User Development and Participation Mechanisms in the Zhihu Community and Their Implications for Library Knowledge Services (Postprint)

Authors: Zheng Dejun, Tong Wanjun, Li Yongming, Han Zhengbiao

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Abstract

[Purpose/Significance] Zhihu is a successful knowledge-based Q&A community. Summarizing its successful experience from the perspective of user participation in value co-creation helps provide reference for the in-depth advancement of library knowledge services. [Method/Process] Using case analysis method, this study analyzes Zhihu's user development path from three aspects: initial stage strategy, expansion stage strategy, and user stickiness retention strategy; and examines Zhihu's user participation mechanism from three aspects: user participation in question editing, user participation in content quality evaluation, and user participation in knowledge transmission. [Results/Conclusion] The enlightenment of the Zhihu case for library knowledge services can be summarized into three aspects: recognizing the value of users in library knowledge services and striving to develop "lead users"; emphasizing the guidance mechanism for users and creating a favorable participation atmosphere; and enhancing user experience and optimizing the library knowledge service platform.

Full Text

Preamble

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Zheng Dejun, Tong Wanju, Li Yongming, Han Zhengbiao
Department of Information Management, Nanjing Agricultural University, Nanjing 210095

Abstract

[**Purpose/Significance**] Zhihu is a successful knowledge-based Q&A community. Summarizing its successful experience from the perspective of user participation in value co-creation can provide valuable insights for advancing library knowledge services. [**Method/Process**] Using case analysis, this study examines Zhihu's user development path through three aspects: initial stage strategy, expansion phase strategy, and user retention strategy. It also analyzes Zhihu's user participation mechanisms from three dimensions: user participation in question editing, user participation in content quality evaluation, and user participation in knowledge transmission. [**Result/Conclusion**] The implications of the Zhihu case for library knowledge services can be summarized in three areas: recognizing the value of users in library knowledge services and actively developing "lead users"; emphasizing user guidance mechanisms to foster a positive participation atmosphere; and enhancing user experience while optimizing library knowledge service platforms.

Keywords: Zhihu; User Participation; Value Co-creation; Library; Knowledge Service
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Introduction

Zhihu is a social Q&A community built on user participation, modeled after Quora, that allows users to post questions, provide answers, contribute diverse wisdom, and share knowledge around common topics online. Unlike online encyclopedias, users gain not only factual statements from Zhihu but also personalized insights, knowledge, and experiences from other users. Due to its unique positioning, Zhihu has achieved rapid development and user recognition since its launch in January 2011. As of March 2017, Zhihu had 69 million registered users, 250,000 topic areas, and had generated 15 million questions and 55 million answers [1]. Through years of development, Zhihu has gradually formed distinctive user-generated content (UGC) characteristics [2], a widely recognized content screening mechanism [3], user incentive methods [4], and an information organization model based on topic-structured tags [6], all embodying the essence of user participation as the core of value co-creation.

From the perspective of library management and services, research on Library 2.0 based on user participation has also gained attention [7]. OCLC encourages users to provide comments, editing modifications, and social bookmarks in cataloging [8]. User participation in digital reference services [9], library acquisition business [10], and library digital resource construction [11] is considered feasible, with participation types including evaluation-based participation, consultation assistance, content contribution, resource description [12], opinion solicitation, and system/content maintenance [13]. In recent years, the library community has begun to focus on user participation in library marketing prac-

tices [14], attracting users to reading promotion [15], and involving users in the design of library service spaces and service projects [16]. Despite these research achievements and practical explorations, cases like Zhihu that promote deep user participation remain rare, and user participation is scarcely seen in research on knowledge services, which libraries value most. Zhihu's successful practices in user participation provide valuable experience for deepening library knowledge services, and systematically 梳理 ing Zhihu's user participation methods can help inspire and improve library knowledge service approaches. This paper analyzes Zhihu's user development path and participation mechanisms to offer new insights for advancing library knowledge services.

2. Zhihu's User Development Path: From Elite Users to Mass Users

2.1 Initial Stage Strategy: Starting with Elite User Selection

UGC is Zhihu's primary foundation. In the Zhihu community, users can be both questioners and answerers. Before Zhihu's launch, many online communities in China had users of uneven quality, with many simply flooding discussions with irrelevant posts, rants, and complaints. Such users could not guarantee the production of high-quality content through UGC. Examining Zhihu's growth reveals that choosing a celebrity route and focusing on developing elite users was its initial user development strategy, aimed at gaining necessary popularity while solving the challenge of "growing high-quality UGC content." The specific approach was: in the early stage, targeting the Internet field that might attract online users' attention, Zhihu's founding team invited celebrities and experts with the strongest spirit of sharing and professional knowledge to join Zhihu through their own networks [17]. These celebrities and experts had solid knowledge backgrounds, and some already possessed significant influence, such as Kai-Fu Lee, Lei Jun, and Ma Huateng. Early users were granted invitation codes to continue inviting "professional" individuals they deemed suitable to generate and contribute content. This invitation-based approach to developing elite users, encouraging them to answer questions they followed, excelled at, and could respond to well, created a relatively authentic, rational, and friendly discussion atmosphere. This user development method was implemented for two years, providing time for Zhihu's community operations team to establish community operation norms, thus forming Zhihu's distinctive knowledge community style. As Zhihu's user base grew, topic areas multiplied, and many excellent Q&A contents were accumulated, Zhihu's reputation gradually formed. Some previously obscure but excellent pioneers in their professional fields grew into respected Zhihu "big Vs" through the Q&A community, attracting more users with professional knowledge backgrounds and promoting Zhihu's cyclical, upward user development.

2.2 Expansion Stage Strategy: Promoting Mass User Growth

Although Zhihu's initial elite user invitation system 沉淀 ed some high-quality Q&A content, limited user scale meant it remained a niche online community, and Zhihu's Q&A content began to show homogenization issues, with gradually insufficient content diversity. Expanding user scale became Zhihu's choice for a new development phase. In March 2013, Zhihu transitioned from invitation-only to public registration. Leveraging its existing influence, registered users rapidly climbed from 400,000 to 4 million in less than a year [17]. While the surge in popularity increased Zhihu's activity and attracted groups with different values to engage in viewpoint debates, the influx of uneven-quality users led to explicit "evil-doing" space. Some users resorted to verbal abuse at the slightest disagreement, some Q&A content became "watered down" and declined in quality, Zhihu's original Q&A style was disturbed, flooding and advertising began to emerge, and some harassed and unreasonably questioned Zhihu big Vs left the community [18]. How to maintain an atmosphere of rational discussion became an unavoidable challenge for Zhihu. To address this issue, Zhihu made active efforts in retaining old users and developing new ones, which can be summarized in two aspects: First, adhering to Zhihu's core style positioning, relying on its technical team to upgrade platform functions, such as allowing users to "fold" substantively meaningless watered-down content, adding a "complaint" function to resist spam and unfriendly behavior, advocating users to jointly maintain community norms [19], optimizing user participation mechanisms, and hosting roundtable discussions and offline gatherings to guide and regulate user information behavior, with the goal of enhancing old users' retention confidence. Second, based on a correct understanding of community user mobility, encouraging excellent new users to gain recognition. Based on experience using and observing Zhihu, the platform provides more display opportunities for Q&A from newly registered users, encourages interaction and connection between new users and between new and old users, and some new users in emerging topics gradually grow into Zhihu big Vs under Zhihu's cultivation mechanism. According to information released by Zhihu's founder, over a 14-month period from June 2013 to July 2014, the monthly retention rate of answering users on Zhihu pages remained above 80% [17].

2.3 User Retention Strategy: User Incentives and Experience Optimization

2.3.1 Content Quality-Centered User Incentives Zhihu pays close attention to "what users can gain." Zhihu believes that if User A helps User B solve a problem with high quality, User A should naturally receive User B's approval and thanks, while also increasing the opportunity to be discovered by other users. Corresponding incentive methods basically revolve around the output of high-quality content: (1) Encourage users to ask high-quality questions and answer them high-qualityly, then receive "approval" and "thanks"; (2) Encourage each user to conduct Q&A in their areas of expertise, and through the com-

bination of operational strategies and algorithmic recommendations, give newcomers' good answers more exposure opportunities and help newcomers quickly integrate into the community atmosphere [20]; (3) Continuously improve the algorithm on the homepage information flow to make high-quality content and corresponding users more easily discoverable, recommend users to find like-minded users, and allow users to obtain continuous instantaneous incentives through likes and interactions; (4) Provide more customized privileges on personal pages for users who contribute high-quality professional knowledge, offering personal promotion, reputation building, social networking, publishing, obtaining commercial clients, recruitment, job seeking, and entrepreneurial opportunities [21]. For example, helping excellent answerers disseminate their content through the weekly "Zhihu Selection" sent to users; regularly sending "Zhihu Newsletter" to news media to assist media interviews with excellent answerers, leveraging media power to spread users' insights in their personal fields; recommending Zhihu users to participate in various industry salons, public speeches, and other offline activities [22] to promote users to establish interest-based connections and help them gain recognition from others.

2.3.2 Continuously Improving User Experience Considering user experience feelings, ensuring Zhihu community's simplicity and cleanliness, and allowing users to self-correct behavior. Unlike Wikipedia, Zhihu community incorporates users' social elements, but the essence of social needs is expression, recognition, and communication discussion. Therefore, asking questions and obtaining credible answers are Zhihu users' primary concerns. Corresponding to users' core needs, Zhihu tends to use a simple community style, tries not to disturb users during use, and designs service platform interfaces and functions as close to users' own habits as possible [17]. To resist unfriendliness and cyberbullying between users, Zhihu encourages users to report others' unfriendly behavior at any time. Zhihu's online "friendliness score system" displays users' friendliness scores, which users can check themselves. If a user's friendliness score falls below a specific value, the user will be restricted from using some Zhihu community functions, such as commenting and private messaging. The purpose of adopting the friendliness system is not punishment but guidance, so Zhihu has designed multiple recovery channels for users with self-correction willingness and behavior.

Zhihu also facilitates users and supplements various user demand scenarios. To make it convenient for users to find Zhihu content, Zhihu actively pushes high-quality content through multiple forms. For example, since 2015, Zhihu has cooperated with Sogou Search to enhance its search function, making it easier for users to find content they want to see and obtain a better community usage experience [23]. Zhihu has set up columns to meet users' vertical field knowledge output needs and personal brand building, and added favorites to meet users' knowledge organization needs [21].

Zhihu fully respects users. First, it respects users' original knowledge copyright.

For user-generated content, Zhihu has issued specific community content management norms to regulate reprinting behavior within the community, emphasizing that reprinted content must be labeled with the original author's name, original source information, and original link. Zhihu has developed a content authorization platform and established a dedicated infringement complaint submission channel for content infringement by other media [24]. Second, it respects user privacy. For private messages between users on Zhihu, Zhihu believes that no one other than the message recipient can view the private message content, including Zhihu team members, with corresponding measures being technical encryption to make private message content unviewable [25].

3. Zhihu's User Participation Mechanisms: Guiding Users in Value Co-creation

Zhihu's UGC mechanism is an online version of the brainstorming method, where multiple users with similar professional backgrounds can conduct scattered yet collective knowledge sharing and content contribution around specific common topics. "One person speaks, everyone can review, modify answers, agree or disagree, express thanks, and comment. If someone doesn't follow this default discussion protocol, they will be marked as 'not helpful,' 'folded,' and 'reported' " [26]. This represents the excavation and utilization of users' tacit knowledge. The Zhihu platform precipitates users' tacit knowledge to form its own knowledge base, then uses the existing knowledge base to continue interacting and accumulating new knowledge resources on new questions, forming a relatively special UGC cycle. This is a value co-creation process of knowledge services, whose good user participation mechanisms realize users' sense of social participation and satisfy users' creative experiences. Zhihu community's development and growth also benefit from this value co-creation process under user participation.

3.1 User Participation in Content Co-editing

Zhihu's content comes from questions and answers. In addition to users contributing their own questions and answers, Zhihu also encourages users to participate in content co-editing, including question editing and topic theme construction.

3.1.1 Allowing User Participation in Question Editing Considering that each user's level and ability differ, ensuring clear questions and avoiding ambiguous expressions are necessary to stimulate other users' interest in answering. Zhihu community allows users to participate in question editing in various ways: allowing modification of question descriptions, allowing modification of question topics, allowing redirection of duplicate questions, allowing writing of topic descriptions, allowing addition of topic images, allowing application for topic merging or deletion, and allowing organization of topic parent-child relationships. These methods can promote users to modify questions to be more

conventional and universal to meet more users' needs and interests. For example, Zhihu encourages modifying the question "If you were Yahoo's CEO, what would you do?" to "What should Yahoo's CEO do to revitalize the company?" [27]. User participation in question editing may sometimes result in questions being modified to become meaningless or even vandalized. To avoid this phenomenon, Zhihu has published question editing principles, requiring users not to change the original meaning of questions, restricting public editing of questions that have been created for a long time or have mature discussions, and setting certain threshold requirements for users participating in question editing. Some public editing operations require users to have more than 5 answers with 5 approval votes on Zhihu [27]. These measures ensure and guide the healthy development of UGC.

3.1.2 Allowing User Participation in Topic Knowledge Theme Construction Questions asked by Zhihu users belong to certain topics within certain fields. Topics are the entry points for user questions and answers. Zhihu encourages users to participate in topic categorization (for example, categorizing the question "Which is closer to Amazon, JD.com or Amazon China?" under the "e-commerce" topic), while Zhihu also uses certain technical methods to correct topics that deviate from users' autonomous categorization based on existing knowledge bases. From Zhihu's launch to the present, the topic system edited by user participation has gradually grown and has basically covered most content that can be discussed on Zhihu. Currently, the topic structure supported by user participation editing has become relatively stable. Although Zhihu's topic knowledge system presents a form combining topic categorization and theme tags, which cannot be considered a strict classification system and still has deficiencies in systematicity and logic, this topic knowledge system is constructed and generated by users, embodying the user-led principle and providing reference significance for the organization and management of user-generated knowledge resources [6].

3.2 User Participation in Content Quality Evaluation

As Zhihu developed from an elite user niche community to a mass user community, its biggest risk was the loss of control over spam information and the dilution of high-quality content. To address this risk, Zhihu attempted to summarize the universal characteristics of excellent content and strengthen content quality monitoring through its technical expertise and filtering mechanisms. Specific measures include: strengthening manual review mechanisms for user content; improving machine algorithms by adding relevance factors, using machine learning to purify users' personal homepage information flows [28], screening out repetitive, meaningless questions and spam content; and relying on users to judge high-quality content and assist in spam cleanup. Among these, user participation in high-quality content judgment is of extraordinary significance for improving overall content quality in the Zhihu community.

In the Zhihu community, users can evaluate existing answer content, express "thanks" for satisfactory answers, mark unsatisfactory answers as "not helpful," and click "agree" or "disagree" to indicate their positions. The number of "agree" and "disagree" votes for an answer is displayed in real-time next to the text content. This user participation in content quality evaluation becomes the basis for other users to decide whether to adopt or seriously read the answer. Observing questions and answers on Zhihu reveals that when an answer to a question receives a certain number of "not helpful" judgments from users, it will be included in the answer "folded" area as useless content. Zhihu also adds a user "report" function in its product form. For advertising information, flooding, and other user behaviors that do not comply with community norms, other users can feedback to Zhihu's operations team through reporting private messages or reporting inappropriate answers, and the operations team will handle them through corresponding technologies. These mechanisms and rules effectively ensure that only relevant high-quality content appears in users' vision.

3.3 User Participation in Knowledge Transmission

Zhihu, which relies on users for knowledge creation, also incorporates much wisdom in knowledge transmission, encouraging user participation. Zhihu allows users to "share" every answer under a question to other platforms, such as Weibo, WeChat, and other social media. This sharing method that breaks self-limitations and transmits knowledge attracts considerable traffic of new users to Zhihu, thereby promoting the creation and accumulation of more new knowledge.

With user support, Zhihu's methods for disseminating and promoting high-quality content on its platform are also worth summarizing. For example, Zhihu established its official Weibo account "Zhihu," whose operation style is also content-oriented, setting up sections like "Science Rumor Debunking" and "Hotspot Tracking" to push high-quality professional content from Zhihu to massive Weibo users and optimize Weibo dissemination content based on user interaction results. Additionally, relying on high-quality content on its platform, Zhihu has released various reading products and platforms such as "Zhihu Selection," "Zhihu Daily," "Zhihu Weekly," "Zhihu Salt" series, "Zhihu Weekly Plus," Dudu Daily, "Zhihu Bookstore," and "Zhihu Live," expanding knowledge transmission scope through content promotion cooperation with Fresh Fruit, Zaker, NetEase Cloud Reading, typical portal news clients, and professional search engines. Among these knowledge transmission new products, "Zhihu Selection" relies on Zhihu editors to select high-quality content. "Zhihu Daily" adds user recommendation rights based on editorial selection, encouraging users to recommend high-quality content and forming "theme dailies" in respective fields based on users' professional knowledge backgrounds, which are quite popular among users. Each book in the "Zhihu Salt" series has its first draft from users' answers and column articles published on Zhihu over the past few years. After article en-

tries are selected, relevant users revise and supplement the first draft according to the special scenarios of e-reading, and then Zhihu provides professional proofreading, editing, and design support before launching the book to the market [29]. Among most reading products and platforms launched by Zhihu, "Dudu Daily" has the deepest user participation degree. "Dudu Daily" adopts a UGC model of "everyone is an editor." Every user in Zhihu can recommend content they like and can classify recommended content to form "theme dailies," making it convenient for users to find recommended content that matches their interests [30]. User-recommended content is no longer limited to the Zhihu community but can come from relevant content outside the Zhihu community for other users to follow and read. This approach has made positive attempts in personalized knowledge services.

4. Implications for Deepening Library Knowledge Services

4.1 Deeply Recognize the Value of User Participation in Knowledge Services and Strive to Develop "Lead Users"

From Zhuang Ziyi's formal proposal in 1983 that "the essence of library work is knowledge service" [31] to Zhang Xiaolin's positioning of knowledge service as the core capability of library and information work in 2000 [32], libraries have actively and eagerly embraced knowledge service work. Many library information service methods (such as lecture services, novelty retrieval, subject services, institutional repository construction, etc.) have been labeled as "knowledge services," and librarians' knowledge service capabilities have been discussed repeatedly [33-34]. However, years of practice have proven that limited by library management systems, talented personnel, and technical service levels, libraries cannot promote knowledge services without multi-role collaborative participation and multi-domain collaborative design activities [35], and users will be an essential and important participant. Existing library user participation research mainly stays at the level of information resource management, and the value role that library users can play in absorbing user participation in knowledge service work has not been well recognized.

Based on Zhihu community experience, typical knowledge service processes cannot be separated from the excavation of user value. In the value co-creation process of knowledge services, users can ask questions, answer, debate, evaluate, or be evaluated. Users should be regarded as an important driving force for library knowledge service innovation [36], and it is necessary to systematically recognize users' value in knowledge services: (1) Users are recipients of library knowledge services. This mainly means users can evaluate library knowledge service levels and capabilities based on their own cognition and experience, and this feedback evaluation in turn promotes libraries to improve and adjust knowledge services. (2) Users are resource providers for knowledge services. Library users generate much behavioral data when using library services, such as personal information, resource utilization, network access logs, and other objective data, as well as unstructured data that may reflect usage tendencies and

emotions, such as information consultation, feedback, and subjective comments. Libraries can orderly process and mine relevant data to profile users' knowledge service needs and characteristics, providing decision-making support for knowledge service resource construction and service optimization. (3) Users are value co-creators of knowledge services. K. Harbo [37] and Zhang Xiaolin [38-39] both believe that library users are not passive recipients or consumers of innovative services but possess certain innovation literacy and participation willingness. M. A. Islam et al. [40] proposed a value co-creation framework for academic library service innovation, where libraries can invite users to jointly participate in project management, information literacy, library website design, and other work. Their empirical research results show that value co-creation is crucial for libraries' continued success. Combining the Zhihu case, in library knowledge services, users can not only participate passively but also actively. Librarians' important task is to cultivate the vision to discover "user value," treat users as equal subjects, identify them at different stages of user participation, and guide users from passive acceptance to active participation, from meeting needs to creating value.

User participation in library knowledge services requires libraries to strive to cultivate exemplary "lead users." Zhihu's success is inseparable from the role of lead users (Zhihu big Vs). In promoting Library 2.0 practice, libraries have actually recognized the exemplary role of lead users. If they want to further deepen and advance problem-solving-oriented knowledge services, participation from advanced users with specialized field backgrounds and knowledge is essential. However, for library services, attracting advanced users with specialized field backgrounds and knowledge is not easy. Taking this step requires designing effective user participation incentive mechanisms. This step is not easy to take but still needs to be taken.

4.2 Emphasize User Guidance in the Participation Process to Create a Positive Participation Atmosphere

From the Zhihu case, we can see that relying on user participation can achieve value co-creation in knowledge services. However, without good user guidance mechanisms, users may become destroyers of knowledge service value. From typical surveys of Library 2.0 practice, we can find that users may post spam information and inappropriate content. Among surveyed library website constructions, 36% of libraries reported needing to spend time deleting user spam information when reviewing user-contributed content, and 51% of libraries needed to respond to users abusing websites by adding inappropriate content [41]. According to research by J. A. Fredricks et al. [42], user participation can be subdivided into three aspects: cognitive participation (affecting individual knowledge structure, high-level thinking, and skill improvement), behavioral participation (following requirements for discussion and communication), and emotional participation (gaining sense of value, belonging, and achievement). Zhihu's success illustrates that correct guidance mechanisms can promote users' cognitive and

behavioral participation, thereby affecting users' emotional participation and promoting better value co-creation by users. Library knowledge services can learn from Zhihu's user guidance practices in the user participation process to create a good user participation atmosphere, specifically from the following aspects:

4.2.1 Firmly Uphold Quality Content as the Core Guiding Philosophy in User Participation Quality content is the representative characteristic of knowledge service vitality. Library knowledge services can learn from Zhihu's initial user development experience: preferring less but better content over more but worse content, and positioning knowledge services well. Learning from Zhihu's experience, library knowledge service platforms should be user-oriented from the start, encouraging user participation, conducting benign interactions with users, gathering user experience, integrating user-provided information resources, and combining user evaluation and usage data for quality content precipitation and discovery.

4.2.2 Properly Position Librarian Roles and Identify Effective Incentive Methods Specialized personnel or librarians engaged in knowledge services can be called knowledge service guides. In user-participated knowledge service projects, learning from Zhihu's successful experience, they should actively recommend popular, high-quality, and latest content so that new users can see the essence of the service community at first glance. Knowledge service guides should also be topic guides and atmosphere regulators of the service community. To encourage user participation, knowledge service guides need to continuously stimulate user participation interest, enhance user participation experience, and identify effective user incentive methods. For commonly used methods such as virtual titles (like point levels, user medals, V-honors, etc.), material rewards (gift distribution), emotional incentives (receiving likes, others' comments and replies, followers, homepage recommendations, etc.), and competitive incentives (ranking settings) [43], selection or optimization should be made through user surveys and practice.

4.2.3 Establish User Participation Rules and Encourage Self-behavior Correction In addition to incentives, user participation in knowledge services requires some commonly followed rules for guidance. Zhihu provides many specific rules for user participation, such as question co-editing rules and unfriendly behavior determination rules, which can all be referenced in library knowledge service mechanisms.

4.3 Enhance Good Experience in User Participation Processes and Optimize Platforms

Zhihu's successful experience shows that user-approved knowledge services cannot be separated from support from a good knowledge service platform. Currently, limited by library talent and technical capabilities, most libraries have

not been able to develop knowledge service platforms with independent intellectual property rights. However, libraries can build public knowledge service platforms through library consortium forces (such as CALIS, JALIS, etc.) [44-45], leverage specialized information resource intermediary enterprise service platforms (such as Superstar Company's Yunzhou Knowledge Sharing Space) [46], or construct their own knowledge service communities through super social platforms like Weibo and WeChat [47]. This trend is currently emerging. Taking library WeChat service platforms as an example, even limited by the WeChat super platform itself, libraries still have certain autonomy in platform design and optimization for their official accounts. Learning from Zhihu's successful experience, libraries can optimize knowledge service platform user experience from the following aspects:

4.3.1 Optimize Platform Design The knowledge service platform is the medium for user participation. Enhancing platform attractiveness to users requires both functional adaptation to user needs and attention to interface layout and color display. The library community has already achieved many results in user-perceived service quality research, finding optimization control points from functional quality, usability quality, and user interaction quality [48]. Learning from Zhihu, library knowledge service platforms also need to strive to provide more user participation entry points and provide effective help documentation for user self-cultivation and self-evolution.

4.3.2 Value User Emotions User emotions can be classified as a branch of emotional participation in user participation research. Usage emotions come from users' experience with the knowledge service platform and are the satisfaction, sense of value, and belonging generated after cognitive and behavioral participation. Based on Zhihu's successful experience, emphasis can be placed on two perspectives: respecting users and optimizing interaction methods. Respecting user intellectual property rights and user privacy in the Zhihu community can be referenced and promoted, and users who have made significant contributions must be given special attention and influence diffusion. In terms of interaction methods, supporting rich and diverse interaction forms such as "likes" and "approval," simplifying user operation steps and levels, allowing free switching between users and knowledge service guides and between users, and enhancing users' discourse power and platform operation control sense in knowledge services.

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