University Library Management: Structure, Function, and Innovation

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Abstract

As an integrative value-creation activity, management permeates every aspect of university libraries and serves as the prerequisite, foundation, and driving force for all service operations. Due to changes in the internal and external environments of university libraries, as well as shifts in the subjects and objects of management, management innovation has become imperative. Through management and management innovation, libraries can establish appropriate intra-library and inter-library orders and foster a favorable service ecology. This process transforms the latent creativity of librarians into actual creative power and service innovation outputs, promotes the optimal configuration, effective integration, and full utilization of various service elements both within and outside the library, and seeks to achieve the amplification, aggregation, and integration effects of management.

Full Text

Preamble

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1. Introduction

University libraries serve as the core centers for information, academic research, and cultural exchange within higher education institutions. As the "heart" of the university, the management of these libraries directly impacts the quality of teaching, the progress of scientific research, and the overall cultivation of talent. In the digital age, university library management is undergoing a profound transformation, shifting from traditional collection-oriented models to service-oriented and technology-driven paradigms. This paper explores the

organizational structure, core functions, and innovative development paths of modern university library management.

2. The Organizational Structure of University Libraries

The management structure of a university library is the foundation for its efficient operation. Traditionally, libraries adopted a hierarchical functional structure, typically divided into departments such as Acquisitions and Cataloging, Circulation, Reference and Information Services, and Systems/Technical Support.

However, with the diversification of information resources, many libraries have transitioned toward a matrix or flattened organizational structure. This shift emphasizes cross-departmental collaboration, particularly in areas such as digital resource construction and disciplinary services. A modern structure often includes:

- **Resource Construction Division:** Responsible for the integrated procurement and processing of physical and electronic resources.
- **Reader Service Division:** Manages circulation, reading room maintenance, and basic user assistance.
- **Subject Service Department:** Employs subject librarians to provide specialized information support for specific academic departments.
- **Information Technology Center:** Maintains the library management system (LMS), digital repositories, and network infrastructure.

3. Core Management Functions

The management of university libraries encompasses several critical functions that ensure the effective dissemination of knowledge:

3.1 Resource Management This involves the systematic collection, organization, and preservation of diverse information carriers. Beyond traditional books and journals, management now focuses heavily on database licensing, open-access resources, and the construction of institutional repositories to showcase the university' s research output.

3.2 Service Management The primary goal of library management is to meet the information needs of faculty and students. This includes traditional lending services as well as high-level services such as information literacy training, sci-tech novelty searches, and bibliometric analysis for research evaluation.

3.3 Space Management In the digital era, the physical library is evolving from a "book warehouse" into a "learning commons." Management must optimize space to provide quiet study areas, collaborative group discussion rooms, and creative

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摘要

As an integrative value-creation activity, management permeates every aspect of the university library. Given the shifts in the internal and external environments of the library, as well as changes in the subjects and objects of management, management innovation has become an essential prerequisite and foundation for development.

Through management and management innovation, libraries can create a suitable institutional environment and foster a robust service ecosystem. This process facilitates the transformation of potential creativity into tangible creative power and innovative service outputs. Ultimately, management innovation ensures the optimal allocation, effective integration, and full utilization of resources, thereby achieving a significant synergistic integration effect.

关键词

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Abstract

As the information landscape evolves, university libraries face unprecedented challenges and opportunities. This paper explores the core components of university library management, focusing on organizational structures, essential management functions, and the necessity of management innovation. By analyzing current trends in digital transformation and user-centric services, we propose a framework for modernizing library administration to better support academic research and student learning.

1. Introduction

The university library serves as the intellectual heart of the academic institution, acting as a vital hub for information resources, scholarly communication, and independent study. In the era of big data and ubiquitous connectivity, the traditional models of library management are undergoing significant shifts. Effective management is no longer merely about the physical preservation of books but involves the strategic coordination of digital assets, human capital, and technological infrastructure. This paper examines how university libraries can optimize their management structures and functions to foster an environment conducive to innovation and academic excellence.

2. Management Structure of University Libraries

The organizational structure of a university library determines its operational efficiency and its ability to respond to the needs of its stakeholders. Traditionally, libraries have utilized hierarchical, department-based structures (e.g., acquisitions, cataloging, circulation, and reference). However, the rise of interdisciplinary research and digital services has necessitated a move toward more flexible, matrix-based, or flat organizational models.

2.1 Traditional Hierarchical Models

In a traditional setting, clear lines of authority and specialized departments ensure stability and routine efficiency. While this structure supports large-scale processing of physical materials, it can often lead to "silos" where communication between departments is restricted, slowing down the response to emerging technological trends.

2.2 Modern Integrated Structures

To address the complexities of the digital age, many libraries are adopting integrated structures that emphasize cross-functional teams. These teams may focus on specific areas such as "Digital Scholarship," "User Experience," or "Research Data Management." By breaking down departmental barriers, libraries can provide more holistic services that align with the lifecycle of modern research.

3. Core Management Functions

Management functions within the university library are multifaceted, encompassing resource allocation, personnel development, and service delivery.

3.1 Resource Management and Allocation

The primary function of library management is the strategic acquisition and organization of resources. This includes balancing the budget between physical collections

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Abstract

As an integrated value creating activity, management permeates all aspects of university libraries and serves as the prerequisite, foundation, and driving force for all service work. Due to changes in the internal and external environment of university lib raries, as well as the subjects and objects of management, management innovation is essential. Through management and management

innovation, create suitable intra library and inter library order, cultivate a favorable service ecology, transform l ibrarians' potential creativity into actual creativity and service innovation output, promote the optimized allocation, effective integration, and full utilization of various internal and external service elements, and seek the amplification effect, aggreg ation effect, and integration effect of management.

Keywords

University library; Management; Management structure; Management function; Management innovation.

1 引言

Serving teaching, scientific research, and the aspirations of internal and external stakeholders, university libraries rely on externally derived technologies and applications. The library itself does not produce tangible physical goods; rather, its value is realized through systematic processes such as acquisition, classification, cataloging, collection preservation, circulation, reading promotion, information literacy education, and subject services. These activities constitute a management process—encompassing planning, organization, implementation, leadership, control, communication, coordination, and motivation—that integrates space, technology, subjects, objects, and time. Consequently, the effectiveness of a university library' s professional services depends on both its management capabilities and its professional expertise. Management is the core essence of the university library, permeating all domains of library work as a fundamental, integrative, and coordinating function.

However, at present, university libraries (and the field of library management within library science) face numerous shortcomings. These include a lack of foresight in strategic regulation and disorder in operational management. For instance, during a personal visit during the winter break, I observed a copy of Ludwig von Mises' *Human Action* translated by Xia Daoping. The library' s barcode was placed directly in the center of the cover, completely obscuring vital information and hindering the reading experience. Furthermore, in the case of Thomas Hobbes' *Leviathan*, the book was located in a high-density repository on another campus; requesting it through inter-campus loan incurred unnecessary labor and logistical costs.

From a management perspective, this paper attempts to provide a comprehensive overview of the foundational theories of university library management. By doing so, it aims to encourage further scholarly discussion and, from the professional perspective of library science, further enrich and refine the specific content of library management. The ultimate goal is to advance the theoretical research of library management to a new level and strengthen the theoretical foundations of library science.

2 文献

With the advent of the Industrial Revolution and the emergence and development of industrial enterprises, scholars began to explore management under the inspiration of theories from psychology, economics, and political science. Frederick Taylor, the "Father of Scientific Management," pioneered concepts such as standardization, differential piece-rate systems, and functional foremanship. He advocated for a "mental revolution" shared by capitalists, managers, and employees alike. The goal of scientific management was to improve labor productivity and resolve prominent issues such as market shortages, low corporate efficiency, and strained labor-management relations.

Management is fundamentally the pursuit of the integration and unification of interests between managers and subordinates; its essence lies in cooperation. Henri Fayol, the "Father of Management Theory," horizontally deconstructed management into four basic functions: planning, organizing, leading, and controlling (in addition to non-basic functions such as motivation, evaluation, and communication). Conversely, the Decision Theory school deconstructed management vertically into two primary functions: decision-making, for which managers are responsible, and execution, for which subordinates are responsible.

The management guru Peter Drucker posited that management consists of "doing the right things" and "doing things right." Here, "doing the right things" refers to the direction of the work, while "doing things right" refers to the specific execution. When the direction, methods, and modes of action are all correct, management becomes effective. Although scholars interpret management from different perspectives, these viewpoints are interconnected, consistent, and mutually explanatory.

Management is a knowledge-based activity that uses managerial knowledge to activate, integrate, and utilize other forms of specialized knowledge, such as information or logistics expertise. This has led to the organic unification of fields such as information management, production management, and logistics management. The resulting division of labor, specialization, and professionalization has significantly enhanced management efficiency (defined as management output divided by management input).

Generally speaking, classical and modern management theories are primarily based on production or operations as the management context. They are built upon the assumption of the "economic man," follow holistic and objectivist methodologies, and treat people as means to an end. These theories focus heavily on how to effectively utilize the "hands" of the workforce.

In contrast, postmodern management theory takes innovative work as its management context and is based on complex human assumptions (such as Maslow's self-actualization hypothesis, which was highly regarded by Drucker). It adopts individualistic and subjectivist methodologies, treating people as ends in themselves rather than merely means. It focuses on how to effectively engage the

"minds" of workers. From the social man to Maslow' s self-actualization, and from the division of labor to the division of management and knowledge, theories have evolved from the "invisible hand" to the "visible hand" and the "helping hand." Relevant theories from psychology and economics have laid the foundation for this research. In the field of library science, the work of scholars like Schrettinger focused on "library organization," including building construction, layout, shelf design, and book classification [5][6], with the aim of keeping "furniture and items in order." Influenced by British library science thought, Ranganathan emphasized the management of "tasks" to rapidly satisfy readers' document needs. Abbott argued that library science should include not only the organization of "objects" (in Schrettinger' s sense) but also the management of "tasks" and "people." However, early scholars did not effectively integrate library organization with library management. In summary, while emphases differed, scholars generally agree that the field has always valued the application of management theories and methods in library practice, seeking to enrich library science theory and consolidate the discipline' s theoretical legitimacy.

Continuing this tradition, early Chinese scholars returning from studies abroad placed great importance on library management issues. After the 1980s, domestic scholars proposed various "theories" regarding the research objects of library science, leading to a shift in research focus. The library science community' s research on management issues has evolved as follows:

The focus has shifted from being resource- and technology-centered to being person-centered; from scientific management to a focus on human-oriented management; and from internal management to cross-organizational management and library governance. This evolution drives the digital and intelligent transformation of libraries. Library management is the study of managing the entire open system of the library, which is composed of people, objects, and tasks. Its research objects are determined by the interdisciplinary, applied, and context-dependent nature of the discipline. Currently, there is a wealth of applied research on library management, but systematic theoretical research remains relatively scarce.

3 管理结构

Management encompasses three distinct levels: management theory, management methodology, and management practice. Among these, management theory represents the level of "Tao" or the metaphysical, focusing on fundamental laws and principles, such as theories regarding human needs and motivation.

Management methodology represents the level of "Law"or the transitional phase, focusing on the transformation of theory into action, such as the implementation of compensation-based incentive systems. Management practice represents the level of "Tools" or the physical/technical application, which must be adapted to specific contexts—for example, providing shopping vouchers instead of traditional mooncakes as Mid-Autumn Festival benefits. Generally, what is referred

Figure 1

Figure 1: Figure 1

to as "management" consists of management practices formed by a core layer of theory, an intermediate layer of methodology, and a peripheral layer of technical skills; it is therefore highly context-dependent. A management model, on the other hand, is a comprehensive management system composed of a series of management practices. For instance, Haier developed its own model by drawing on Toyota' s lean production management. Based on different classification criteria, the types of university library management are illustrated in

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3.1 按管理主体制分

1. Management Subjects and Modes

Management subjects typically refer to managers at all levels within a university library, including the director, deputy directors, and department heads. In practice, every librarian acts as both a manager and a subordinate. Future university libraries are envisioned as communities without centralized management subjects—free organizations where management is distributed. Based on the nature of the management subject, university library management can be categorized into manager-led management, functional management, and self-management. Manager-led management implies a separation between the subject and object of management, following a hierarchical sequence where the manager holds the dominant position and the subordinates are responsible for specific execution.

2. Functional Management

Originating from Taylor' s scientific management, functional management is a concrete implementation form extended from manager-led management. Since the primary subject of management remains the manager, functional management is categorized here based on the management subject (though it could also be classified based on the management object). As the internal production relations of the library, functional norms constrain the behavior of all staff and systematically influence all management activities. This shift allows library management to move toward standardization, proceduralization, and normalization, thereby improving management efficiency and enhancing the library' s service capacity. This framework includes structural management (design, operation, and transformation of library structures), institutional management (establishment, implementation, and reform of library regulations), mechanism management (assessment, reward, and punishment mechanisms), and cultural management (design of values and establishment of behavioral ethics).

3. Self-Management and Values

Self-management involves the internalization of values. Derived from cultural management, value management first requires the establishment of core values, upon which individuals perform self-management.

4. The Role of Self-Management

To effectively manage a team or organization, one must first manage oneself. This includes the self-management of both managers and subordinates. It implies a convergence of the subject and object of management, where power and responsibility are integrated. All librarians are empowered to organize and implement tasks within their own scope, effectively resolving "interface friction" issues. This approach liberates traditional subordinates and frees managers from mundane affairs, allowing them to focus on critical issues such as library strategy.

5. The Necessity of Knowledge Librarians

Particularly after the third industrial revolution, the acceleration of technological replacement, intensified competition, and the increasing importance of service innovation have placed a significant historical mission on knowledge librarians as the primary carriers, creators, and users of knowledge. To fully utilize their intellectual capital and effectively respond to the uncertainties of the service environment and service innovation, self-management must be implemented for knowledge librarians. Ultimately, making decisions on their behalf is often counterproductive.

6. Dynamic Coupling of Management Modes

Manager-led management, functional management, and self-management exist in a complementary and partially substitutable relationship. These three modes are dynamically coupled according to different organizational contexts and business requirements. Different management strategy combinations essentially represent a reconfiguration of power and responsibility among managers, librarians, and the library. For structured work—where time, location, objects, events, and goals are clearly defined—the focus should be on optimizing manager-led and functional management while de-emphasizing self-management to reduce service costs and improve efficiency. Conversely, service innovation often involves unstructured work that favors self-management over manager-led and functional management. This enhances the independence, autonomy, and freedom of librarians, thereby stimulating their potential and releasing their creativity. Under given management conditions, the entire management system reaches its maximum effectiveness when the marginal effects of these three management modes are equal.

3.2 按管理客体制分

In terms of the classification of management objects, the specific structure of university library management—encompassing appointment, training, incentives, and evaluation—constitutes the core of the entire management system. Within the Five Laws of Library Science, S.R. Ranganathan emphasized the critical importance of personnel management.

Only by effectively managing people—especially the managers themselves, who represent the most expensive and dynamic resource within the library—can one successfully manage other domains such as demand information management, spatial management, and technical application management. Among these, demand information management primarily involves information acquisition, while resource management generally covers procurement, classification and cataloging, reader utilization, and weeding. Prior to the 21st century, resources were exceptionally scarce and thus became the focus and priority of library management, a trend particularly evident in the library science frameworks of Schrettinger and others. Spatial management includes layout, arrangement, and operations/maintenance. Technical application management involves determining why to apply technology, what to apply, where to apply it, and the objectives of such applications. As electronic resources proliferate and ownership gives way to access rights, the relative importance of traditional resource management has diminished.

Consequently, service operational capability and service innovation capability have become central to library management and service innovation. This specifically includes the identification, development, and utilization of these capabilities. What is essential is not the specific technology itself, but rather the integrated library service capabilities formed after synthesis, which are directly related to service performance; indeed, service capability is the essence of the library organization. Within this framework, service innovation capability is paramount. Librarian competence serves as the core of the capability system, making the management of librarian skills the highest priority. Depending on the service stage—whether it be acquisition, classification, cataloging, collection, circulation, reading promotion, information literacy education, or subject services—one must assess whether a transformation has occurred. Service operations management and service innovation management include the management of operational and innovation performance, specifically involving performance analysis, evaluation, and feedback.

By managing librarians and fostering service innovation capabilities, libraries can drive service innovation, generate performance outcomes, and conduct systematic evaluation, feedback, and iterative optimization.

3.3 按

Hierarchical Management in University Libraries

In the context of university library management, administrative functions are categorized into three distinct levels: strategic management, tactical management, and operational management.

Strategic Management

Strategic management is characterized by its long-term and comprehensive nature, typically spanning a period of five years or more. Primary examples include the development of the library's "14th Five-Year Plan" or "15th Five-Year Plan." At this level, library leaders must possess robust strategic decision-making capabilities. They are responsible for identifying emerging opportunities, formulating rational strategic frameworks, and coordinating the organizational resources necessary for implementation.

Tactical Management

Tactical management serves as the critical link between high-level strategy and daily operations, requiring a balance of decision-making and execution. Managers at this level must understand the specific resources and characteristics of their respective departments. Their role is to translate broad strategic goals into actionable plans using appropriate methodologies, ensuring that the library's overarching vision is effectively channeled into departmental initiatives.

Operational Management

Operational management focuses on the specific tasks performed by individual staff members. This level requires clear objectives and concrete tasks, demanding high levels of professional execution from the library staff. Success at this stage involves integrating strategic goals with the practical realities of daily work, ensuring that every detail is handled with precision and thoroughness to achieve a solid foundation for the library's overall mission.

3.4 跨组织管理

Driven by the erosion of service capacity caused by the increasing demands of readers, the inherent limitations of university libraries, and the wide dispersion of resources, university libraries must establish extensive connections with external stakeholders. By fostering internal circulation and systematically enhancing service capabilities, libraries can implement cross-organizational management. This framework encompasses three primary dimensions: cross-organizational relationship management, cross-organizational capability management, and cross-organizational operations. Specifically, cross-organizational relationship management involves the establishment and transformation of inter-organizational

ties. Cross-organizational capability management focuses on the construction, maintenance, and enhancement of cross-organizational visionary capabilities (a form of strategic insight and regulatory capacity for networked services), coordination capabilities, and knowledge capabilities. Finally, cross-organizational management includes service operations and innovation management.

In the context of openness and cooperation, cross-organizational management has become a vital responsibility for library leaders. It requires leaders to possess sophisticated strategic insight and strategic regulatory capabilities.

Furthermore, leaders must demonstrate cross-organizational communication and coordination capabilities. Beyond the scope of traditional university library management, there exists the critical issue of university library governance. University library governance refers to an institutional arrangement—comprising formal or informal, internal or external rules—designed to coordinate the interests between the library and all stakeholders. This ensures scientific decision-making, ultimately safeguarding the interests of faculty, students, and other parties while preventing library leadership from deviating from the goals of the university and its users. This governance framework includes both governance structures and governance mechanisms. A core component involves the selection, appointment, motivation, and constraint of leaders. Effective incentive and constraint mechanisms are essential to attract capable library leaders, promote the realization of library objectives, and protect the collective interests of the library, the university, and the readers.

4 管理功能

Without management, there is no organization. As one of the greatest inventions of the 20th century, management is characterized by context-dependency, difficulty of portability, irreplaceability, value-orientation, and practicality. It serves as a core source of service capability and competitive advantage for university libraries.

Some university libraries fall into the trap of instrumentalism, placing faith only in visible, tangible results while distrusting the invisible, foundational, and intangible aspects of management that generate efficiency. They overlook the value-creation functions that exist above specific activities. The purpose of management in a university library must be value-oriented; although the emphasis of value generation may vary, it should focus on creating value, defining value, exchanging value, or a combination thereof.

To perform any task concisely and effectively, one must grasp its first principles and underlying logic—approaching the "true essence" of the work—and design corresponding forms accordingly. For activities that lack value or efficiency, a "First Principles" analysis and the application of "Occam' s Razor" (entities should not be multiplied without necessity) should be conducted to determine their necessity. Management activities that are unnecessary or yield marginal efficiency gains should be eliminated to avoid fragmented authority. For essen-

tial activities, the principle of maximizing cost-effectiveness should be applied through the optimization of departments and personnel. This involves systematic evaluation, reflection, and optimization to ensure that departments are appropriately structured, personnel capabilities match job requirements, and resources are optimized. Regarding business optimization, electronic resources that have been in circulation for a long time without generating sufficient benefits should be timely removed; meanwhile, libraries must monitor technological trends to introduce new technologies and phase out obsolete ones in alignment with developmental needs.

Constructing a rational business system:

Future business operations should be properly regulated. Services that are certain and routine can be outsourced; however, services that are uncertain or capable of establishing a unique competitive advantage should remain under the library' s direct control. Nevertheless, some university libraries have outsourced core professional tasks—such as acquisitions and cataloging—which appears to be an ill-timed approach to cross-organizational optimization.

Libraries must terminate low-value external relationships and establish valuable new ones, dynamically adjusting the closeness of relationships with stakeholders (such as optimizing partnerships with book vendors and database providers) to find a rational ecological niche. On this basis, they should further optimize cross-organizational capabilities and services to shape an appropriate order. Management measures consist of a set of rules that influence individual behavior through the functions of the "visible hand" and/or the "invisible hand," thereby achieving both individual value and organizational goals. An organization cannot function without rules; however, the more abstract a rule is, the broader its extension and the fewer its constraints, allowing for greater individual freedom. Conversely, the more specific and detailed a rule' s connotation, the more constraints it imposes, thereby reducing individual autonomy.

结果

The Order of University Libraries

The relationship between rules and freedom dictates that the more numerous and specific the goals and the more pronounced the structural requirements, the more difficult it is for individuals to exercise autonomy. Conversely, the opposite holds true. Based on the carriers of order, the hierarchical order within university libraries can be categorized into the order of people, the order of events, and the order of objects. Furthermore, spontaneous order is fostered through self-management and value-based management. These categories reflect the status of resources and their interrelationships. Specifically, the order of events encompasses all library operations and the sequencing of various tasks. The order of people is the primary and core order; only by shaping a reasonable order of people can a creative order of objects and events be established.

University library management must first construct an order of people required by the library—whether this order is artificial, spontaneous, or conscious—that can be understood, identified with, and accepted by staff, fitting the library' s operational context and facilitating the realization of institutional goals.

Rooted in collectivism, artificial order is designed by human agency and characterized by heteronomy rather than autonomy. It requires specific content and rigid adherence. As a social construct, a university library must first establish an artificial order that aligns with its vision, mission, and strategic goals to ensure the unity and stability of the entire organization.

Service operations require measures such as the establishment of rules and regulations. By strengthening rules, goals, and assessments, management exerts the role of the "visible hand." This artificial order of behavior limits the autonomy and freedom of librarians, leaving no room for error or failure.

In contrast, spontaneous order is rooted in individualism and generated through voluntary actions rather than being designed or constructed by managers.

Spontaneous order is the result of active adaptation, self-stabilization, and widespread diffusion through long-term human interaction. It is self-disciplinary rather than dictated by external processes or predetermined goals. This order aligns with evolutionary rationalism and helps navigate complex environments. Its operation relies first on abstract rules unrelated to specific ends, and second on individuals "legislating for themselves." As Hayek noted, and as the scholastic philosopher Thomas Aquinas suggested, the method that most closely approaches natural processes is the best. Spontaneous order represents the collective wisdom of dispersed individuals formed through autonomous rights, utilizing group intelligence with maximum efficiency. The Industrial Revolution, for instance, was not a product of organized planning but the result of free will and spontaneous order driven by the creativity of thinkers, scientists, inventors, entrepreneurs, and artists. To stimulate and release the creativity of librarians and promote service innovation, management should employ humanistic measures such as value management and self-management. By de-emphasizing rigid rules, goals, and assessments, and reducing structured tasks, the library can allow the "invisible hand" to function. Creating a corresponding spontaneous order enhances the independence, autonomy, and freedom of individual librarians, encouraging experimentation and tolerating failure. Furthermore, the networked relationships and behaviors between the library and external stakeholders foster a spontaneous order characterized by self-organization, self-motivation, self-feedback, self-repair, and self-evolution.

Between artificial order and spontaneous order lies "conscious order," which integrates elements of both. Much like the structural harmony of parallel prose —where equal word counts, corresponding structures, and tonal patterns ensure antithetical balance and rhythm—conscious order seeks a deliberate internal harmony.

Librarians are both "social beings" influenced by others and "inner-directed

beings." Through institutional and cultural management, libraries can simultaneously employ the "visible hand" and the "invisible hand" to seek an organic integration of library functions and reduce management costs. Much of management involves seeking certainty amidst uncertainty, either by introducing new elements or creating new combinations. University library management exhibits several integration effects: it coordinates consistency, creates new combinations through management, and ensures the optimal allocation, effective integration, and full utilization of resources. A university library is a unity of diversity, where unity is the prerequisite and foundation. Relying on effective management, the diverse contributions of individuals are transformed into a collective force to achieve goals. Among these, the amplification effect of creativity is paramount. By internalizing new elements and utilizing internal mechanisms to enrich and enhance librarians' skills, and by combining positive and negative reinforcement, management can tap into potential and motivate staff. Respecting and developing the individual—discovering and nurturing their interests and specialties—safeguards and expands their independence, autonomy, and freedom.

The introduction of new elements occurs through recruiting new staff or acquiring new technologies, leading to the accumulation and aggregation of resources within the library and generating an aggregation effect. Strategic management in libraries is a long-term endeavor that involves a composite effect of both introducing new elements and creating new combinations. In the industrial economy era, the organizational boundaries and service processes of university libraries were relatively closed, following a "short-board theory" that sought to compensate for internal deficiencies through standardization and procedural integration. However, in the internet economy era, the core work of the library is service. Its core value lies in discovering, nurturing, and releasing individual creativity to seek amplification effects. Service processes have become open, adhering to a "large barrel theory" of cross-organizational management. Through extensive connectivity and friendly interaction, libraries exchange material and energy with the environment, reducing internal entropy and achieving optimal resource allocation. This fosters a healthy ecosystem for service innovation. Management is the responsibility of managers, and its value reflects their ability to add value through the execution of management activities. All management activities in a university library involve either discovery or realization; they either exploit opportunities or avoid risks, resulting in value addition or loss prevention.

Planning is a process of value discovery. Through the analysis of the library' s internal and external environments, managers identify core competencies or advantages and set reliable goals and action plans. Organizational implementation follows planning, using the planned goals as a guide to coordinate technology and personnel, which together constitute value realization. Control is a parallel process to implementation, functioning as a correction or loss-prevention mechanism based on negative feedback. While the subjects, objects, methods, and standards are detailed during planning, the purpose of control is to ensure that implementation does not deviate from the plan. For example, without control, a plan might only achieve a fraction of its goal; with control, the realization rate

is significantly higher. For routine work, pre-control should be emphasized. For non-essential tasks or breakthrough service innovations, control may be minimal. For incremental service innovation, the focus is on methodological control.

Control primarily concerns the mode of execution. Planning, organization, and control are directly related to productivity at the practical level, reflecting the natural attributes of management. In contrast, leadership represents the relationship between people, reflecting the social attributes of management. Leadership permeates all aspects of university library planning, organization, and control.

5 管理创新

The Necessity of Management Innovation

From an evolutionary perspective, the development of university libraries is a process characterized by the cyclical alternation and spiral progression of management innovation and management maintenance. The central theme of this process is not equilibrium, but rather structural change. Management maintenance involves the continued application of existing management philosophies and methods. Within a given management context, maintaining a moderate degree of management rigidity is both necessary and effective for optimizing existing management frameworks, strengthening current practices, and enhancing management efficiency.

In fact, reliable performance is often more easily achieved during the maintenance phase rather than the innovation phase. However, long-term or excessive management rigidity inevitably leads to management inertia. As the internal and external environments of the library change, and as the subjects and objects of management evolve, original management methods become unable to meet the needs of the new situation. Consequently, it is essential to transform existing management approaches to propel management capabilities to a new level. This involves addressing the specific service environment, resource utilization mechanisms, integration mechanisms, stakeholder connection mechanisms, element sharing mechanisms, and value co-creation mechanisms. Management innovation serves to meet new management demands and break through original constraints. It entails introducing new management functions into the university library management system, incorporating new management elements, or generating new combinations of both. Its essence lies in the transformation of resource integration paradigms and utilization methods.

According to Schumpeter's interpretation, management innovation in university libraries constitutes a form of "creative destruction," where the "new" replaces the "old" to write a new chapter of extraordinary development. Whether foundational and systemic management innovation is effective depends on its ability to establish a rational mechanism for value addition, thereby ensuring the successful realization of the library's strategic goals.

5.2 管理创新

From a knowledge perspective, management innovation involves the creation of new management knowledge and/or the development of novel application methods for existing knowledge.

Management innovation within a library can be examined from the perspective of the entire organization, a specific department, or an individual. It can focus on the entire operational process or be categorized according to different criteria. According to the functional approach to management, management innovation includes innovation in planning, organizing, leadership, and control.

When classified by the degree of innovation, management innovation includes breakthrough innovation and incremental innovation. Breakthrough management innovation refers to a fundamental change in management methods characterized by a high degree of transformation and a wide scope of influence; for example, a library director shifting their leadership style from autocratic to democratic. Incremental management innovation typically refers to minor changes in management theories or methods with a limited degree of transformation and impact, such as minor adjustments to the weighting of criteria in librarian performance appraisals. When classified by hierarchical level, it includes innovation in management theory, management methods, and management modes.

Among these, management theory innovation represents forward-looking exploration and discovery, while management mode innovation represents backward-looking creation and implementation. Management method innovation serves as the bridge for these transformations.

The term "management innovation" as commonly used typically refers to the innovation of management modes. It should be noted, however, that the innovation of management modes also encompasses the application of new management theories and/or new management methods.

Based on functions and hierarchical levels, management innovation in university libraries can be further subdivided into specific categories.

方法

Theoretical Innovation

The theoretical innovation of this study is primarily reflected in the following three dimensions:

1. Integration of Multi-Scale Feature Fusion Mechanisms

Traditional models often struggle to maintain consistency when processing data across different granularities. This research proposes a novel multi-scale feature fusion framework that effectively bridges the gap between local micro-features

and global macro-structures. By introducing an adaptive weighting mechanism, the model can dynamically adjust the contribution of features from various scales, significantly enhancing the robustness of representation learning in complex environments.

2. Optimization of Nonlinear Mapping Constraints

To address the vanishing gradient and overfitting issues common in deep neural networks, this study introduces a refined set of nonlinear mapping constraints. By incorporating structural sparsity priors and manifold regularization into the objective function, we ensure that the learned latent space preserves the essential topological properties of the original data. This theoretical refinement provides a more rigorous mathematical foundation for understanding the generalization capabilities of the proposed architecture.

3. Dynamic Evolution of Learning Strategies

Unlike static learning paradigms, this work develops a dynamic evolution strategy for model parameters. By leveraging information-theoretic measures to quantify the uncertainty during the training process, the system can autonomously switch between exploration and exploitation phases. This innovation not only accelerates convergence speed but also ensures that the model reaches a more stable global optimum, providing a new perspective on the optimization of large-scale machine learning systems.

方法

Innovation in Mapping Methods and Organizational Theory

The advancement of modern scientific research necessitates a dual evolution in both technical methodologies and the underlying theoretical frameworks that govern institutional structures. Innovation in mapping methods refers to the systematic transformation of how data, spatial relationships, and conceptual networks are visualized and analyzed. By leveraging emerging technologies such as machine learning and high-dimensional data processing, these innovative mapping techniques allow researchers to uncover latent patterns that were previously inaccessible through traditional Cartesian or linear modeling. This shift is not merely technical; it represents a fundamental change in the epistemic approach to complex systems, moving from static representations toward dynamic, multi-layered simulations.

Parallel to these technical advancements is the requirement for innovation in organizational theory. Traditional hierarchical models often struggle to accommodate the rapid iterations and cross-disciplinary collaboration required by modern scientific inquiry. Organizational theory innovation focuses on the

development of adaptive, decentralized, and network-based structures that facilitate the seamless flow of information and resources. By integrating principles from complexity theory and institutional economics, these new organizational frameworks aim to enhance resilience and foster an environment conducive to breakthrough discoveries. The synergy between innovative mapping methods and robust organizational theories provides a comprehensive foundation for addressing the multifaceted challenges of contemporary global research.

方法

Innovation in Organizational Methods and Theoretical Frameworks

The advancement of scientific research necessitates a dual approach involving both the innovation of organizational methods and the pioneering of theoretical frameworks. Organizational innovation focuses on the structural and procedural evolution of research entities, aiming to enhance efficiency and foster cross-disciplinary collaboration. By reimagining how research teams are structured and how resources are allocated, institutions can create environments that are more conducive to breakthrough discoveries. This often involves transitioning from traditional, siloed departmental structures toward integrated, project-based models that leverage the diverse expertise of global networks.

Simultaneously, theoretical innovation serves as the intellectual engine of scientific progress. It involves the development of new paradigms, models, and conceptual frameworks that challenge existing assumptions and provide deeper insights into complex phenomena. In the context of modern scientific inquiry, theoretical innovation is increasingly driven by the integration of computational methods and data-driven approaches. By synthesizing empirical observations with rigorous mathematical modeling, researchers can formulate predictive theories that guide experimental design and technological application.

The synergy between organizational and theoretical innovation is critical for addressing the multifaceted challenges of the 21st century. While organizational shifts provide the necessary infrastructure and collaborative spirit, theoretical breakthroughs provide the direction and depth required for meaningful impact. Together, these two pillars support a robust research ecosystem capable of sustaining long-term growth and addressing global societal needs through systematic and creative inquiry.

方法

Theoretical Innovation and Methodological Advancement

The advancement of scientific research necessitates a dual focus on theoretical innovation and the modernization of methodological frameworks. Theoretical innovation serves as the foundational pillar, providing the conceptual lens through

which complex phenomena are interpreted and understood. By challenging existing paradigms and integrating interdisciplinary perspectives, researchers can develop robust theoretical models that offer greater explanatory power and predictive accuracy. This process involves a rigorous re-evaluation of established axioms and the synthesis of emerging empirical evidence into a cohesive intellectual structure.

Simultaneously, innovation in research methodology is essential to bridge the gap between abstract theory and empirical validation. Methodological advancement involves the development and implementation of novel techniques, such as advanced machine learning algorithms, high-resolution data acquisition systems, and sophisticated statistical modeling. These innovative approaches allow for the exploration of variables and relationships that were previously inaccessible, thereby enhancing the precision and reliability of scientific inquiry. By fostering a synergistic relationship between theoretical depth and methodological rigor, the research community can drive significant breakthroughs that address contemporary challenges and expand the boundaries of human knowledge.

方法

Innovation in management methods serves as the structural and functional foundation of management innovation. The university library can be represented as a service production function characterized by specific values and objectives. Within this framework, management can be treated as an independent variable; however, integrating it into the service production function may more accurately reflect the library' s operational reality. The constituent elements of a library possess inherent integrative and creative properties that directly influence service output. Furthermore, management influences all other independent variables, thereby indirectly affecting service output. Whether focusing on service operations or service innovation, efforts should prioritize excellence in management and management innovation. The university library represents a dual value-added activity with significant latent potential for value enhancement. By transforming functional systems and dismantling outdated structures, libraries can create a favorable service environment. Implementing measures such as decentralization and the reduction of restrictive responsibilities enhances the independence, autonomy, and professional freedom of librarians. By combining top-down design with bottom-up emergence, libraries can cultivate, stimulate, and release professional potential, thereby strengthening the amplification effect of their services.

The configuration and utilization mechanisms of specific service elements, along with integration mechanisms and related measures, promote the optimal allocation, effective integration, and full utilization of resources, thereby enhancing the integration effect. By expanding the scope of service recipients and increasing the degree of openness, libraries facilitate the cross-organizational flow of resources. This optimization of allocation and utilization further strengthens both the agglomeration and integration effects.

Improving service capabilities allows libraries to meet reader needs more effectively, while simultaneously creating new services to satisfy emerging demands.

6 结语

Governance precedes management. To fundamentally and systematically resolve the issues surrounding university library management and professional services, the primary concern is the appointment of library directors. More critically, as highlighted by scholars such as Ke Ping and Jiang Yongfu, the issue of librarian entry requirements must be addressed. For too long, libraries have been treated as "shelters," "transit stations," "safe harbors," and "nursing homes" within the university, leading to the problematic practice of discretionary appointments by university leadership.

If the governance issues regarding director selection and librarian entry are not resolved—or are resolved poorly—the overall quality of the library staff will inevitably decline. This weakens the library's capabilities and status, compromises its operations, damages its reputation, and ultimately undermines the legitimacy of library science as a discipline, regardless of the volume of theoretical research or practical effort invested. The core of university library management involves two fundamental subjects: the managers and those being managed. At its heart, the most critical issue is the management of the leadership team itself. University library management must be context-aware, accounting for the specificities of resources, operations, and objectives. It requires an ability to adapt to local conditions while being adept at "learning from the best" –specifically by adopting effective methods from modern corporate management. Managers must excel at integration, seeking the optimal configuration, effective consolidation, and full utilization of information, space, and other resources under contemporary management and technical conditions. Furthermore, management should remain librarian-centered. Through a series of personalized management measures, leadership should strive to discover, cultivate, incentivize, and unleash the creativity of the staff. By integrating and utilizing the unique resources (the "long poles") of their respective institutions and leveraging digital intelligence technologies, libraries can engage external stakeholders to build a robust service ecosystem that is open, systemic, and ecological in nature.

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Figure 2

Figure 2: Figure 2

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Figures