Co-creating Library Knowledge Service Value with Users: A Case Study of User Wisdom Integration in Yunzhou Knowledge Space and Its Implications (Postprint)

Authors: Li Yang, Zheng Dejun

Date: 2023-04-01T00:00:00+00:00

Abstract

[Purpose/Significance] The value of user participation in knowledge services has attracted increasing attention from the academic community. Analyzing cases of user wisdom integration in digital knowledge spaces can provide new concepts and methods for library knowledge service innovation. [Method/Process] From the perspective of value co-creation, this study employs case analysis method to analyze the user role positioning, phased strategies, and guarantee mechanisms for user wisdom integration in the Yunzhou Knowledge Space, summarizing the models and advantages of user wisdom integration. [Results/Conclusion] The implications of user wisdom integration in the Yunzhou Knowledge Space for library knowledge service innovation mainly include three aspects: attaching importance to the value of user wisdom integration with joint efforts from both demand-side and supply-side; identifying users' value orientation and implementing differentiated incentive measures; and focusing on users' value experience to establish diversified interaction mechanisms.

Full Text

Co-creating Library Knowledge Service Value with Users: A Case Study and Insights from User Wisdom Integration in Yunzhou Knowledge Space

Li Yang, Zheng Dejun
College of Information Science and Technology, Nanjing Agricultural University, Nanjing 210095

Abstract: *[Purpose/Significance]* The value of user participation in knowledge services has attracted increasing attention in academic circles. Analyzing cases

of user wisdom integration in digital knowledge spaces can provide new concepts and methods for library knowledge service innovation. *[Method/Process]* From the perspective of value co-creation and using case analysis, this paper examines the user role orientation, phased strategies, and guarantee mechanisms for user wisdom integration in Yunzhou Knowledge Space, summarizing the patterns and advantages of this integration. *[Result/Conclusion]* The implications of Yunzhou Knowledge Space' s user wisdom integration for library knowledge service innovation mainly include three aspects: attaching importance to the value of user wisdom integration with joint efforts from both demand and supply sides; identifying users' value orientation and implementing differentiated incentive measures; and focusing on users' value experience to establish diversified interaction mechanisms.

Keywords: User participation; Value co-creation; Library; Knowledge service; Yunzhou
Classification Number: G250
DOI: 10.13266/j.issn.0252-3116.2020.04.004

In recent years, with the deepening of open innovation concepts, leveraging user wisdom to enhance service levels has become a research hotspot in the library field. Examples include encouraging user participation in characteristic collection development and urging libraries to utilize emerging social media platforms promptly to enhance users' willingness to participate in resource construction and services. As a key focus of library service transformation, knowledge service has primarily relied on librarians' wisdom for service innovation in previous practices, but the results have been unsatisfactory, failing to truly eliminate the pain points between library service supply and user demand. Currently, the practical field has begun exploring the integration of user wisdom into the knowledge service process, recognizing users as a crucial fulcrum and core element for the success of library knowledge services. Zhang Xiaolin argues that knowledge service needs to shift from the "library-centered, collection-centered" mindset and behavior pattern to vigorously support the integration of various knowledge resources, including user groups. Ke Ping believes that in knowledge services, users are no longer passive recipients but rather decision-makers in services, ubiquitous users, resource creators, and wisdom contributors. Exploring the integration of user wisdom in knowledge services is receiving increasing attention from scholars.

User wisdom integration originates from the value co-creation theory in service marketing, which posits that to better meet user needs, enterprises enhance value by attracting user participation and deep interaction. Value co-creation represents a new value creation approach. R. Ramirez proposed the concept of value co-production, arguing that value creation and recreation depend on cooperation between enterprises and customers, with customer participation being the source of enterprise innovation. C. Claycomb et al. suggest that users represent the market and can bring market-demand-aligned information to enterprises, thereby helping improve product and service quality. S. Wikström pro-

posed that customers participate in enterprise production services as resources and co-producers, with deep interaction generating more new value. C. K. Prahalad and V. Ramaswamy's consumer experience-based value co-creation theory and S. L. Vargo and R. F. Lusch's service-dominant logic-based value co-creation theory represent two major branches in current academic circles. Together, they have built a theoretical framework centered on user participation and effective interaction, breaking the traditional perception of "enterprises produce value, customers consume value" and comprehensively revealing the transformation of enterprise management concepts and models in the new environment.

Research on value co-creation in service marketing further provides referable ideas for library knowledge service innovation. With interaction at its core, emphasizing user participation throughout the entire process from service value production to delivery, and leading users to jointly create service value has become a new exploration direction for library knowledge services. K. Curran et al. believe that the rise of Lib2.0 has brought users more power and provided opportunities for user participation in knowledge content production and value creation. E. Krosaki elaborated on tools and methods for library users to contribute original content. P. F. Marty explored the value of user participation in digital knowledge resource co-construction and future development trends. L. C. Nguyen expounded on the concept of participatory libraries, proposing that libraries should allow users to participate in core business operations. M. A. Islam et al. proposed a framework for university libraries to co-create value with users. M. A. K. Siddike constructed a process model for value co-creation in library community learning centers. Domestically, Shi Yanxia et al. explored the construction of library knowledge service value co-creation platforms; Zhang Hui et al. discussed implementation methods for library information resource construction value co-creation; Ren Ruirong et al. explored the construction of university library knowledge service systems based on value co-creation; Li Guangping et al. discussed the necessity, feasibility, and incentive mechanisms of user participation in library knowledge services; He Huifen explored the construction of user behavior-centered university library network knowledge service interaction platform frameworks; Zou Guifen discussed the value and strategies of user interaction and participation in knowledge service innovation. The above studies recognize the importance of users as knowledge service value co-creators but have not systematically revealed the specific methods and supporting conditions for user wisdom integration.

Currently, some practical platforms have emerged that treat users as value co-creators, with the success of the Zhihu community being a prime example. The Zhihu service platform co-creates knowledge service value with its community users, providing effective experience for knowledge service development in other fields. Compared with the Zhihu community, the Chaoxing Yunzhou Knowledge Space service platform has developed distinct practices for user wisdom integration. Relying on the robust resource support of Chaoxing Digital Library, it not only incorporates some of Zhihu community' s successful experiences but also develops knowledge production tools supporting rich media integration, more

effectively encouraging users to leverage existing digital resources for knowledge creation and exchange in virtual knowledge spaces to achieve value co-creation in knowledge services. This paper attempts to analyze the practice of user wisdom integration in Yunzhou Knowledge Space from a value co-creation perspective and propose insights for library knowledge service innovation.

2. User Role Orientation in Yunzhou Knowledge Space

User participation in content evaluation first emerged in the commercial sector, where users express opinions based on their experiences after purchasing or using products. Research shows that user reviews on commercial platforms can influence purchasing decisions. Yunzhou Knowledge Space adopts this mechanism while deepening it further. In addition to posting text comments, users can also express their usage and satisfaction through ratings (1-5 stars) and tag creation.

The value of resources lies in their utilization. Content evaluation that incorporates previous users' wisdom serves as an important basis for other users to assess resource value, influencing subsequent users' cognition and providing crucial references for their selection and use. Furthermore, user comments, ratings, and tags all originate from personal experiences, reflecting users' recognition of resource content. They represent not only users' viewpoints but also contain emotional tendencies, possessing significant analytical value. By identifying emotional polarity and value in evaluation content, we can not only deeply understand users' value preferences but also conduct precise recommendations for personalized needs, achieving the goal of improving service levels.

As the famous writer George Bernard Shaw said: "If you have an apple and I have an apple and we exchange these apples, then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas." Shaw' s advocated "exchange" corresponds to the "interaction"in value co-creation theory. Yunzhou Knowledge Space emphasizes building connections among users through social networking and triggering user interaction based on these connections. Different users can extend others' achievements through idea exchange and application of their own wisdom, generating more inspiration through collision during interaction. Study groups are a typical embodiment of this concept.

Yunzhou Knowledge Space supports users in creating their own study groups, allowing each user to connect with others possessing specific expertise and supporting various interaction methods such as private messaging and group chats. This satisfies both synchronous communication needs among group members and allows users to freely choose different ways to share, disseminate, and receive knowledge. Social network-based study group establishment provides users with an ideal venue for knowledge interaction, effectively promoting the transformation and dissemination of different users' tacit knowledge. Yunzhou Knowledge Space also supports users in organizing content generated within groups and

forwarding it to different scenarios such as contacts, WeChat, and QQ through system forwarding functions, maximizing knowledge circulation and value addition. User sharing constitutes an important knowledge source for Yunzhou Knowledge Space, expanding channels for other users' knowledge acquisition. Meanwhile, different users with the same needs or interests can resonate during communication, facilitating the emergence of new ideas.

Traditionally, digital library resource organization and production were primarily handled by platform operators. With the rise of Web 2.0 concepts and widespread application of information technology, the concept of user participation in information resource production has rapidly developed, becoming an emerging approach for digital resource organization. Knowledge reconstruction refers to integrating knowledge related to specific themes, describing, revealing, organizing, and reorganizing it to rebuild a comprehensive knowledge object oriented toward the theme.

University students, teachers, and researchers constitute the main user groups of Yunzhou Knowledge Space, among whom many possess outstanding capabilities or expertise in specific fields. Yunzhou Knowledge Space provides these knowledgeable and capable users with a platform to showcase their talents, allowing them to integrate and create knowledge according to their own needs using their wisdom. Knowledge reconstruction enables deep integration between the platform and users, creating good "resonance" value. Utilizing user wisdom to reconstruct knowledge also reduces the time other users spend searching, screening, and organizing resources, saving users' time costs.

3. Phased Strategies for User Wisdom Integration in Yunzhou Knowledge Space

To enhance users' willingness and enthusiasm for participation, Yunzhou Knowledge Space has adopted differentiated strategies centered on interaction at different stages. Through interaction, it narrows the distance with users, embodying the value co-creation theory' s emphasis on creating participation atmosphere and cultivating trust relationships.

3.1 User Participation Stimulation Stage

Interest Stimulation: Interest plays a fundamental driving role in user wisdom integration. Only with interest can users fully participate in content evaluation, knowledge sharing, and knowledge reconstruction activities. Yunzhou Knowledge Space regularly organizes thematic creation activities based on holidays and social hot topics, placing them in the most prominent platform positions to attract user participation. Mining users' potential interests based on their access trails and pushing relevant themes is also a common method for Yunzhou Knowledge Space to attract user participation. Specifically, the platform analyzes user preferences based on big data of user behaviors—such as topic creation, collection status, notes, and comment content—combined with

users' personal backgrounds, and pushes relevant activities and resources. Interest stimulation is a breakthrough point for enhancing the depth of user wisdom integration, conducive to increasing user activity.

Expert-driven Participation: Yunzhou Knowledge Space frequently invites domain experts to publish content, leveraging their social influence to drive user participation. Expert-driven participation originates from the "celebrity effect" in marketing and has a promoting effect on user wisdom integration. Compared with ordinary users, experts have higher social visibility, and their actions possess certain infectiousness and appeal, attracting public users' attention and imitation. Through the "celebrity effect" of experts, Yunzhou Knowledge Space creates a favorable atmosphere for user wisdom integration, making it easier for users to develop a sense of participation and transforming potential participants who have not taken action due to cognitive, emotional, or insufficient external conditions into actual participants.

Activity-driven Engagement: According to connectivist learning theory, user wisdom integration is a process where users establish connections with the platform and among users through communication and collaboration. To encourage active user participation, Yunzhou Knowledge Space operators regularly hold thematic creation competitions in universities with rich rewards as returns for user participation, such as the "Chaoxing Cup" Yunzhou Thematic Creation Competition held in Shanghai, Zhejiang, Hubei, and other places in 2017. Through competition activities, users' experiences are enhanced, generating positive emotions such as pleasure and sense of value. This is an effective way for Yunzhou Knowledge Space to attract user wisdom integration and helps strengthen user stickiness.

3.2 User Participation Promotion Stage

Accurate Guidance: Guidance can serve as a "binding agent"and is a profound manifestation of the user-centered service purpose, creating favorable conditions for user wisdom integration. Yunzhou Knowledge Space' s user interface establishes main navigation for notes, collections, thematic creation, courses, etc., and supports users in adding personalized applications such as micro-courses, smart classrooms, and surveys according to their needs, facilitating quick access to required content. Compared with text, icons are easier for users to quickly locate and remember, so platform navigation and applications are presented with personalized icons to convey information most intuitively, enabling users to operate more quickly and accurately. When users create topics, the system also provides prompts, such as reminding users about cover functions, supported formats, and file size limits, effectively reducing users' burden of recalling operations and enhancing functional experience.

Instant Help: To reduce the impact of users' cognitive and technical barriers on value perception, Yunzhou Knowledge Space provides help functions. By viewing help information, users can better master platform functions, rules, and

operation skills. The help functions are divided into two modules: "Frequently Asked Questions" and "Usage Help." The FAQ module mainly addresses common problems selected by the platform, with pictures for explanation. Usage Help mainly solves specific operation problems such as registration, login, editing, and uploading, usually presented in video format. Additionally, Yunzhou Knowledge Space provides detailed user guides for download on users' library websites, not only providing convenience but also further guiding users to connect and interact with libraries. The purpose of the help mechanism is to solve problems encountered during user wisdom integration through simple explanations. Yunzhou Knowledge Space' s diverse help methods both reduce managers' repetitive work and enhance the efficiency of user wisdom integration.

Rapid Feedback: If users cannot find answers in the FAQ and Usage Help modules, they can seek help from online customer service by posting questions. Customer service responds to user questions immediately. For instance, when the author posted a question about software crashes in the consultation module, customer service replied within about 10 seconds, informing possible causes and attempted solutions. Rapid feedback reduces waiting time during user participation and can improve users' trust in the platform. User consultation posts also support browsing and replies by other users, leveraging crowd wisdom to help solve problems and providing references for users with the same issues.

4. Guarantee Mechanisms for User Wisdom Integration in Yunzhou Knowledge Space

Guarantee mechanisms refer to mechanisms that provide material and spiritual conditions for management activities. To enhance the effectiveness and sustainability of user wisdom integration, the key is ensuring users have a high-quality experience. To this end, Yunzhou Knowledge Space has established guarantee mechanisms combining material and spiritual drivers, supported by visualization tools and multi-terminal platforms, complementary online and offline promotion, and parallel content review and user supervision. This reflects the value co-creation theory' s focus on user experience and advocacy for enhanced participation transparency.

4.1 Incentive Mechanism

Achievement Orientation to Enhance Emotional Dependence: The key to user wisdom integration is finding appropriate ways to motivate users to share their wisdom. Yunzhou Knowledge Space has launched the "Reader Flower" user level system as a driving force for user wisdom integration. The "Reader Flower" is a visual representation of user growth values and levels, distinguishing user levels through the number and size of flowers and petals. The "Reader Flower" appears next to usernames for easy access to growth data. Each Reader Flower has five petals representing activity heat statistics, number of notes, number of follows, number of collections, and reading duration. Each petal has a maximum

level of 9, with higher levels resulting in larger petals. A flower requires all five petals to reach full level before generating a second flower. Unlike commercial user level systems, Yunzhou Knowledge Space' s level advancement cannot be obtained through payment but only by completing corresponding tasks.

User level growth values follow a "pyramid" structure, with each level having quantified standards, gradually increasing in difficulty but with stable magnitude changes. First, the user level system is conducive to cultivating organizational atmosphere, preventing users with high contributions from developing negative emotions due to seeing no difference from low-contribution users, thereby attracting more users to participate. Second, the user level system allows Yunzhou Knowledge Space to cultivate some "exemplary users." The semi-public nature of the data enables these "exemplary users" to gain certain recognition and status within the platform, generating a sense of presence and belonging. Finally, the level advancement mechanism from easy to difficult can motivate users to actively contribute their wisdom, while stable magnitude changes can effectively reduce psychological pressure, giving users confidence to complete corresponding goals. As shown in :

Yunzhou Knowledge Space "Reader Flower" Growth Values

Use (times)	Notes (pieces)	Follow (times)	Collect (times)	Reading (hours)
1-1999	13-25	13-25	13-25	5-6
2000-3999	26-38	26-38	26-38	6-20
4000-5999	39-51	39-51	39-51	20-35
6000-7999	52-64	52-64	52-64	35-50
8000-9999	65-124	65-124	65-124	50-65
10000-19999	125-249	125-249	125-249	65-80
20000-49999	250-499	250-499	250-374	80-95
50000-99999	500-999	500-999	375-500	95-110
Level 9	100000-199999	1000-1999	1000-1999	500-625

Material Benefit Drive to Enhance User Stickiness: To achieve sustainable user wisdom integration, Yunzhou Knowledge Space injects participation motivation through tangible rewards. As rational individuals living in a competitive environment, users contributing their wisdom need not only psychological satisfaction but also economic satisfaction; otherwise, there is no continuous motivation to participate in such knowledge production and dissemination activities. The user level system belongs to spiritual incentives, which can promote user wisdom integration to a certain extent, but without substantial rewards for

wisdom contributors, it is difficult to exert effective long-term incentives. Therefore, Yunzhou Knowledge Space has launched the "Author Star" reward system complementary to the user level system.

The "Author Star" represents the cumulative subscription volume of works created by users. As shown in [Figure 1: see original paper], user-created topics in Yunzhou Knowledge Space are divided into six levels based on collection volume; the more collections by users, the higher the level. To encourage users to actively contribute their wisdom, Yunzhou Knowledge Space rewards topic creators with corresponding cash amounts. The higher the star level of user-created topics, the more bonus the user receives. Economic incentives promote users' willingness to integrate wisdom, stimulate participation enthusiasm, encourage users to continuously contribute their wisdom, and drive the reorganization, regeneration, and dissemination of new knowledge.

[Figure 1: see original paper] Yunzhou Knowledge Space User-Created Topic Collection Level Standards

4.2 Technical Support Mechanism

Supporting Multi-source Data Collection: To improve the efficiency of user wisdom integration, Yunzhou Knowledge Space has developed a specialized editor. This editor integrates various visual editing tools, featuring high compatibility and simple operation, supporting users to freely collect Internet, library, and local resources according to their needs, allowing users' wisdom and capabilities to be fully utilized. The editor also supports multiple format resource uploading, application, and online preview functions, eliminating differences caused by browsers and enabling users to add and edit directories and adjust formats more conveniently. The purpose of supporting multi-source collection is to provide resource guarantees for user wisdom integration, thereby enhancing user interaction experience.

Supporting Wide Sharing and Interaction: Yunzhou Knowledge Space positions itself as a social network-based knowledge service platform, supporting users with the same interests or needs to communicate through group discussions, messaging, and other methods, and sharing generated results in relevant topic areas or circles. Diversified communication channels serve as a bond between users, increasing the diversity of user communication method choices and interaction convenience.

Supporting Cross-platform Participation: With the development of the Internet and the popularization of smart devices, using multiple terminals has become common among user groups. Yunzhou Knowledge Space has constructed a PC-end system based on wired networks and a mobile application client based on wireless networks. The PC and mobile ends can achieve data synchronization, storage, and utilization. Users can access their spaces through any networked device, meeting the needs of anytime, anywhere, and any-device usage.

4.3 Promotion Mechanism

Online Achievement Display: In addition to incentives and tool support, Yunzhou Knowledge Space also cultivates users' continuous participation willingness through atmosphere creation. For example, Yunzhou Knowledge Space promotes excellent works through pushing, ranking lists, and other methods to comprehensively display the fruits of user wisdom, enhancing users' sense of recognition and achievement.

Offline User Training: User wisdom integration places high demands on users' professional capabilities and comprehensive qualities, making user cultivation very important. Yunzhou Knowledge Space operators mainly organize lectures or training sessions jointly with university libraries to teach platform functions, operation skills, and other knowledge face-to-face, helping users improve their capabilities and levels.

4.4 Information Security Mechanism

Content Review: To create a positive learning and communication environment for users, Yunzhou Knowledge Space has developed specialized programs to monitor platform usage and data access operations in real-time, such as filtering prohibited words through a filter word database. On the basis of technical monitoring, Yunzhou Knowledge Space system administrators also conduct regular inspections, promptly stopping and handling behaviors that violate national policies, laws, and platform rules. For example, in May 2018, administrators discovered malicious behavior of impersonating customer service to obtain user information and seek profits, immediately taking measures such as content deletion and account suspension against violators, while issuing announcements to remind users and inform them of specific preventive measures.

User Supervision: In many virtual communities on the Internet, due to identity anonymity, users are basically unknown to each other, making it difficult to encourage users to contribute their wisdom. Therefore, Yunzhou Knowledge Space adopts a real-name authentication system, leveraging the power of the vast user base to supervise space content. First, Yunzhou Knowledge Space has a complaint platform where users can report illegal information content and unlawful behaviors through customer service. Second, Yunzhou Knowledge Space user personal information pages have a reporting function, through which any user can report violators and upload relevant evidence. Since value is co-created, purifying the space environment also requires joint efforts from the platform and users. Through real-name authentication and user supervision mechanisms, Yunzhou Knowledge Space has effectively built an authentic digital community, achieving the goal of controlling information quality.

5. Patterns and Advantages of User Wisdom Integration in Yunzhou Knowledge Space

5.1 Pattern of User Wisdom Integration in Yunzhou Knowledge Space

Although Yunzhou Knowledge Space has some shortcomings, such as low cooperation degree with other institutions and relatively single topic retrieval approaches, its service model integrating user wisdom provides beneficial experience for deepening knowledge services. As shown in [Figure 2: see original paper], the essence of user wisdom integration in Yunzhou Knowledge Space is the platform' s utilization and transformation of user knowledge during interaction, mainly including two levels: the reorganization of users' explicit knowledge and the stimulation of tacit knowledge. Interaction is the bond connecting the platform and users, an effective method to elevate users from low-level participation stages such as platform understanding and function usage to deep participation stages of wisdom contribution, playing a core role in the user wisdom integration process. User wisdom integration is a behavior influenced by user cognition and emotion and controlled by user willingness, which cannot be achieved through coercion but depends on the platform' s active encouragement. Promotion and incentives are the main means to attract user wisdom integration, playing a "dual-wheel" driving role. Tools are the implementation methods for user wisdom integration, with users utilizing various platform-provided tools to participate in content evaluation, knowledge sharing, and knowledge reconstruction. Technology and institutions play supporting roles, maintaining the stable operation of the entire mechanism. Systematically speaking, user wisdom integration creates a new balance between the platform and users, innovating service supply methods, which to some extent changes the service value chain and generates new changes in knowledge organization, dissemination, and utilization.

[Figure 2: see original paper] Yunzhou Knowledge Space User Wisdom Integration Pattern

5.2 Service Advantages of Yunzhou Knowledge Space' s User Wisdom Integration Model

Integrating user wisdom into knowledge space services is a development trend for digital libraries and a new model where digital services and social networking combine to play a role, benefiting both users and the platform. As shown in , compared with traditional digital library services, Yunzhou Knowledge Space' s model incorporating user wisdom has undergone some significant changes.

Comparison Between Yunzhou Knowledge Space Service Model and Traditional Digital Library Service Model

Aspect	Traditional Digital Library Service Model	Yunzhou Knowledge Space Service Model
Service Subject	Platform	Platform and user collaboration
User Connection	Focus on immediacy of user resource needs	Focus on user knowledge exchange and interaction
Interaction Degree	One-to-one between user and platform	Can be one-to-one between user and platform, one-to-one between users, or many-to-many between users

First, the subjects of resource construction and service development are no longer solely responsible by the platform; users can also serve as service supply subjects. Second, user wisdom integration strengthens connections between users and between users and the platform, generating value that includes not only improved resource and service guarantee capabilities to meet user needs but also users' interactive experiences. Third, user wisdom integration expands interaction methods, providing more choices for meeting user needs. Users are no longer limited to obtaining existing knowledge resources from the platform but can also directly obtain resources from other users. These other users can be classmates, teachers, or friends, or strangers with similar interests but unknown in reality.

Through comparison, we find that user wisdom integration has changed the traditional digital library service model to some extent, creating new highlights and forms in service supply. The platform revises user positioning (letting users do what they are good at), incorporates users as a knowledge source into the service supply system, and optimizes its own positioning (resource provider and guide), reducing unnecessary contributions from users and allowing their potential to be fully realized. Throughout this process, the platform' s timely interaction promotes the integration of user wisdom and platform resources, while incentives, technology, and institutions provide effective support. These elements interact to form a positive combination.

6. Implications of Yunzhou Knowledge Space' s User Wisdom Integration for Library Knowledge Service Innovation

6.1 Attaching Importance to the Value of User Wisdom Integration with Joint Efforts from Demand and Supply Sides

Since Zhang Xiaolin proposed that knowledge service is the core capability and breakthrough point for library and information work in the new century, the

deepening and innovation of knowledge services have been focal points in academic circles. Due to limited librarian human resources and insufficient professional knowledge, advancing knowledge services requires multi-party collaboration, with users being an essential participant. According to Yunzhou Knowledge Space' s practice, to facilitate value co-creation in knowledge services, both demand and supply sides must exert efforts.

Demand-side effort refers to encouraging users to express their needs and using their domain knowledge, experience, and relevant accumulation to correct shortcomings in the knowledge service process, compensating for librarians' limitations in knowledge reserves for specific knowledge service domains. In knowledge service processes, libraries should develop such awareness: users can not only use their wisdom to evaluate, share, and reconstruct resource content but also leverage specific platforms for wisdom collisions with other users to enhance knowledge service value.

Supply-side effort means that libraries' position as knowledge service subjects remains unchanged, but their role attributes include not only being providers of knowledge service value but also guides for knowledge service value creation. In addition to selecting appropriate knowledge service directions based on librarians' characteristics, libraries must strive to create atmospheres and platforms conducive to demand-side (user) efforts, strengthen institutional construction, and allow users to realize their own interest appeals during participation. For example, Yunzhou Knowledge Space' s integrated knowledge service platform provides embedded resource retrieval, fragmented resource collection, and editing tools convenient for knowledge reorganization, all of which can serve as references for libraries when expanding knowledge service supply-side efforts.

6.2 Identifying Users' Value Orientation and Implementing Differentiated Incentive Measures

Compared with Zhihu' s user group, Yunzhou Knowledge Space' s user group is more specific, similar to library knowledge service user objects. Yunzhou Knowledge Space's incentive methods can be borrowed or adapted by library knowledge services. Influenced by management systems, libraries' incentive methods for promoting user participation in knowledge services may differ from those of commercially operated enterprises, but moderate material incentives or reasonably designed spiritual incentives are also feasible.

User incentives must consider individual differences. Yunzhou Knowledge Space' s incentive methods follow the inspiration of "two-factor motivation theory," positioning different incentive measures according to users' value orientation and differential perception of incentive methods. Currently, the main users of university library knowledge services are faculty, students, and related research groups. Considering the effects of both material and spiritual incentives, they often place greater emphasis on self-value realization in the process of participating in knowledge services. Therefore, spiritual incentive measures such as user

levels, role titles, and honorary titles can be the focus for library knowledge services to attract user wisdom integration. Based on Yunzhou Knowledge Space' s experience, whether material or spiritual incentives, reward system design should be simple and easy to understand. Reward standards should be quantified, with reasonable control over acquisition difficulty, allowing users to feel both hope and the need for effort to achieve goals, thereby enhancing incentive sustainability.

6.3 Focusing on Users' Value Experience and Establishing Diversified Interaction Mechanisms

Knowledge service value co-creation cannot be achieved without good interaction. Yunzhou Knowledge Space has absorbed advanced interaction experiences from many virtual communities, such as step-by-step guidance by stages, integrating users' social needs into the interaction process, and emphasizing user feedback. Combining Yunzhou Knowledge Space' s successful experiences, user wisdom integration in library knowledge services should focus on interaction to enhance user experience.

First, interaction should penetrate the entire process before, during, and after user participation, implementing differentiated interaction methods according to user needs at different stages, making users feel cared for and valued. Before participation, actively cultivate users' interests and strengthen their cognition; during participation, promptly guide and help users to enhance their emotional experience; after participation, strengthen relationships with users through follow-up activities to promote sustainable user wisdom integration.

Second, librarians should actively guide users through different methods. Although user wisdom integration is autonomous user behavior, guidance plays a crucial role throughout the process based on the Yunzhou Knowledge Space case. User guidance is essentially positioning guidance for user needs, aiming to establish relationships between tasks and goals. Only when users' own knowledge systems match the system architecture through guidance will users develop a sense of awareness, and the relationship between tasks and goals can become more explicit. Therefore, librarians should guide users around their needs in different scenarios to reduce cognitive and path obstacles for user wisdom integration in knowledge services.

Finally, "lead user"-driven participation is the main method for Yunzhou Knowledge Space to create an atmosphere for user wisdom integration. Compared with ordinary users, domain experts usually propose new needs earlier, and these new needs often lead trends within a certain future period, providing guidance for improving library knowledge services. On the other hand, due to their profound expertise, domain experts have high prestige among ordinary user groups, and their words and actions can influence other users' attitudes and behaviors, playing the role of opinion leaders. Knowledge service development should also actively invite domain experts to interact deeply with users to drive participation

enthusiasm.

Innovation is the fundamental means for knowledge services to maintain vitality. From concept proposal to present, the content and methods of knowledge services have continuously evolved with user needs development. This evolution contains not only the internal drive of user needs improvement and external influence of the era environment but also reflects knowledge services' self-transformation in response to user needs and external environment changes. Facing increasingly complex external environments and growing user demands in the new era, the traditional model of relying solely on libraries' own strength to develop knowledge services increasingly shows its inadequacy for the times. The Yunzhou Knowledge Space case provides new ideas for knowledge service innovation: leveraging user power to promote innovation in library knowledge service supply models. This user need- and problem-oriented knowledge service model integrating user wisdom can promote tacit knowledge transformation and compensate for librarian wisdom limitations in knowledge services. Yunzhou Knowledge Space' s practice provides theoretical reference for library knowledge service innovation, but potential intellectual property risks in the user wisdom integration process should also be emphasized. In future research, the author will specifically conduct in-depth discussions on intellectual property issues involved in knowledge service value co-creation.

References

[1] GREENH E, LAMPRON P. User engagement with digital archives for research and teaching: a case study of emblematica online[J]. Portal libraries and the academy, 2017, 17(4): 759-775. [2] WINN D, RIVOSECCHI M, BJERKE J, et al. MTL 2.0: a report on the social media usage and user engagement of the "big four" academic libraries in Montréal[J]. The journal of academic librarianship, 2017, 43(4): 297-304. [3] XIAO Long. Research on service innovation trends of university libraries supporting "Double First-Class" construction[J]. Journal of university library, 2018, 36(5): 43-51. [4] KE Ping. Post-knowledge service era: concept, horizon and transformation[J]. Library and information service, 2019, 63(1): 36-40. [5] ZHANG Xiaolin. Disruptive change and post-library era: promoting knowledge service supply-side structural reform[J]. Journal of library science in China, 2018, 44(1): 4-16. [6] KE Ping, ZOU Jinhui. Library transformation in post-knowledge service era[J]. Journal of library science in China, 2019, 45(1): 4-17. [7] GUAN Xinhua, XIE Lishan. Value co-creation perspective on customer knowledge sharing behavior[M]. Beijing: Tsinghua University Press, 2017: 25-28. [8] JIAN Zhaoquan, LINGHU Kerui, LI Lei. Evolution and prospects of value co-creation research: from "customer experience" to "service ecosystem" perspective[J]. Foreign economics and management, 2016, 38(9): 3-20. [9] RAMIREZ R. Value co-production: intellectual origins and implications for practice and research[J]. Strategic management journal, 1999, 20(1): 49-65. [10] CLAYCOMB C, DRÖGE C, GERMAIN R. The effect of just-in-time with customers on organizational design and performance[J]. The

international journal of logistics management, 1999, 10(1): 37-58. [11] WIKSTRÖM S. The customer as co-producer[J]. European journal of marketing, 1996, 30(4): 6-19. [12] PRAHALAD C K, RAMASWAMY V. Co-creation experiences: the next practice in value creation[J]. Journal of interactive marketing, 2004, 18(3): 5-14. [13] VARGO S L, LUSCH R F. Evolving to a new dominant logic for marketing[J]. Journal of marketing, 2004, 68(1): 1-17. [14] CURRAN K, MURRAY M, NORRBY D S, et al. Involving the user through library 2.0[J]. New review of information networking, 2006, 12(1-2): 47-59. [15] KROSKI E. The social tools of Web 2.0: opportunities for academic libraries[J]. Choice, 2007, 44(12): 7-17. [16] MARTY P F, KAZMER M M. An introduction to involving users[J]. Library trends, 2011, 59(4): 563-567. [17] NGUYEN L C. Establishing a participatory library model: a grounded theory study[J]. The journal of academic librarianship, 2015, 41(4): 475-487. [18] ISLAM M A, AGARWAL N K, IKEDA M. Conceptualizing value co-creation for service innovation in academic libraries[J]. Business information review, 2015, 32(1): 45-52. [19] SIDDIKE M A K, UMEMOTO K, KOHDA Y. Transformation of public libraries: co-creation of values at multipurpose community learning centers[C]//IIAI. 2014 IIAI 3rd international conference on advanced applied informatics. Los Alamitos: IEEE, 2014: 109-114. [20] SHI Yanxia, LIU Dandan. Research on library knowledge service value co-creation platform based on service blueprint theory[J]. Library science research, 2014(9): 49-53. [21] ZHANG Hui, SHI Lele. Library information resource construction from the perspective of value co-creation theory[J]. Library theory and practice, 2016(6): 50-54. [22] REN Ruirong, YIN Xue, CHEN Huilan. Constructing university library knowledge service system based on value co-creation oriented to user needs[J]. Modern intelligence, 2015(8): 7-11. [23] LI Guangping, WANG Jingyi, YUAN Run. Research on user participation in library knowledge service[J]. Library science research, 2017(10): 40-45. [24] HE Huifen. Construction of university library knowledge service interaction platform based on user behavior[J]. Library and information service, 2015, 59(S1): 199-202. [25] ZOU Guifen. Research on knowledge service innovation based on user orientation[J]. Information and documentation services, 2010(4): 73-75. [26] HE Wenmei. Library teaching support service model based on Yunzhou knowledge service system[J]. Journal of library science, 2017, 39(2): 60-63, 68. [27] ZHANG Lianfeng. Optimization measures for reference consultation service quality based on user evaluation perspective[J]. Library forum, 2012(5): 139-143. [28] YE Q, LAW R, GU B, et al. The influence of user-generated content on traveler behavior: an empirical investigation on the effects of e-word-of-mouth to hotel online bookings[J]. Computers in human behavior, 2011, 27(2): 634-639. [29] MAURIA G, MINAZZI R. Web reviews influence on expectations and purchasing intentions of hotel potential customers[J]. International journal of hospitality management, 2013, 34(3): 99-107. [30] ZHANG X F, YU Y, LI H X, et al. Sentimental interplay between structured and unstructured user-generated contents: an empirical study on online hotel reviews[J]. Online information review, 2016, 40(1): 119-145. [31] ZHOU Q Q, ZHANG C Z, ZHAO S X, et al. Measuring book impact based on multi-granularity online review mining[J]. Scientometrics, 2016, 107(3): 1435-

1455. [32] WANG Xiwei, YANG Mengqing, WEI Yanan, et al. Research on evaluation effect of mobile library user-generated content based on sentiment analysis[J]. Library and information service, 2018, 62(18): 16-25. [33] CAI Jing. Review and analysis of "Research Progress of Library and Information Science in China and Japan" [J]. Library and information, 2006(2): 138. [34] YANG Zhongdong. The importance of junior high school students' cooperative learning in mathematics classrooms under new curriculum concepts[J]. Learning weekly, 2019(3): 76-77. [35] LIU Lei, WANG Xian. User participation in library digital resource production mode under social network environment and its modification[J]. Information theory and practice, 2014, 37(4): 81-85, 89. [36] WANG Cenlan, MIRZAEI T. "Resonance value" under user participation: based on value co-creation theory[J]. Shanghai management science, 2019, 41(2): 56-61. [37] MO Qiyi, YAN Lijie. Research on "celebrity effect" and national reading promotion[J]. Library construction, 2018(7): 13-17. [38] LI Xiaowei. Exploration of university library multimedia UGC services: taking Sichuan University Library as an example[J]. Library forum, 2016(2): 101-105. [39] LI Shuning. Research on guarantee mechanism for user participation in characteristic digital collections[J]. Library and information service, 2017, 61(3): 61-66. [40] HE Shaohua, GUO Linlin. Promoting tacit knowledge sharing in knowledge-based enterprises[J]. Library and information service, 2005(6): 6-9. [41] SUN Yingyue. Reconstruction of university library knowledge space service based on "Yunzhou" [J]. New century library, 2017(9): 35-39. [42] LU Haodong. Model and thinking of user information literacy education service based on "Yunzhou" [J]. Library science research, 2017(1): 16-20. [43] ZHANG Xiaolin. Toward knowledge service: finding the growth point for library and information work in the new century[J]. Journal of library science in China, 2000(5): 30-35. [44] WANG Xiuhong, LU Zhangping, YUAN Run. University library knowledge service model for collaborative innovation: analysis of patterns, models, and systems[J]. Information and documentation work, 2013(6): 80-84. [45] ZHENG Dejun, TONG Wanju, LI Yongming, et al. User development and participation mechanism of Zhihu community and its enlightenment to library knowledge service[J]. Library and information service, 2018, 62(1): 69-75. [46] WU Wenzhen. User participation in value co-creation[M]. Shenyang: Northeastern University Press, 2016: 155. [47] BROWN J S, DUGUID P. Knowledge and organization: a social-practice perspective[J]. Organization science, 2001, 12(2): 198-213.

Author Contributions:
Li Yang: paper writing;
Zheng Dejun: conceptualization and framework design, paper revision.

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