Ten Relationships in the Innovative Development of University Libraries

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Abstract

This study systematically reviews and provides an in-depth analysis of ten relationships in the innovative development of university libraries, aiming to furnish a theoretical foundation and practical reference for strategic planning and innovative development during the 15th Five-Year Plan period. By comprehensively grasping national education development strategies, applications of modern information technology, and the latest theoretical and practical achievements in library construction in contemporary China, this research focuses on systematically discussing and analyzing ten relationships in university library development: the immediate versus the strategic, resources versus services, in-library versus embedded services, librarians versus users, the library versus the university, technology versus humanities, profession versus career, research versus operations, single-library versus cooperative endeavors, and the director versus the team, thereby clarifying the direction and pathways for innovative development of university libraries. During the 15th Five-Year Plan period and beyond, university libraries should adhere to the principle of upholding fundamental principles while innovating, taking service innovation as the fundamental basis, and coordinate resource construction, user services, technology application, staff development, academic research, and other aspects to achieve high-quality innovative development.

Full Text

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Abstract

This study systematically identifies and deeply analyzes ten fundamental relationships in the innovative development of university libraries, aiming to provide theoretical foundations and practical references for strategic planning and innovative development during the "15th Five-Year Plan"period. By comprehensively examining national education development strategies, applications of modern information technology, and the latest theoretical and practical achievements in Chinese library construction in the new era, this paper focuses on ten critical relationships: present circumstances versus strategic vision, resources versus services, physical access versus embedded services, librarians versus users, library versus university, technology versus humanities, occupation versus career, research versus operations, individual library versus collaboration, and director versus team. Through systematic discussion and analysis of these relationships, the paper clarifies the direction and pathways for innovative development in university libraries.

University libraries should uphold the principle of "upholding fundamentals while pursuing innovation" during the "15th Five-Year Plan" and beyond, with service innovation as the foundation. They must coordinate various aspects including resource construction, user services, technology application, librarian development, and academic research to achieve high-quality innovative development.

Keywords: University library; 15th Five-Year Plan; innovation-driven development; library development strategy
Classification: G250

2025 marks the concluding year of the "14th Five-Year Plan" and the launch of the "15th Five-Year Plan"formulation process [1], representing a critical juncture for achieving the Second Centenary Goal. The Party and state have explicitly emphasized the need to maintain a virtuous cycle among education development, technological innovation, and talent cultivation, while effectively coordinating the strategies of invigorating China through science and education, strengthening the nation with talent, and driving development through innovation [2]. Libraries are the heart of universities [3], and university libraries serve not only as crucial support platforms for academic research but also as important venues for cultivating faculty and student capabilities, and as research institutions promoting knowledge innovation through smart services. They play a vital role in implementing China' s education, technology, and talent strategies.

The rapid development of modern information technology has brought unprecedented challenges and opportunities to the innovative transformation of university libraries. The widespread application of internet, artificial intelligence, and virtual reality technologies has profoundly changed users' information needs and behavior patterns. University libraries should embrace the philosophy that

"Change is Constant" and re-examine the "change" and "unchange" in their existence value, service capabilities, and business management (see Table 1). By continuously improving service capabilities and accurately analyzing, deeply mining, scientifically predicting, and effectively meeting users' resource and service needs, libraries can achieve innovative development and thereby truly serve national strategic goals, earning widespread recognition and sustained support from university faculty, students, administrators, and the public.

Table 1 The "Change"and "Unchange"of University Libraries in the Information Age

This paper is grounded in the development context of the "15th Five-Year Plan" period, extensively investigating and systematically reviewing the latest theoretical and practical experiences in library construction in China' s new era. It identifies 20 keywords for innovative development in university libraries (see Figure 1 [Figure 1: see original paper]), constituting the fundamental elements of innovative development, and analyzes the contradictory relationships within and between these elements [4]. This paper summarizes these as ten core relationships: present circumstances versus strategic vision, resources versus services, physical access versus embedded services, librarians versus users, library versus university, technology versus humanities, occupation versus career, research versus operations, individual library versus collaboration, and director versus team, revealing pathways for innovative development in university libraries and providing references for strategic planning and innovative development during the "15th Five-Year Plan" period.

Figure 1 20 Keywords for Innovative Development of University Libraries for the "15th Five-Year Plan"

Since the 1960s, foreign library communities have emphasized strategic planning and gradually formed mature theories [5]. Chinese scholars initially explored library strategic planning theories based on national five-year development plans [6]. In recent years, under the guidance of the Ministry of Culture [7], public libraries [8-10], university libraries [11-13], and specialized libraries [14] have formulated "13th Five-Year Plan" and "14th Five-Year Plan" development plans, accumulating valuable practical experience. Strategic planning formulation has gradually become an important component of various types of libraries' work, covering functional positioning, development goals, future visions, and the necessary conditions, tasks, steps, and measures for achieving strategic plans, constituting the action program for library innovative development.

2. Resources and Services

The relationship between resources and services is one of unity of opposites, presenting different characteristics at different stages of library development. During the traditional library stage dominated by print resources, resources and services exhibited high unity: user needs primarily manifested as demands for library collection resources, and the services libraries provided were essentially

resource-centered. The quality of collection development largely determined service levels. At this stage, resources equaled services, and building quality collections was the fundamental way to meet user needs.

However, with the development of internet and other information technologies, users' information access methods have undergone fundamental changes, primarily relying on online platforms, search engines, and preprints. In this context, university libraries must respond to the reality that graduate students, faculty, and researchers are "non-physical visitors" or "rarely visiting" users who satisfy their research information needs through networks. In this new development stage, the oppositional attributes of resources and services have gradually become prominent and transformed into the main aspect: digital resources, network resources, open access (OA) resources, and preprint resources have gradually become the main body of library resources, greatly expanding the efficiency and scope of user access to resources. User needs have surpassed the level of document services, shifting toward deeper knowledge service demands for librarians' knowledge reserves and professional skills.

However, university libraries currently exhibit significant lag in building knowledge service capabilities, and traditional document service capabilities based on resource construction can no longer fully meet users' higher-level needs, intensifying the oppositional attributes between resources and services.

University libraries need to construct a dynamic resource allocation and service strategy system based on the multi-level demand characteristics of faculty and student user groups. They must both consolidate traditional advantages in library resource development for undergraduate-dominated basic user groups, continuing to provide rich, high-quality literature information resources, and fully recognize the objective law that "resources are limited, but services are infinite": no library can exhaust all information resources, but through user needs analysis, potential demand mining, and trend prediction, they can explore and construct new service modules including knowledge organization, knowledge discovery, knowledge consultation, intelligence analysis, and data management [18], enhancing the ability to transform resources into services. This will ultimately enable precise response to users' diversified and deep-level information needs, thereby promoting an upgrade of service models from "demand response" to "demand leadership."

3. Physical Access and Embedded Services

The relationship between physical access and embedded services represents the differentiated presentation of different user groups' needs in library service dimensions. Physical access services involve users obtaining and using information resources within the library' s physical space, with undergraduate students showing the highest dependence on this service model. To this end, university libraries have explored space reengineering to adapt to users' aesthetic and functional needs. For example, Shenyang Normal University Library designed

22 spaces across five categories—learning and discussion, information literacy education, reading, maker, and cultural display—based on functional positioning and user needs [19], significantly improving service satisfaction for physical visitors.

Embedded services primarily target researchers and administrators, breaking through the library' s physical boundaries to deeply integrate into users' management and research processes. They leverage librarians' information advantages, service advantages, and team advantages to establish cooperative partnerships with users' research, teaching, and management activities [18], providing embedded reference consultation, thematic information, information literacy education, teaching support, knowledge discovery and intelligence analysis services, as well as intellectual property information, knowledge asset management, digital scholarship, scientific data services, and disciplinary knowledge management tools [20].

If optimizing physical service quality through library space reengineering to "bring users in" remains within the scope of traditional library functional attributes and librarian capabilities, then embedded services represent "sending librarians out" to embed into users' research processes, work processes, workplaces, workflows, and workspaces, achieving deep integration of information knowledge with user needs. This represents an innovative expansion and leap in library business scope and librarian service capabilities. Libraries and librarians are no longer intermediaries between users and information but establish cooperative relationships with researchers, becoming actual contributors to scientific research. If physical access services prove the library' s existence, embedded services prove the library' s value. This requires not only building a high-level embedded subject librarian team on the front lines but also mobilizing professional knowledge and capability support from various departments and teams behind the scenes. University libraries should seize opportunities, meet challenges, and continue exploring and expanding the content and methods of embedded services to achieve transformation and upgrading of service capabilities.

4. Librarians and Users

Librarians constitute the most dynamic force in libraries, and their service capabilities directly determine overall library service effectiveness. Meanwhile, users, as the terminal of library services, determine the iterative direction of library service content and pathways. Librarian capability cultivation and transformation constitute the realistic foundation for achieving high-quality user services, while user needs are the fundamental basis for building new librarian capability systems.

From the internal perspective of library management, university libraries should adhere to a "librarians first" development philosophy. Facing evolving user needs in the digital intelligence era, professional librarian teams should possess

not only traditional capabilities in document and information services but also deep-level service capabilities in subject services, data services, think tank services, and smart services [5]. However, this creates a significant gap with the current knowledge structure and capability reserves of librarians in most university libraries. Therefore, university libraries should explore and construct new librarian capability systems for the digital intelligence era, combining traditional advantages with new needs of university faculty and students, and prioritize librarian capability cultivation and transformation in library management.

From the external perspective of library services, university libraries should prioritize users: librarian capabilities must be demonstrated through user services. As Professor Cheng Huanwen identifies in his MOOC "Library Management," "only when everyone says it' s good is it truly good" [22]. Only when users approve does it indicate that librarian service capabilities meet their needs and pass the final test. University libraries should link librarian training with user service satisfaction evaluation systems to continuously promote the scientific and professional development of librarian capability systems.

5. Library and University

The library is the university' s literature and information resource center and an academic institution serving talent cultivation and scientific research [23]. The library' s importance depends on its degree of support for the university. Currently, some libraries face the risk of marginalization within their universities, with discussions of "library obsolescence" persisting. The root cause is that some libraries cannot fully transform school investments in personnel and funding into value-added new service capabilities, making it difficult for libraries' value to gain widespread recognition at the university level. Consequently, the university' s resource investment in libraries will continue to decline, further weakening the library' s support capacity for teaching and research, leading to a stagnation of the originally positive interactive development relationship between university libraries and universities regarding funding, resources, and services.

To break this dilemma, university libraries should align with university research and management task needs, focus on the pain points of graduate students, faculty, and researchers, and shift from "passive service and low-level development" to "proactive service and high-quality supply," reconstructing the library' s functional positioning and value recognition. This process is the key prerequisite for university libraries to secure school funding and personnel support. University libraries must precisely position themselves according to the actual needs of universities in three dimensions: teaching, research, and management. They should conduct ideological, information literacy, and data literacy education for students; provide embedded, personalized, and professional information services for researchers; and optimize resource allocation for university management departments to comprehensively improve the transformation efficiency of resources into service capabilities. A British Library survey estimated that every £1 of public investment in libraries generates £4.4 in returns [24]. University libraries

must evaluate and present both explicit and implicit contributions to university scientific research, talent cultivation, and campus culture construction, making the library' s achievements visible and its value heard. Therefore, the fundamental means to reshape library value and secure university funding and personnel support is the transformation and upgrading of libraries and librarians' capabilities, providing high-level services to faculty and students, and forming a positive development model where libraries support university scientific research with high-level services while universities support library development with funding and personnel.

6. Technology and Humanities

Facing the realistic crisis of university library marginalization, the profession has proposed two transformation approaches: "technology saves libraries" and "humanities saves libraries." The library profession is technology-sensitive [23]. The "technology saves libraries" approach advocates solving library development problems through comprehensive application of advanced technologies, such as exploring applications of virtual reality [25], 5G [26], cloud computing [27], and digital twin [28] technologies in library operations to achieve transformation and upgrading of library service capabilities. The "humanities saves libraries" approach advocates that libraries and librarians should uphold humanistic spirit, establish good service attitudes and consciousness, root themselves in the humanistic connotations contained in library collections and the humanistic care provided by comfortable reading and learning spaces, and deeply develop business modules focusing on humanistic attributes such as special collection mining [29], cultural heritage protection and inheritance [30], and information literacy education [31] to reconstruct libraries' humanistic and social value in the information age.

However, we must also fully recognize that university libraries are neither developers of information technology nor creators of humanities resources. The fundamental capability of university libraries is service capability. Whether applying new technologies or mining humanities resources, only by accurately transforming them into service capabilities that meet users' real needs can libraries fundamentally reshape their value. Technology and humanities are both foundational capabilities of libraries, forming two wings of one body that cannot be neglected. Therefore, university libraries should both value technology' s role by actively exploring modern information technology to empower library service model innovation and value humanities' influence by improving librarian service quality, optimizing library space layout, mining collection humanities resources, and creating library humanities services. Ultimately transforming technological and humanities capabilities into service capabilities is the fundamental path to achieving innovative development.

7. Occupation, Profession, and Career

Librarians' work includes three levels: occupation, profession, and career. Occupation refers to the socio-economic attributes of librarians' work—performing their duties well within specified time to receive corresponding compensation. Profession refers to librarians focusing on a research field, gradually cultivating and building professional capabilities to discover, analyze, and solve problems and produce research outcomes. Career represents librarians' continuous exploration and pursuit of their profession, ultimately making significant contributions in a field. Occupation is the economic foundation for librarians' survival, profession is the capability guarantee for librarians' development, and career is the emotional support for librarians' professional identity.

University libraries need to coordinate librarians' responsibilities and contributions across these three levels to stimulate their work enthusiasm and innovation capacity. At the occupation level, they should strengthen librarians' professional quality and capability cultivation, actively align with national cultural, educational, and technological development strategies, draw on foreign librarian professional capability standards, and comprehensively enhance service, management, learning, technical, and professional knowledge capabilities. They should also protect librarians' rights and interests, address their career development difficulties and needs, provide corresponding support and assistance, and enhance librarians' sense of professional belonging and happiness [32, 33]. At the profession level, the core work of university libraries is serving teaching and research, so they should encourage librarians to use scientific research methods to discover, analyze, and solve problems in library academic service processes, and produce academic achievements at the rational level. At the career level, they should guide librarians to establish correct professional values and cultivate professional emotions. University librarians should regard serving teaching and research as their core value [34], continuously cultivate their occupational and professional capabilities, improve their service capabilities, integrate into the cause of supporting university teaching and research, and achieve organic integration of individual value and library career in service practice.

8. Research and Operations

The *Regulations on University Libraries* positions university libraries as academic service institutions, reflecting that university libraries should value both service and academic attributes. Library operations such as literature resource construction, reference consultation services, and information technology application all require librarians to exert intellectual labor to perform well, and library operations themselves possess academic research attributes [23]. Therefore, research has become a major driving force for library innovative development. Library research differs from that of pure academic institutions like university departments and research institutes.

Library research is not limited to applying for projects and publishing papers,

nor is it merely for professional promotion. Instead, it is deeply rooted in and focused on insights and solutions to problems in the library itself and the entire library profession, concentrating on urgent practical problems and potential development trends in various business modules such as resource construction, user services, technology application, and organizational management. It emphasizes application-oriented research supplemented by theoretical research. For libraries today, research capability determines innovation level, innovation level determines development quality and speed, and social status and influence.

Given that librarians need to devote most of their time and energy to operational work while research has a "part-time" nature, university libraries should first strengthen top-level design and conduct organized research, concentrating limited human, material, and financial resources on important problems in the library field (especially their own library), forming research teams, actively applying for various research projects within and outside the university, supporting capable researchers to grow better, and driving the overall research capability improvement of the library. Second, they should highlight applied research, proposing genuine, practical, and excellent solutions for existing problems and difficulties, without focusing solely on papers and publications. Research outcomes including research reports, consultation suggestions, think tank special reports, and planning designs should all be strongly supported as long as they help improve library service levels and promote innovative development. Third, they should create favorable conditions for librarians' research, strengthen research capability training, and improve librarians' research abilities. Finally, they should emphasize effectiveness evaluation and incentives for library research, fully recognizing research outcomes that benefit the library and the library profession.

9. Individual Library and Collaboration

From the perspective of library development, national policy support and institutional guarantees are key prerequisites for sustainable library development. Due to different levels of economic development across domestic regions, funding investment in university libraries also shows significant differences, resulting in unbalanced library development. Second, from the perspective of library types, public libraries, university libraries, and specialized libraries undertake different responsibilities and have different advantages. Facing limited school funding support, university libraries face great difficulties in achieving innovative development relying solely on individual library resources, making it imperative to strengthen cooperation between university libraries and between university libraries and other types of libraries.

University libraries should fully rely on library consortia such as the China Academic Library & Information System (CALIS) and the National Science and Technology Library (NSTL) to strengthen interlibrary cooperation and resource sharing. Through centralized cataloging, interlibrary loan, cooperative collection development, and literature resource layout, advanced libraries can

drive less-developed libraries, fully leveraging the advantages of different types of libraries in resource scale, resource types, and technology application to complement each other' s strengths and achieve coordinated development. Meanwhile, various library science associations, research societies, and library committees should play a leading role in designing coordination, exchange, sharing, risk-sharing, and co-creation benefit mechanisms, and constructing cooperative systems involving upstream, midstream, and downstream resource parties and various school departments.

10. Director and Team

The library director is the person responsible for managing and formulating library development goals, with role positioning in decision-making, management, and service [35]. Librarians and leaders at all levels constitute the library team. The relationship between director and team is mutually complementary and collaborative: the team needs to follow the director' s overall task deployment to conduct operational work, while the director' s development plans for the library also require the team for implementation. Therefore, closely integrating the director' s scientific leadership with librarians' effective practice is the key realistic path to achieving innovative development in university libraries.

The director' s leadership is closely related to their disciplinary background, professional experience, and library professional knowledge. Particularly in recent years, with changes in the director appointment system and frequent director replacements, there are increasingly more directors without library science educational backgrounds or library work experience [37]. How to fully strengthen the director' s strategic leadership role is crucial. University library directors should establish strong mission awareness—the director' s mission is to achieve high-quality library development. Library development is not abstract but is measured by concrete indicators. Directors should include development scale, operational conditions, service capacity for readers, operational benefits, library management level, and business innovation capability in development plans [38]. The essence of library development is innovation. Directors should have foresight, closely monitor higher education and information technology development trends and users' higher-level needs, continuously explore service pathways by closely integrating new technologies with new needs. Meanwhile, library development faces various external constraints, so the director' s responsibility is to innovate boldly, maintain courage and confidence, face challenges directly, and secure a better environment for library development. Whether a director can succeed does not depend on their professional background but on their comprehensive capabilities including political quality, professional knowledge, management ability, and innovative courage. Directors must be willing to innovate, take responsibility, be dedicated, and love the library profession. The library team is the ultimate implementer of the director' s decisions and plans. Directors should be adept at discovering the team' s professional capabilities, promptly listening to team opinions and suggestions, stimulating team work

enthusiasm and creativity, and achieving positive interaction between director and team to drive library innovative development.

Facing the "15th Five-Year Plan" and future innovative development, university libraries must address these ten relationships: present circumstances versus strategic vision, resources versus services, physical access versus embedded services, librarians versus users, library versus university, technology versus humanities, occupation versus career, research versus operations, individual library versus collaboration, and director versus team. They must confront opportunities and challenges in achieving innovative development. University libraries should forge ahead, face higher-level user needs in the digital intelligence era, take service innovation as the foundation, coordinate various aspects including resource construction, user services, technology application, librarian cultivation, and academic research, and achieve high-quality innovative development of libraries.

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