Library science and intelligence science were considered the foundation and leading disciplines of information management. In 1993, the Ministry of Education renamed the "scientific and technical intelligence major" to "scientific and technical information management," and in 1996, the scientific and technical intelligence major in the graduate training catalogue was adjusted to intelligence science, which exited the undergraduate education system two years later. During this period, the "Grand Intelligence Concept" emerged, information management theories rose, and the information management orientation of intelligence science education corresponded to information resource management theory becoming the mainstream theory, forming an information management school based on library and intelligence science. The integrated development model of "theory-education-practice" promoted the development of China' s scientific and technical intelligence cause.

On the one hand, the theoretical and practical boundaries of this discipline were extended and expanded, at least to management and security perspectives. On the other hand, some scholars opposed information generalization and called for deepening the disciplinary connotations of library science and intelligence science. In essence, the continuous expansion of professional scope and the divergence of views on discipline and knowledge system construction oriented toward scientific and technological innovation indicated that a first-level discipline lacking coordinating power would result in weak disciplinary identity and cohesion, and the specialized path of sub-disciplines would also be restricted by vague positioning. In the process of digital transformation, this debate gradually converged under "information management" and "information resource management."Chinese scholars such as Meng Guangjun and Hu Guoqing introduced and

developed information resource management theory, and the library, information, and archival management discipline formed the foundation and advantages for engaging in "information resource management" research. The academic community and journals dominated information resource management research, providing a solid foundation for information resource management discipline construction, though the weakness of disciplinary institutional construction in guaranteeing self-reliance in science and technology remains an undeniable fact.

2.4 Prosperity: Disciplinary Evolution in the Context of "Two Overall Situations"

The renaming of the discipline to "information resource management" occurs at a critical historical stage of the "two overall situations" proposed by General Secretary Xi Jinping. Simultaneously, scientific and technological competition has become the focus of global 博弈, with a new round of international scientific and technological blockades against China intensifying. China has increasingly recognized the need to establish an independent disciplinary and knowledge system, and accelerating the construction of an information resource management disciplinary system, academic system, and discourse system with Chinese characteristics has received high priority. Disciplinary development has shifted from imitation to innovation, with significantly more explorations using Chinese theories to explain Chinese practices. For example, research has summarized the historical experience of the library industry' s participation in building a moderately prosperous society in all respects, explored development measures for building a world-class library system oriented toward the 2035 cultural powerhouse goal, and reflected on library science as a functional body that ensures information access and retrieval. The discipline has fully participated in building high-end exchange platforms for research papers and scientific and technical information, constructed an intelligence support system for self-reliance in science and technology, and reconstructed an intelligence science education system that returns to the "intelligence" standard.

Examining recent research, the academic community has actively clarified its characteristics and positioning by reviewing the origins and development of the discipline, sorted out the evolution of disciplinary structure and academic scope, core propositions, and research methods, and emphasized responding to the historical mission of basic theories. In the past, the three main sub-disciplines of library science, intelligence science, and archival science within the first-level discipline were considered to play irreplaceable unique roles in public culture, scientific and technological innovation, and digital memory, but had not condensed the theoretical core and common foundation of the discipline. In the short term, the impact of disciplinary renaming has not yet been transformed into transformative momentum, but at least for the future, information resource management discipline construction has actively responded to and practiced the *New Liberal Arts Construction Declaration*, which will facilitate the absorption of external theoretical methods and knowledge technologies from other disci-

plines, embody Chinese characteristics in an international context, and respond to the practical needs of scientific and technological innovation.

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3. Reality Check: Identifying Problems from the Perspective of Self-Reliance in Science and Technology

Promoting self-reliance in science and technology is the strategic support for the Chinese-style modernization path, requiring mastery of the initiative in scientific and technological innovation development to respond to national, social, and industry development needs, cope with Western technological blockades, and ultimately achieve high-level self-reliance in science and technology, promote high-quality development of the scientific and technological cause, and lay a solid scientific and technological foundation for building a modern powerful country. Historical experience has proven that information resource management is the foundation for achieving independent development of the scientific and technological cause. From scientific and technological "self-reliance" to "self-strengthening," information resource management discipline is correspondingly required to possess strategic support capabilities, demand guarantee capabilities, and diversified competition-cooperation capabilities, forming an information resource management disciplinary system, academic system, and discourse system with Chinese characteristics to ensure the independent, autonomous, and secure development of the scientific and technological cause. At present, this discipline still deviates from the orientation of high-level self-reliance in science and technology in terms of target orientation, supply-demand structure, and core capabilities, requiring adherence to tradition while innovating, and strengthening the summarization of laws and exploration of paths in research, teaching, and practice.

3.1 Vague Disciplinary Target Orientation

The library, information, and archival management discipline has undergone complex disciplinary affiliation adjustments, with problems such as imprecise positioning, blurred boundaries, and dissipated characteristics long troubling its development. Whether in the *Undergraduate Major Catalogue* or the *Graduate Education Discipline and Major Catalogue*, the name of this first-level discipline has undergone multiple adjustments, which is relatively rare among all disciplines, indicating that the discipline has failed to induce a rigorous and self-consistent superordinate concept, with unclear connotations and ambiguous directions for development. Within the discipline, views such as stripping intelligence science to set it as a first-level discipline or even placing it under the national security science discipline are frequently heard. Scientific and technical intelligence science has disappeared into history and exists in name only, while library science and archival science cannot meet the requirements of the self-reliance in science and technology goal, and emerging sub-disciplines such

as data science, digital humanities, and big data management and application are still immature.

Under the new era background, facing national strategic goals, new requirements for self-reliance and self-strengthening, new business scenarios, new trends in frontier technologies, and the need for continuous innovation, the information resource management discipline should take supporting self-reliance and self-strengthening in science and technology and cultural confidence as its fundamental guideline to help promote the realization of Chinese-style modernization. It cannot be ignored that, facing self-reliance in science and technology, the research and professionalism of this discipline are declining, with intelligence science even facing significant trends of generalization and marginalization. Short-sighted "market-oriented education" behaviors in a certain period have violated disciplinary construction laws and cannot meet the requirements of the overall national security concept. This has caused the discipline to gradually become absent in serving national strategic needs, losing its disciplinary character and being unable to ensure that the lifeline of science and technology is firmly held in its own hands.

The century-long development history of the information resource management discipline demonstrates that sharing the same breath and destiny with national development and serving self-reliance in science and technology is the main task and should become the primary development direction of this discipline. Achieving this mission requires strengthening disciplinary target orientation and enhancing disciplinary cohesion as its foundation. Renaming the discipline to "information resource management" is a long-cherished wish and a consensus achievement, granting the discipline space and responsibility for expansion and innovation, which provides new opportunities for reintegrating sub-disciplines and enhancing the discipline' s ability to serve the strategy of building a powerful science and technology nation. Currently, although scientific and technical intelligence research has regained academic attention, the talent training mechanism for serving self-reliance in science and technology is missing. How to accurately position and adapt to national needs within the greatly expanded disciplinary scope and refine disciplinary division of labor must be given due attention. Therefore, taking the reorientation of disciplinary targets as the leading factor to promote the reconstruction of theoretical systems, reform of education systems, and restructuring of faculty should be timely.

3.2 Prominent Contradictions Between Supply and Demand

Adhering to the orientation toward the frontiers of world science and technology, the main economic battlefield, major national needs, and people's life and health is the latest guideline for promoting the development of China' s scientific and technological cause in the new era, posing new requirements for the construction of the information resource management discipline system. From the demand side, China has the world' s largest scientific and technological talent team, with tens of millions of daily queries, clicks, readings, and downloads of scien-

tific and technological literature on different platforms. National laboratories, state key laboratories, important enterprises, and key scientific research institutions have enormous demand for information resource management talents, requiring this discipline to form systematic, autonomous, and supportive capabilities to guarantee the development of the scientific and technological cause. However, from the supply side, the information resource management discipline is disconnected from the development of the scientific and technological industry and national and user needs. Constrained by the discipline' s support and guarantee capabilities, the main problems facing the industry' s development include but are not limited to: First, the information resource management system has not achieved seamless and full-coverage configuration oriented toward national scientific and technological strategies and industry-wide development requirements. Compared with major world scientific and technological powers, China still lacks national-level scientific libraries, libraries serving the "national scientific and technological team,"and libraries at "technology sources."The organizational structure of scientific and technical intelligence has become relatively dispersed due to institutional reforms, with reduced systematic capabilities and insufficient functional coordination and planning.

Second, the discipline' s ability to guarantee the autonomy of scientific and technological innovation is not high, facing problems such as insufficient total collection of scientific and technological information resources, poor accumulation, high dependence on foreign high-level scientific research resources, and constraints on literature resources in key core technology fields. The construction of scientific and technological information resources such as scientific papers, scientific and technical reports, scientific data, international standards, and patent literature faces structural risks including insufficient allocation, uneven distribution, and substandard quality, as well as risks affecting accessibility such as unstable ownership, fragile structures, and limited channels. Third, the talent team is insufficiently configured and inadequately qualified, resulting in low levels of service for self-reliance in science and technology. The international common goal for expanding intelligence personnel is that "intelligence personnel should account for 2%-5% of the entire scientific and technological personnel team," while China currently accounts for only 1.2%, compared with 8% in the Soviet Union in 1974 and about 4% in Europe, America, and Japan. Apart from the quantitative gap, the problem of severe shortage of strategic scientists oriented toward self-reliance in science and technology and uneven distribution of scientific and technological information talents also remains unresolved, with a particular lack of talents capable of assessing international scientific and technological frontiers, disruptive and key technologies, and strategic intelligence. These problems require the discipline to provide answers in its continuous transformation and development to respond to practical demands.

3.3 Weak Core Disciplinary Capabilities

Mature disciplines typically possess strong core capabilities. Scientific and technological research has already transcended single disciplinary boundaries; however, great power games have led to blocked information and intelligence exchanges, testing the core capabilities of this discipline. For the information resource management discipline oriented toward self-reliance in science and technology, it should possess system confrontation capabilities and master the initiative in disciplinary development and promoting scientific and technological progress. However, the discipline still faces constraints arising from weak core capabilities, such as intelligence science' s difficulty in building a solid disciplinary foundation due to conceptual drift, and the integration of existing research paradigms with new technologies not reflecting strong disciplinary characteristics. The dilution of intelligence elements, unclear core fields, and disciplinary positioning controversies have forced intelligence work to "detour" to functional departments such as government information, strategic planning, scientific and technological supervision, achievement transformation, and regional innovation.

To date, China' s information resource management discipline has not yet possessed an independently controllable theoretical system and technical products. On the one hand, widely applied theories such as literature growth, dispersion, measurement, and evaluation in China were all introduced from early foreign theories, with insufficient discourse power in international library and intelligence exchanges. The discipline still lacks unique original theories, methods, and tools in abstracting, indexing, classification, citation analysis, informetrics, and knowledge mapping, with insufficient theoretical condensation on scientific and technological information resource construction and services, literature laws and scientific evaluation, and scientific and technological confrontation and competition. On the other hand, the focus of China' s library and intelligence community remains concentrated on traditional book and journal procurement and indexing, with insufficient capabilities for high-level information intelligence analysis, computation, and fusion, mainly manifested in the lack of reliable technical products. High-quality scientific and technical reports, indexing systems, union catalogues, electronic databases, scientific indicators and indices, and high-precision information products related to semiconductors, space, geography, and oceans that concern national destiny are often controlled by Western countries. The existing library and intelligence theoretical and methodological system is disconnected from practice, making it difficult to fully meet national needs for self-reliance in science and technology and guarantee integration into global development. Under the new framework, this discipline needs to expand the boundaries and fields of the original first-level discipline, seek broader disciplinary identity, reshape its disciplinary status and discourse system, build core disciplinary capabilities and competitiveness, and commit to better promoting industry innovation and development. It needs to form a disciplinary system confrontation capability oriented toward domestic and international dual circulation, solve the problem of weak construction of core disciplinary knowledge

systems, and enable it to effectively support the formation of platforms and tools for self-reliance in science and technology, demonstrating disciplinary responsibility.

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4. Future Insights: Clarifying the Way Forward Through Disciplinary System Reshaping

4.1 Strengthening Disciplinary System Construction in Response to Real-World Contexts

In the VUCA (volatility, uncertainty, complexity, and ambiguity) era full of instability, uncertainty, complexity, and ambiguity, international scientific and technological competition among major powers is exceptionally fierce. The problem of "information asymmetry" has become the focus of attention for the information resource management discipline. Facing real-world contexts, the Party Central Committee has timely proposed the "Four Orientations"decision-making deployment, which is not only the goal and direction for scientific and technological innovation in the new era but also provides important guidance for the construction of information resource management discipline in the new era. Oriented toward scientific and technological innovation needs, some scholars have proposed adhering to the new positioning of intelligence science serving scientific and technical intelligence work, namely innovation support, decision-making consultation, security early warning, and information guarantee. Aiming at the international competition environment and keeping pace with national development strategies, the discipline should strive to achieve the important role of intelligence in supporting national scientific and technological security and development strategies.

The information resource management discipline must do well in top-level design and promote innovative development through institutions. The core capability and competitiveness of this discipline lie in the appreciation of information resources through management, more effectively supporting institutional management, decision-making, and development. Paying attention to social needs, emphasizing cross-integration, strengthening theoretical innovation, and adhering to humanistic traditions should become the basic principles long followed in disciplinary institutional construction. Therefore, original sub-disciplines should trace their origins, highlight their characteristics, strengthen industry benchmarking, establish disciplinary norms, adapt to the digital transformation trend of the whole society in research directions and talent training, keep pace with national scientific and technological strategies and the national cultural digitization strategy, highlight people' s subjectivity and epochal connotations, and reshape strategic, forward-looking, and guarantee attributes. Professional research directions should be set according to the connotations of information resource management, such as improving the existing disciplinary system oriented toward self-reliance in science and technology and based on the "Four

Orientations," restoring the scientific and technical intelligence science education system, establishing a batch of library and intelligence talent bases serving national scientific and technological innovation, and improving the construction of the information resource management disciplinary, academic, and discourse systems. In the future, under the broad category of information resource management discipline, the integrated development of the "library, information, and data science" discipline cluster can be explored, effectively integrating directions such as library science, (scientific and technical) intelligence science, archival science, and data science within the disciplinary system to give the discipline core competitiveness, and promoting scientific and technical information resource management from "behind the scenes" to "front stage," making the institutional function of the discipline in serving self-reliance in science and technology effectively prominent.

4.2 Building an Independent Knowledge System Through Absorption and Reference

The information resource management discipline has strong Chinese characteristics. It should not become a soft discipline but should develop into a hard discipline with high social recognition by constructing new disciplinary theories, methods, and technical systems, absorbing and referencing Chinese and foreign civilizations, and knowledge and methods from related disciplines. The main knowledge follows the 线索 of "characteristic concepts (concepts) —disciplinary laws (theories) —core academics (systems)." The "linear increase of main knowledge" hypothesis provides a new 思路 for improving the methods and main knowledge system of information resource management discipline, inspiring China to establish an information resource management theory and method system suitable for national conditions and oriented toward self-reliance in science and technology, focusing on consolidating the disciplinary knowledge base and improving disciplinary development effectiveness through innovating thinking, theories, systems, methods, processes, tools, standards, and products.

Facing the future, the development of information resource management discipline should adhere to its original intention of empowering scientific and technological competition strategies through information services, strategic decision-making support, and security early warning, reasonably introducing advanced foreign achievements, emphasizing critical inheritance and creative transformation to build an independent knowledge system, and completing theoretical integration from data to wisdom along the information chain based on comprehensive integration principles and methods. On the one hand, it should focus on responding to major national needs and serving social, economic, scientific and technological, and cultural construction and development. On the basis of disciplinary integration, it should condense a knowledge system with Chinese characteristics that connects with national strategies, focuses on social phenomena, and pays attention to practical progress, to achieve alignment with scientific frontiers, scientific analysis and answering of epochal questions, and

compatibility with national scientific and technological development needs. It should continuously optimize the discipline' s capabilities in information and intelligence collection, analysis, foresight, and system confrontation, providing a good practical field for theoretical and methodological innovation. For example, under the correct guidance of attracting more outstanding research achievements to be published in the "motherland," this discipline should adjust research themes and models around building a national high-end exchange platform for research papers and scientific and technical information, attach importance to serving the resolution of "bottleneck" technology problems, vigorously promote research on achievement publication, scientific and technological evaluation, and scientometrics, and promote interaction between theory and practice, allowing disciplinary knowledge to energize scientific and technological development. On the other hand, it should form a complete guarantee system for information and intelligence products, methods, tools, and security. It should seize the advantages of the fourth scientific and technological revolution to promote theoretical and methodological innovation, use artificial intelligence, big data, and other technological innovations to promote the construction of independently controllable methodological capabilities, support basic theoretical research in information resource management, encourage the formation of a batch of independently controllable and high-level supporting products for information resource management such as scientific and technical intelligence mining and analysis tools, indexing systems, scientific and technical reports, and standards through core technology breakthroughs and leveraging the "latecomer integration advantages" of scientific openness and technological open source.

4.3 Promoting Integration and Emphasizing Interdisciplinary Collaboration

The information resource management discipline fits well with the concept of "internal integration and interdisciplinary crossing" in the new liberal arts construction, and cross-disciplinary integration and multidisciplinary fusion will be an unchanging direction in the development of this discipline. Under the new, larger disciplinary community, the internal logical relationships among subdisciplines such as information analysis, data science, digital culture, digital humanities, public cultural services, editing (digital) publishing, and ancient book protection are more harmonious, also laying the foundation for seeking new disciplinary growth points oriented toward self-reliance in science and technology. It should be clear that, around the goal of self-reliance in science and technology, the information resource management discipline needs to not only emphasize internal integration but also achieve integrated symbiosis with external related disciplines. It can enhance disciplinary connotations, competitiveness, and social service capabilities through further strengthening interdisciplinary crossing, optimize the construction of academic and discourse systems, and achieve interdisciplinary integration, competition, and symbiosis for self-reliance in science and technology and more fields.

To this end, a comprehensive and collaborative disciplinary guarantee system should be constructed with (scientific and technical) intelligence science as the center. On the one hand, guaranteeing self-reliance in science and technology requires division of labor and collaboration within this discipline to promote changes in principles, methods, and paradigms. Scientific and technical intelligence science alone has evolved toward the new paradigm of "data-intensive science."Information analysis provides support for transforming information into knowledge, intelligence, and wisdom, data science effectively supports the theory and methods from "information"back to "data"in the information chain, and digital culture, digital humanities, and public cultural services demonstrate good interactive and integrated relationships between culture and science and technology, all of which can inject energy into disciplinary renewal. On the other hand, it should integrate theories, methods, and technical tools from related disciplines to enable the information resource management discipline to better adapt to changes in uncertain environments. The development of information resource management discipline is closely related to computer science, information science, and other disciplines. For example, intelligence science needs to introduce "fusion thinking + intelligence thinking + computational thinking" from cognitive science, psychology, computer science, and other disciplines to possess core competitiveness in serving self-reliance in science and technology. In the process of interdisciplinary crossing, particular attention should be paid to solving the serious problem of generalization and virtualization of traditional sub-disciplines to ensure their continuous service to the strategy of building a powerful science and technology nation.

4.4 Improving Talent Echelons to Stimulate Disciplinary Development Momentum

One of the goals of information resource management talent training should be the ability to integrate into innovation teams, adapt to international scientific and technological confrontation situations, and become strategic scientific and technological talents and first-class scientific and technological leaders. From the perspective of core competency composition, information resource management personnel need to master "core skills"including national security guarantee, scientific and technical information services, scientific discovery, and intelligent, comprehensive guarantee of intelligence acquisition, organization, analysis, computation, development, and utilization services, possessing humanistic spirit and the ability to apply new technologies and tools to adapt to needs under the development situation of the Internet and artificial intelligence. Based on this, a national team of information resource management talents supporting scientific and technological innovation should be actively built by establishing a batch of talent bases in national laboratories, state key laboratories, important enterprises, and key scientific research institutions, and conducting vocational training to supplement the gap in academic education, vigorously improving the quantity and quality of the talent team.

It is recommended to actively adjust and match the talent training mechanism compatible with the positioning of the new disciplinary catalogue, promote the connection and coordination between graduate and undergraduate professional catalogues, restore the undergraduate, master' s, and doctoral disciplines and directions of scientific and technical intelligence, set up undergraduate majors in (scientific and technical) intelligence science and doctoral professional degrees in scientific and technical intelligence or library and intelligence studies, and cultivate more applied talents. A high-quality scientific and technological soft environment should be created, talent management systems conforming to scientific and technological innovation laws should be established, industry certification systems for human resources should be improved, and policies should be introduced to encourage the flow of information resource management talents to central and western regions to promote coordinated regional scientific and technological development and fully stimulate disciplinary development momentum.

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5. Conclusion

Information resource management is a concept that keeps pace with the times and integrates Chinese and foreign information practices, and disciplinary development also has multiple dimensions. Orienting toward self-reliance in science and technology is an important dimension among them, a goal that runs through the "past and present" of information resource management discipline development and has provided strong support for China' s scientific and technological development. It should be clear that improving the disciplinary system, reshaping traditional majors, and strengthening new major construction are important issues after the renaming of the first-level discipline. Facing the future, we need to aim at the goal of high-level self-reliance in science and technology, consider reshaping the disciplinary system in the context of the "two overall situations" and the "Two Centenary Goals," and continuously deconstruct the connotation sources, development stages, and future trends of disciplinary development.

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