

Empowering Existing Resources, Optimizing Incremental Resources, and Managing Variables: Reflections on Document and Information Resource Construction in Chinese University Libraries for the 14th Five-Year Plan (Postprint)

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Abstract

[Objective/Significance] The development of literature and information resources in university libraries for the 14th Five-Year Plan period constitutes both a crucial component of holistic planning and the foundational basis for library services and support. Elucidating the planning process, research priorities, developmental strategies, and implementation measures holds significant guiding value and practical implications for the medium- to long-term strategic development of literature and information resources in university libraries.

[Method/Process] Integrating literature review with industry observation and analysis, and employing methodologies including case study, policy document interpretation, and comparative research, this study synthesizes strategies and developmental approaches for university libraries in formulating their 14th Five-Year Plan for literature and information resources development.

[Result/Conclusion] The overarching strategy for literature and information resources development focuses on empowering existing collections, optimizing incremental acquisitions, and managing variable factors. Concrete implementation strategies are proposed in alignment with the objectives and missions of university libraries in the new development stage.

Full Text

Empowering the Stock, Optimizing the Increment, and Grasping the Variables: Reflections on Collection Development in Chinese University Libraries for the 14th Five-Year Plan

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Abstract

[Purpose/Significance] The development of library collections for the 14th Five-Year Plan period constitutes both a crucial component of overall institutional planning and the foundational basis for library services. Clarifying the planning process, research priorities, development strategies, and implementation measures holds important guiding significance and practical relevance for the medium- and long-term collection development strategies of university libraries.

[Method/Process] This study combines literature review with industry observation and analysis, employing case studies, policy text interpretation, comparative research, and other methods to summarize the strategies and development approaches for university libraries in formulating their 14th Five-Year Plan for collection development.

[Result/Conclusion] The overarching framework for collection development centers on empowering existing stock, optimizing new increments, and grasping key variables. Specific implementation strategies are proposed in response to the objectives and tasks of university libraries in this new development stage.

Keywords: university library; collection development; 14th Five-Year Plan

Introduction

University libraries are unique among institutional units in their simultaneous stewardship of diverse resource collections: professionally organized documentary and information resources, standardized and reliable academic data resources, distinctive learning space resources, and service-oriented librarian resources characterized by strong innovation consciousness and professional competence. The Fifth Plenary Session of the 19th Central Committee of the Communist Party of China has outlined an ambitious blueprint for the 14th Five-Year Plan for National Economic and Social Development and the long-range objectives for 2035. In response, university libraries should continue to rely on and deeply develop these resources while expanding their vision to encompass full-network information resources, data-driven business operations, full-cycle

teaching and research support, and industry-wide development trends. By comprehensively considering domestic and international development trends and China's own development conditions, libraries must formulate medium- and long-term layout plans that align with or even surpass world-class standards conceptually while demonstrating Chinese characteristics operationally, thereby sustaining and strengthening their indispensable role as information and knowledge engines in university development.

Among all resource types, documentary and information resources serve as the natural foundation for university library service systems. The *Regulations for Libraries in Regular Institutions of Higher Education* (hereinafter referred to as the *Regulations*), revised and promulgated by the Ministry of Education in 2002 and 2015, both dedicate separate chapters to collection development. The 2002 version included this as Chapter 3 under the title “Documentary Resource Development,” while the 2015 version placed it as Chapter 5 under the expanded title “Documentary and Information Resource Development,” reflecting greater conceptual inclusiveness and alignment with the actual conditions of university libraries. Compared to the 2002 version, the 2015 *Regulations* place greater emphasis on three aspects: first, that documentary and information resources should serve not only talent cultivation and scientific research but also discipline construction; second, the rational organization and long-term utilization of print resources; and third, participation in campus informatization construction and the digitization of institutional academic resources, establishing long-term preservation mechanisms for digital information resources to ensure information security [1]. The Ministry of Education's *Basic Conditions Indicators for Regular Institutions of Higher Education (Trial)* (Jiao Fa [2004] No. 2) specifies per-student book holdings and annual acquisition quotas based on equivalent student enrollment numbers. These policy documents reflect that collection development has become a fundamental indicator for institutional operating conditions. The vast majority of university libraries in China have already accumulated substantial collections and require annual budget allocations to ensure appropriate growth.

The report from the 19th National Congress of the Communist Party of China states that we must “optimize the allocation of existing resources, expand the supply of quality increments, and achieve dynamic balance between supply and demand.” The communique of the Fifth Plenary Session of the 19th Central Committee further emphasizes that the world today is experiencing profound changes unseen in a century, that China's development remains in an important period of strategic opportunity, but that both opportunities and challenges present new developments and changes, requiring further improvement in “resource utilization efficiency.” Librarian Rao Quan has analyzed the many problems and challenges facing China's library sector against the backdrop of global transformation in library undertakings, noting that libraries' proactive planning and initiative remain insufficient amid expanding cross-boundary integration trends, and that the resource acquisition and preservation system urgently requires new connotations in the digital civilization era [2]. Librarian Zhou

Deming points out that under normalized epidemic prevention and control conditions and budget reductions, libraries should adopt a “14th Five-Year Plan” formulation mindset that transforms “crisis” into “opportunity” and seeks “opportunity” within “crisis,” concentrating efforts on forging core competitiveness [3]. Librarian Chen Jianlong has raised questions about the value system of university libraries in the new era and the modern research paradigms and directions for transformation and development [4].

In view of these considerations, the author argues that formulating a development plan for university library collection development for the 14th Five-Year Plan must focus on three key concepts: empowering existing stock, optimizing new increments, and grasping key variables. This involves excavating and revitalizing existing resources, employing demand analysis and performance management to accurately select and optimize incremental resources, while simultaneously assessing situations and grasping changes to enable university library collection development to function effectively under uncertain conditions.

2. Investigation for the 14th Five-Year Plan

The process of compiling medium- and long-term plans involves comprehensive investigation, clarification of developmental repositioning, thorough review, and renewed departure. Therefore, research work constitutes the foundation for formulating the 14th Five-Year Plan. A complete investigation should encompass at least four dimensions:

2.1 Upstream Investigation

As a crucial link in the knowledge dissemination chain, libraries face upstream suppliers primarily comprising various documentary and information resource publishers. Understanding publishing status and trends enables libraries to timely anticipate upstream supply conditions and characteristics and formulate corresponding strategies. For university libraries, grasping the quantity, quality, distribution, and transformation dynamics of domestic and international academic and educational publishing, as well as the features and strengths of major publishing suppliers, constitutes the prerequisite for effective collection development planning. For instance, to understand international trends in scientific publishing, one may refer to the five key trends observed and summarized by Simba Information for the technology publishing industry: professional mobile content can be accessed at the fastest speed; open-access journal sales exceed expectations; the feasibility of open-access books remains uncertain; social science and humanities books are growing after a decade of decline; and digital delivery has injected new vitality into professional books and academic monographs [5]. From the perspective of science-technology-medicine publishing industry research on end-user behavior and needs, one can also track the Technology Trends 2024 report, which has been published annually for six consecutive years since 2014. This year’s report explicitly states the core idea of

“focusing on users and connecting all segments,” viewing users as “digital natives” who require reliable and trustworthy information, hope to participate in managing their own data according to their habits, and have very explicit needs for artificial intelligence services that serve humanity and can demonstrate research integrity [6]. These demand characteristics are valuable not only for the publishing industry’s development but also for library knowledge and information services.

The main body of university library collections consists of academic research outcomes and data. A significant upstream trend that cannot be ignored is open access (OA) to academic research data and results. While OA aims to make publicly funded academic journal articles freely accessible to the public, the high article processing charges (APCs) associated with OA also warrant attention. On one hand, university libraries pay substantial annual fees for database subscriptions; on the other hand, researchers use project funds to pay for publishing in OA journals, creating a dual-payment problem of subscription and publication fees. Many universities actually spend far more on databases than their subscription budgets indicate, simply because these expenditures follow separate budget lines, often leaving institutions unaware of the full picture. A survey of a comprehensive research university revealed that in 2019, over 2,000 gold OA papers were published with corresponding authors, with conservative APC estimates reaching 30 million yuan—equivalent to the library’s entire electronic resource subscription budget for that year (with e-journal subscription fees under 18 million yuan). The impact of OA on library collection development is long-term and profound. The current focus of negotiation centers on whether foreign publishers are willing to convert existing subscription fees to OA fees at China’s current level. A feasible approach involves accelerating the construction and application of institutional repositories for academic outcomes, coordinating publication and subscription expenses at the institutional level to maximize overall cost-effectiveness.

2.2 Superior-Level Investigation

The 14th Five-Year Plan development of university library collections must also closely align with superior-level institutions, namely university strategies and relevant Ministry of Education policy requirements. Libraries must identify clear positioning, tasks, and construction objectives within their university’s 14th Five-Year Plan. For example, Shanghai Jiao Tong University proposed during its 14th Five-Year Plan formulation that the library should base its specialized planning on “information and knowledge services.” Accordingly, the library’s construction objectives aim to establish a high-quality, high-performance documentation resource guarantee system built upon “excellent collection resources, efficient information access systems, and precise knowledge supply capabilities.” Collection development must align with university strategies and library requirements, constructing a system characterized by rational documentary structure, coordinated print-digital development, effective organization and

revelation, internal-external collaborative sharing, and distinctive features.

The Ministry of Education's development guidelines and strategic deployments provide crucial guidance for university libraries. Regarding the Ministry's promotion of new engineering, new medical science, new agricultural science, and new humanities/liberal arts construction, the establishment of interdisciplinary new majors combining arts and sciences, science and engineering, and medicine and engineering, as well as the development of first-class majors, libraries should proactively consider the documentary and information resources and service support they can provide in this process. For instance, the Ministry of Education's Department of Higher Education 2020 Work Priorities explicitly stated that "universities should develop 'three systems' (college system, credit system, and tutorial system) for top-tier talent cultivation, construct new library service systems, and integrate libraries into the entire undergraduate education process" [7]. Many schools have subsequently prepared to establish "colleges," with Shanghai Jiao Tong University's Zhiyuan College requesting corresponding support and guidance from the library. Libraries can leverage their professional expertise to provide professional advice on resource allocation, processing, layout, services, and collection asset management, representing an important service component in supporting talent cultivation.

2.3 Industry and Benchmark Investigation

Current conditions and development trends in domestic and international university libraries also provide important reference points for 14th Five-Year Plan formulation. For example, the Association of College & Research Libraries (ACRL) Research Planning and Review Committee publishes a biennial report on top trends in academic libraries, typically released in early June of even-numbered years, primarily using literature analysis to examine trends in academic libraries, reflecting both current practice and hot topics while highlighting future directions. In June 2020, ACRL released nine key trends for 2020 [8], among which "evolving integrated library systems," "open access: subscriptions and transformations," and "streaming media" are closely related to library collection development. Notably, the report includes this addendum: "With the publication of this issue of *C&RL News*, institutions have closed facilities and transitioned courses online; vendors have temporarily opened resources; conferences have been postponed or canceled entirely... These circumstances are expected to have long-term impacts, likely including large-scale budget cuts. Despite these uncertainties, libraries will utilize virtual meetings and other tools to provide online research and teaching support." Unlike most domestic university libraries that have experienced relatively continuous budget increases in recent years, budget reductions and situational uncertainties are becoming variables that university libraries must confront in their new round of development, warranting special attention when formulating medium- and long-term plans.

Many university libraries also establish benchmarks to achieve "targeting and surpassing" goals in medium- and long-term development. Benchmark institu-

tions can be determined based on the university's peer institutions or by selecting advanced libraries within the profession. Analyzing the strategic plans of QS top 100 university libraries reveals that many foreign university libraries have incorporated extended documentary and information resources and dynamic data processing, revelation, integration, and access into their medium- and long-term strategic plans. The new information ecology and data structures undoubtedly pose challenges to libraries while also implying opportunities—directions that libraries should emphasize in their 14th Five-Year collection development plans. For example:

- (1) **MIT Libraries:** To support digital scholarship, MIT's institutional repository for academic content has become more open, accessible, and persistent [9].
- (2) **Columbia University Libraries:** The library protects digital assets against format obsolescence and digital anomalies, constructing, shaping, maintaining, and creating discoverable collections beyond traditional formats and boundaries, establishing dynamic information systems, and developing more advanced metadata [10].
- (3) **University of Illinois at Urbana-Champaign Library:** The library strengthens the research library ecosystem, expands access to unique collections and resources, integrates and manages knowledge, and ensures specialized expertise networks that guarantee the value, quality, and authenticity of information resources [11].
- (4) **Monash University Library:** The library develops and implements strategic collection development plans, follows up on library search functionality to improve collection discoverability and implement recommended changes, and provides systems and technologies that enable new ways of using collections (such as text and data mining) [12].

2.4 Self-Analysis and User Needs Investigation

Beyond upstream, superior-level, industry, and benchmark investigations, university libraries' self-analysis of their collection development status and user-centered investigations of information needs and satisfaction represent two additional crucial dimensions for scientifically formulating medium- and long-term development plans. These help summarize achievements, understand collection development characteristics, strengths, weaknesses, and problems, while also identifying unmet user needs and unguaranteed resources to more precisely target the next phase of collection development priorities.

Taking Shanghai Jiao Tong University Library (hereinafter referred to as SJTU Library) as an example, after years of continuous development, electronic resources have come to dominate the documentary and information resource service system. According to incomplete statistics, in 2000 the library had over 50 Chinese and foreign language CD-ROM databases with only 450 GB of elec-

tronic documents, with electronic resources accounting for approximately 35% of services. By 2020, digital resources had reached 180 TB, with over 430 subscribed databases, and electronic resource expenditures and services had surpassed print resources [13]. Discipline-specific resource development has also achieved considerable progress, with a 93% satisfaction rate for ESI top 1‰ discipline requirements and an 88% guarantee rate for JCR journals. Support for research output has been substantial; analysis of institutional publications in Web of Science during the 13th Five-Year Plan period shows a positive correlation between publication volume and journal guarantee rates. 2019 statistics indicate that comparing print book circulation and e-book download volumes with corresponding acquisition expenditures, e-books used 63% of print book funding while providing nearly 22 times the usage, demonstrating highly significant cost-effectiveness. Meanwhile, revelation work focused on foreign-language e-books, e-journals, and dissertations has been consistently advanced, basically meeting regular digital information resource discovery needs for faculty and students.

Collecting and understanding faculty and student satisfaction with resource guarantee and utilization through various channels also provides important evidence for 14th Five-Year Plan formulation. Beyond real-time needs assessment through departmental liaison and professor visits, SJTU Library planned and implemented a satisfaction survey on resource guarantee and utilization for all faculty and students one year before the 13th Five-Year Plan concluded. After surveying faculty and students from 17 “first-class” disciplines, the library learned that satisfaction with documentary resource guarantee and utilization exceeded 95% while collecting valuable reference suggestions. During the planning process, the library also visited and investigated relevant campus units, convened annual library work committee meetings, and solicited suggestions from departmental functional committee members around the 14th Five-Year Plan development, comprehensively understanding faculty and student needs for documentary and information resources to provide a basis for scientifically formulating medium- and long-term development plans.

From university library practice and faculty/student feedback, several common problems persist: documentary resource operation and maintenance funding generally only supports basic inputs with insufficient momentum; efficient and trustworthy intelligent selection platforms are lacking; integrated collection management systems struggle to meet the current reality of electronic-resource-dominated documentary and information resource management; collection electronic resource data suffers from complex sources and difficult maintenance, resulting in suboptimal granularity and user experience in resource organization and revelation; long-term preservation lacks relevant support; and uncertainty remains regarding OA publishing trends and response strategies. Therefore, strengthening the organization and revelation of different types of documentary and information resources and enhancing their promotion and publicity represent foundational work that university libraries must consistently prioritize in medium- and long-term development.

3. Development Ideas and Key Tasks

The Fifth Plenary Session of the 19th Central Committee explicitly stated that China's economy and society will enter a high-quality development stage during the 14th Five-Year Plan period, establishing an important tone for the future development of university libraries [14]. The China Internet Network Information Center (CNNIC) released its 45th *Statistical Report on China's Internet Development*, showing China's internet user population reached 904 million with a 64.5% penetration rate, while online education experienced explosive growth. As of March 2020, China's online education user base reached 423 million, an increase of 110.2% from the end of 2018, accounting for 46.8% of all internet users. China's blockchain invention patents have ranked first globally for two consecutive years, with blockchain technology already playing a role in the digital transformation and upgrading of many traditional industries, and the full-scale commercialization of 5G will powerfully drive innovation and upgrading in technology industries. By December 2019, China had built over 130,000 5G base stations, with the 5G industry chain promoting the development of AI-IoT integration toward the Intelligence of Things [15]. By 2025, over 40% of global data will have real-time processing capabilities [16]. While predictions about future development may not all materialize, the data-driven environment, online education, and digital research have become representative characteristics of future higher education development, exerting undeniable influence on university library collection development.

As previously argued, university library collection development for the 14th Five-Year Plan should follow the overarching framework of “empowering existing stock, optimizing new increments, and grasping key variables.” Based on preliminary investigations, analyzing and extracting typical elements yields the development framework shown in Figure 1 [Figure 1: see original paper]. It should be noted that these elements are not exhaustive—for instance, “users” significantly influence collection development but are not included here as the article focuses more on professional business logic. Moreover, the classification of stock, increment, and variables is not fixed and may vary depending on perspective, but the ultimate goal is to build a new-generation intelligent knowledge service system that makes documentary and information resources the knowledge engine for high-quality library development.

3.1 Empowering the Stock: Redefining Collections and Fully Exploiting the Potential of Existing and Accessible Resources

University libraries have typically accumulated substantial, reliably quality-assured stock collections. “Empowering” strategies for these existing knowledge assets include:

- (1) **Inventorying and Mining Collections:** Based on different disciplinary themes and service requirements, excavate and reorganize print collections to 赋予 them new functions. For example, institutional repository con-

struction can systematically compile and showcase representative works by institutional scholars, disseminating academic spirit while expanding cultural heritage functions.

- (2) **Expanding Resource Applications:** While library services are built upon collections, as MIT Libraries envisions for future libraries, we must redefine the concept of “collection” [17]. Current collections have long surpassed the narrow “print + electronic” (print resources and electronic resources) category. High-quality, multi-source, multi-type, multi-format resources that are accessible, harvestable, and shareable can all be incorporated into library collection management and service systems. Organizing, integrating, and correlating various high-quality information resources to expand the scope of “usable” resources remains important work in collection development.
- (3) **Optimizing Discovery and Navigation:** Whether through resource discovery systems or specialized resource guides, libraries have always shouldered the responsibility of filtering, navigating, and transmitting reliable information in a sea of information. Building upon existing resources and tools, libraries should develop high-quality academic information tools that better meet institutional discipline construction and talent cultivation needs, continuously optimizing discovery and navigation. Based on its electronic resource statistical analysis system, Shanghai Jiao Tong University Library launched the “Academic Resource Map” for faculty and student use [18], reorganizing and clustering various electronic resources according to Ministry of Education second-level disciplines to quickly locate core resources for each sub-discipline, aggregating institutional publications, downloads, citations, and other data in the Academic Resource Map to promote intra-institutional academic exchange and interdisciplinary research collaboration.
- (4) **Thesaurus Data Governance:** Thesaurus construction, represented by subject headings, constitutes an important knowledge organization tool in library and information science. One study examining 149 Chinese thesauri compiled during different periods found that 70% have essentially fallen into disuse [19]. While some libraries maintain name and institution authority dictionaries, these are often limited to individual applications without fully exploiting thesauri advantages in expressing knowledge structures. Combining thesauri with appropriate technologies as underlying semantic tools to enhance metadata quality can positively impact intelligent resource organization and precise service delivery.
- (5) **Perfecting Internal Control Norms:** In April 2016, the General Office of the Ministry of Education issued the *Guidelines for Internal Control of Economic Activities in Universities Directly under the Ministry of Education (Trial)*, providing references for improving internal control and management levels in various higher education institutions—a continuation of the Ministry of Finance’s series of documents on promoting internal con-

trol construction in administrative institutions. During the 13th Five-Year Plan period, university libraries successively established internal control management norms for library materials. On this foundation, they must continuously improve operational details and management policies to ensure proper management and utilization of all types of library materials dispersed across campus.

- (6) **Upgrading Professional Capabilities:** While re-examining collection connotations, libraries must also achieve full cognition and research of technologies and methods for efficiently and precisely managing dynamic collections (especially dynamic electronic collections). Existing knowledge systems for information organization and management cannot yet flexibly handle the revelation, organization, management, interoperability, preservation, utilization, migration, and exchange of different types, formats, scales, states, and even lifecycle stages of collections. Most university libraries still use bibliographic integrated management systems based on print collection management. Although still functional, these systems suffer from weak architectural flexibility and scalability, lack integrated print-electronic resource management, exhibit operational and configuration inefficiencies in acquisition and cataloging workflows, and cannot support intelligent, efficient applications and services. Whether transitioning to the FOLIO platform, adopting Alma, or using other similar products, systems should enable unified management of diverse resources with optimized integration of business processes and system functions. In knowledge description and organization, they should enable top-down data modeling, develop bottom-up standardized data encoding, and facilitate smooth data exchange between applications. Libraries should intensify tracking, preliminary research, and experimentation in “bottleneck” areas such as research process data, linked data, semantic ontologies, data modeling, and recommendation algorithms, exploring applications through practice.

3.2 Optimizing the Increment: Scientific Budget Formulation, Dynamic Monitoring and Evaluation, and Precise Selection of New Collection Additions

With the global economic downturn and COVID-19 impacts, funding issues have become increasingly prominent. The American Library Association held a web forum on July 22, 2020, themed “Navigating the Current Budget Crisis While Creating a More Sustainable, Values-Aligned Future for Research” [20]. According to Ministry of Finance data, national general public budget revenue from January to May totaled 7.7672 trillion yuan, a year-on-year decrease of 13.6%. A *People’s Daily* report on July 1 emphasized that “tightening our belts” should not be a short-term response but rather a normalized condition, stating that “every penny must be spent where it is most needed” [21]. University library collection development funding represents a relatively large proportion of institutional budgets. According to the Ministry of Education’s *Basic Condi-*

tions Indicators for Regular Institutions of Higher Education (Trial) (Jiao Fa [2004] No. 2), comprehensive, normal, and ethnic universities with over 30,000 equivalent students must acquire 90,000 volumes annually. Under current policy requirements, university libraries must ensure both cost-effectiveness and continuous access to the latest documentary and information resources. Strategies for optimizing increments include:

- (1) **Budget Formulation and Justification:** The State Council's report on budget execution since the beginning of the year clearly demands strict asset allocation planning and standards, strengthened planning and approval management, and genuine prioritization. It prohibits expenditures without budgets or beyond budget limits, stating that except for epidemic prevention and emergency response, budgets generally should not be supplemented during execution, and that expenditures not requiring year-end allocation should be saved according to the principle of saving wherever possible [22]. Although collection development budget formulation is relatively mature, when funding inputs change significantly or numerous uncertainties exist, multi-angle justification for budget formulation becomes necessary.
- (2) **Database Classification and Ranking:** Database resources constitute a substantial proportion of many university libraries' collections. Classifying and ranking databases based on content characteristics, usage statistics, input-output ratios, and substitutability enables scientifically adjusting database subscription strategies according to funding availability and actual needs. Unsub [23], currently under development in the international library community, is a tool that monitors database usage to help libraries quickly and accurately identify the most important and core database resources for institutional users, assisting scientific decision-making under budget reduction scenarios.
- (3) **Risk List Compilation:** Collection development itself involves economic activities, and extensive contract management involves legal affairs, presenting explicit or implicit risks. The requirements for internal governance legalization, institutionalization, and standardization have become more prominent. The Ministry of Education's *Opinions on Further Strengthening Rule of Law Work in Higher Education Institutions* (Jiao Zheng Fa [2020] No. 8), issued on July 28, 2020, explicitly states in Article 6: "Improve the school's legal risk prevention and control system. Perfect contract management systems, strengthen review of contracts signed by the school and its subordinate institutions." It further requires "compiling a list of currently effective documents, sorting out legal risk lists, and clarifying disposal methods" [24]. Proper review and management of various documentary resource procurement contracts and plans, striving for reasonable and user-favorable terms, promotes and safeguards collection development through rule-of-law thinking and methods.
- (4) **Dynamic Monitoring and Evaluation:** Although some university li-

libraries have gradually adopted electronic resource management systems, most libraries' print and electronic resource management remain separate, preventing truly integrated management of documentary and information resources. Given the current information environment, resources change more dynamically—for example, journals transitioning from non-OA to OA, or journals moving between databases. Dynamic monitoring and evaluation of these changes and their impacts on funding and usage represent very practical issues for university libraries.

- (5) **Integrating OA Resources:** The internet offers increasing amounts of freely accessible learning, research, and educational resources. Targeted collection, screening, organization, integration, and revelation of these resources according to institutional disciplinary characteristics and existing resource conditions can serve as beneficial supplements to library collections and a good approach to accumulating stock resources. Current discovery systems can already link to substantial third-party resource metadata, and many libraries reveal corresponding OA resources on their portals for faculty and student access. OA resources should also be gradually incorporated into library collection performance evaluation and budget formulation.
- (6) **Alliance Cooperation and Cost-Sharing:** In eras of scarce collection resources, cooperative collection development and sharing represent the original mission of various library alliances. The most representative alliance in China's university library community is the China Academic Library & Information System (CALIS), which from interlibrary loan and document delivery to cooperative cataloging, has served as a beneficial mechanism for improving resource service quality and efficiency. Drawing on mature cooperation models and targeting intelligent, knowledge-based services, university libraries can establish corresponding alliance organizations around discipline-specific information resources, full-media information resources, special topic collections, data center construction, and remote storage facilities, with partners not necessarily limited to libraries to achieve mutual complementarity and win-win cooperation.

3.3 Grasping the Variables: Distinguishing Priorities, Grasping Change Trends, and Implementing Long-term Mechanisms

As economist Xiang Songzuo summarizes, “The only certainty globally is uncertainty,” with some even describing an “uncertainty jungle” [25]. OCLC released a research report on open research data in July 2020. Based on in-depth participation from a panel of 511 respondents from 69 countries between late 2018 and early 2019, the report found that 97% of institutional repositories, digital libraries, and digitized resources are relatively mature. Moreover, data services represent a promising open area, with participation rates in all open content increasing by 10-18%, and future new services likely emerging in open research data management and integration with digitally open collections through sta-

tistical and machine learning technologies. The report specifically notes that “COVID-19 will be a potential game-changer” [26].

University libraries may face severe funding constraints, unavoidable OA trends, and increasingly prominent demands for permanent data archiving and access during the 14th Five-Year Plan development process—all of which will significantly impact collection development. When formulating the 14th Five-Year Plan, libraries must use institutional development strategies and industry benchmarks as guidance, combining environmental, benchmarking, needs, problem, policy, and trend analyses to focus on analyzing upstream and downstream factors, policies, and trends affecting documentary and information resources, taking preventive measures, de-emphasizing absolute quantity indicators, and focusing on source governance, refined governance, and connotative quality. Specific implementation should focus on three key aspects: emphasizing high performance to control the entry point of resource selection, establishing sound systems and norms, conducting performance evaluation, and classified construction; focusing on high quality to control the supply point of resource revelation, strengthening organization and integration of diverse digital resources, and building information and knowledge navigation; and maintaining high standards to control the professional point of resource development, implementing metadata quality improvement strategies to provide effective guarantees for high-quality, specialized services.

For collection development, some variables can directly affect outcomes in relatively short timeframes, such as funding input, performance evaluation, and superior-level policies—these may be termed “fast variables.” Others have indirect, potential, and long-term impacts, termed “slow variables,” such as overall planning, digital-network-intelligence integration, and long-term preservation. Due to space limitations, this article focuses on “performance evaluation” among fast variables and “long-term preservation” among slow variables.

- (1) **Performance Evaluation:** Performance evaluation of documentary and information resources is not a new issue; it has been the primary object of library evaluation since the field began paying attention to assessment. For university libraries, evaluation standards set by supervisory authorities often directly determine collection development investment, making this a fast variable. For example, the Ministry of Education’s *Basic Conditions Indicators for Regular Institutions of Higher Education (Trial)* (Jiao Fa [2004] No. 2), which still serves as an important reference for print collection development, remains a crucial measurement indicator. This indicator also requires timely adjustment in the new development stage, particularly exploring multi-dimensional evaluation and analysis. The Ministry of Education’s *2019 Departmental Final Accounts*, released on July 17, 2020, noted that evaluating annual performance alone is unscientific, recommending three-to-five-year overall evaluations from input-output perspectives to establish long-cycle, broad-vision performance evaluation mechanisms and improve performance management in higher edu-

cation [27]. For collection development work with diverse sources requiring continuous accumulation, long-cycle and broad-vision performance evaluation is particularly important.

- (2) **Long-term Preservation:** University library documentary and information resource data includes both purchased or self-built digital academic resources (databases, institutional repositories, etc.) and various types of metadata organization and management. Current researchers primarily obtain information from major databases with increasing dependency. Foreign databases have formed de facto academic monopolies based on their resource advantages, yet many databases purchased by libraries only provide annual access rights, with very low proportions of permanent access rights or locally archived electronic resources, creating enormous risks for long-term database accessibility. Should problems arise, normal teaching and research usage would be severely impacted. Moreover, most archived data lack actual service capabilities, requiring construction of relevant organization and revelation platforms. Representative international projects addressing this issue include Stanford University Libraries' LOCKSS (Lots of Copies Keep Stuff Safe) project and Portico, led by the non-profit organization ITHAKA. Domestically, the NDPP long-term preservation project established under the National Science and Technology Library (NSTL) and Peking University Library's academic resource long-term preservation project based on Fedora repositories represent pioneering efforts. University libraries should formulate effective long-term preservation strategies for archived academic information data, design underlying data models compatible with multiple document types, negotiate data archiving sovereignty when purchasing relevant academic resources, and address format inconsistency issues between retrospective and updated data at the source, developing platforms that can provide emergency services for archived digital information resources to effectively safeguard sustainable access and utilization of documentary and information resources.

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

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