

Postprint: Process Reengineering of Reference Services in University Libraries from the Perspective of Media Convergence

Authors: Yan Zhouzhou, Zhan Qingdong

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

Abstract

[Objective/Significance] By reengineering the reference consultation service process, this study aims to increase user stickiness, improve service quality, and thereby expand library influence.

[Method/Process] Adopting the literature review method, this research systematically identifies problems among users, librarians, consultation platforms, and information resources within the reference consultation service process. It introduces the concept of media convergence and utilizes user profiling technology to attempt information pushing before users generate questions.

[Results/Conclusion] Breaking away from the traditional reference consultation service model of “question first, answer later; no question, no answer,” this study constructs a novel “answer→question→answer” service process, providing a new implementation pathway for reference consultation work and offering recommendations for reference consultation process reengineering.

Full Text

Research on the Process Reengineering of University Library Reference Services from the Perspective of Media Convergence

Yan Zhouzhou, Zhan Qingdong

Fuzhou University Library, Fuzhou 350116

Abstract: [Purpose/Significance] This study aims to increase user stickiness and improve service quality by reengineering the reference consultation service process, thereby expanding the library’s influence. [Method/Process] Through

literature research, this paper identifies problems among users, librarians, consultation platforms, and information resources in the traditional reference consultation service process. It introduces the concept of media convergence and utilizes user portrait technology to attempt information push before users encounter problems. [Result/Conclusion] The study breaks the traditional reference consultation service model of “ask first, answer later; only answer when asked,” and constructs a new service process of “answer→ask→answer,” providing a new implementation path for reference consultation work and offering recommendations for reference consultation process reengineering.

Keywords: media convergence; reference service; process reengineering; user portrait

Classification Number: G250 **DOI:** 10.13266/j.issn.0252-3116.2021.03.008

In the all-media era, continuous development of new internet technologies and applications has given rise to emerging communication forms such as self-media, independent media, social media, all-media, and integrated media [1]. Traditional media (medium) has suffered strong impact, triggering tremendous transformation in both traditional and emerging media. Newspapers, radio, television, the internet, and mobile phones—originally distinct media—have quietly embarked on a major convergence known as “media convergence” (Media Convergence). This term was first proposed in 1978 by Nicholas Negroponte, founder of the MIT Media Lab, who defined it as “the trend of various media presenting multi-functional integration” [2]. In 2005, Professor Cai Wen from the School of Journalism at Renmin University of China introduced and promoted Western media convergence theory [3]. In recent years, this concept has attracted the attention of national leaders and risen to a national strategy. In January 2019, the Political Bureau of the CPC Central Committee held its 12th collective study session on the all-media era and media convergence development [4], where General Secretary Xi Jinping emphasized that accelerating media convergence and building all-media is a new challenge we face today.

Moreover, the weak interactivity and low efficiency of traditional reference consultation methods have seriously affected library information service levels. Therefore, this paper seizes the development opportunity of media convergence, adopts user portrait technology, rethinks and redesigns the entire reference consultation process, breaks the traditional model of “ask first, answer later; only answer when asked,” and creates a new service process of “answer→ask→answer.” This aims to realize the vision of services preceding users, thereby meeting users’ precise information needs, improving information dissemination efficiency, and ensuring high-quality operation of the entire reference consultation process.

1. Media Convergence and Reference Consultation Process Reengineering

1.1 Media Convergence Brings New Development Opportunities to Reference Consultation

The rapid and deep development of media convergence has promoted the continuous progress of new media, all-media, and integrated media, safeguarding the improvement of libraries' cultural knowledge dissemination and providing new inspiration and paths for expanding business scope and updating service methods. You Hai [5] proposed that libraries should fully utilize new media platforms to connect and interact with users, allowing them to participate in digital resource construction, achieving deep excavation and aggregation of resources, and solving existing problems in library digital resource construction. Wang Zhijun [6] identified current issues in university library service marketing and, based on media convergence, summarized the advantages of WeChat, Weibo, and short video service marketing to formulate service marketing plans. B.B. Imler [7], in a survey of the top 100 universities in the United States, found that 92 university libraries had implemented real-time chat consultation services, concluding that real-time chat has occupied an important position in American library reference consultation service methods.

Thus, whether through user participation in resource construction and knowledge contribution to solve the dilemma of single resource sources and insufficient content in traditional reference consultation, or utilizing the advantages of social media such as WeChat and Weibo for service promotion and platform publicity to change the embarrassing situation of low public awareness and low user utilization of traditional reference consultation, or even building a media convergence center to connect various media, revitalize various resources, produce different products, and serve different users, media convergence can fully leverage its strong permeability, scene adhesion, social empowerment, and reconstruction of information transmission spatiotemporal relationships to profoundly change the information ecology and communication pattern [8].

1.2 The Necessity of Reference Consultation Process Reengineering

Reference consultation services provide user-oriented frontline services by mobilizing resources and tools, playing important roles in resource utilization, service promotion, user education, and guidance between libraries and users. However, on the one hand, current library process reengineering mainly focuses on overall library business or research areas such as information services and knowledge services, with insufficient and unsystematic research on reference consultation service processes. On the other hand, existing information service process models or knowledge service models proposed by scholars always start from user questions and tend to be passive services, failing to shift to proactive services. For instance, Fan Wei and Li Guihua [9] proposed a knowledge service process prototype based on users' knowledge seeking process, pointing out that the role

of consultation librarians in users' knowledge activities is mainly to remain online at all times, passively waiting for users to initiate consultation while maintaining channel 畅通. Liu Juxia [10] approached from the user perspective, fully considering user information behavior for institutional setup, but her proposal was relatively general and requires further research on information deepening and refinement.

In summary, as a gateway service of libraries, the importance of reference consultation is evident. However, the reference consultation process not only suffers from problems such as insufficient librarian initiative, inadequate service marketing, users' lack of awareness of the service, and ubiquitous user demand research [11], but also lacks systematic research attention from scholars on reference consultation service process reengineering. Therefore, process reengineering for library reference consultation is a necessary and urgent research topic.

2. Reference Consultation Service Process Reengineering Model

2.1 Model Objectives and Construction

2.1.1 Model Objectives The rapid development and maturation of big data, cloud computing, Internet of Things, 5G, artificial intelligence, and other technologies, along with the development trends of resource intensification, rationalized structure, differentiated development, and efficient collaboration, as well as the integrated development of traditional and emerging media, have unswervingly promoted deep media convergence and facilitated the construction of an all-media communication system, accelerating the transformation of traditional media industries. Information dissemination methods, channels, and patterns have all undergone profound changes. Similarly, as an important member of the information dissemination industry, libraries are also transforming their reference consultation services to improve the fit between service content and user needs and rethinking and redesigning service processes, based on changes in information production, user information behavior, and reading habits. Therefore, the objective of constructing a university library reference consultation service process reengineering model is: based on the entire service process, oriented toward improving service quality, centered on user needs, utilizing advanced technologies such as user portraits, 5G, cloud computing, artificial intelligence, and big data, and through the reference consultation service platform, classifying and integrating diverse resources and consultation service products in the media convergence environment, reorganizing and redesigning the logical relationships among resources, users, librarians, and platforms in the process, and building a dynamic and diversified reference consultation service process reengineering model from the perspective of media convergence to promote the high-quality and efficient development of university library services.

2.1.2 Model Construction “One should seize the momentum, and timing must not be lost.” Facing the significant opportunity of deep media convergence development, university libraries, as the school’s literature and information center, should follow the trend and seize the moment, introduce the concept of media convergence, seek new development models, thoroughly rethink and redesign the entire reference consultation process, and implement process reengineering, thereby improving information dissemination efficiency, meeting users’ precise information needs, and ensuring high-quality operation of the entire reference consultation process.

Therefore, this paper introduces the concept of media convergence into reference consultation services, based on the entire service process, thoroughly rethinking and redesigning the entire reference consultation process to implement process reengineering. Specific manifestations include: building a media convergence center to optimize the consultation platform, promoting the integration and interoperability of traditional and digital consultation, and achieving multi-party communication among resources, users, and consultation librarians on one platform; adhering to content as king, strengthening resource construction, deeply cultivating vertical fields such as knowledge and intelligence on the basis of meeting users’ ubiquitous consultation needs, producing ace products and brand services with scientific, practical, and systematic qualities to win users with high-quality content; strengthening internet thinking and audience thinking, repositioning the audience perspective, using user portrait technology to grasp user characteristics, taking the initiative, and making precise recommendations, profoundly changing the traditional reference consultation model of “ask first, answer later; only answer when asked” —a one-way communication method with passive audience acceptance—and establishing a brand-new “answer→ask→answer” service model, as shown in Figure 1 [Figure 1: see original paper].

2.2 Path Explanation

2.2.1 Key Path: Answer→Ask→Answer First, the key path of this model is based on user portrait technology to proactively predict user needs, clarifying both common and personalized user demands. Before users begin to consult questions, through the media convergence center, resources that can meet their knowledge needs are continuously provided to users in the form of hyperlinks, self-media push, etc., effectively completing the proactive “answer.” Second, when user portrait technology cannot achieve comprehensive and precise analysis of user information needs, users can also use the media convergence platform to raise questions through telephone, email, web forms, WeChat, Weibo, message boards, and other means to express their “ask” [12]. Then, consultation librarians accept user questions and answer users based on their own knowledge and work experience or by consulting relevant reference books, databases, network information resources, etc., completing the “answer.” Finally, consultation librarians combine user information, consultation questions, and answers to update

the reference consultation database, grasp demand patterns, classify user levels, mine and predict user needs, and produce characteristic and targeted information products and knowledge products, once again implementing a new round of information push, forming a virtuous cycle of “answer→ask→answer” and creating a high-quality, efficient, interactive, and flowing information ecosystem.

2.2.2 Branch Paths: Answer→Ask and Ask→Answer

- (1) First Branch Path: Answer→Ask. To address the problems of low public awareness and low user utilization in traditional reference consultation services, this model adopts a proactive strategy of attracting with “answer” and promoting “ask” through “answer.” While meeting readers’ practical needs, this strategy retains old users and promotes reference consultation to vigorously develop new users. Specifically, the “answer→ask” path focuses on recommendation, using the media convergence information platform to take rich, diverse, novel, and varied information resources from traditional and emerging media as data support [13], matching basic information products of common knowledge and advanced knowledge products of specialized intelligence with users’ common and personalized needs. It adopts arbitrary combinations of expression forms such as text, pictures, sound, and video, and uses an integrated, multi-functional media convergence platform to complete information push, truly realizing the transformation from “people seeking information” to “information seeking people.”
- (2) Second Branch Path: Ask→Answer. “Ask→answer” – “only answer when asked first” – is the most common workflow in reference consultation services, generally referring to users consulting and librarians answering. In this model, it includes not only Q&A between users and librarians but also between users themselves and among librarians: Q&A between users and librarians. In this model, users can submit questions to consultation librarians through face-to-face, telephone, email, WeChat, and other means. Librarians receive questions through the service platform backend, analyze, organize, and answer questions with the help of reference books, databases, network information resources, etc., and feed answers back to users through face-to-face and online methods. For certain specialized intelligence, novelty search, and topic-specific issues, they need not only to provide targeted guidance and long-term tracking for users but also to continuously discuss and communicate with users, so as to continuously modify and improve service content based on user evaluation and feedback results until users are satisfied, ensuring the quality of reference consultation services. Q&A among users. The deep development of Web 2.0 and users’ intensified demands for interaction have promoted continuously enhanced user participation. Users are no longer passive information recipients but actively participate in information content creation. Users’ agency and activity scope have been greatly improved. In this model, be-

fore consultation, users can conduct self-service retrieval of information resources to achieve self-questioning and self-answering. However, limitations in retrieval ability and information literacy may result in less-than-ideal “self-answer” effects. Then, seeking help from other users becomes a good option. Therefore, this model opens user permissions, allowing users to communicate and exchange with each other through the media convergence center via public or private messages on specific issues and topics, sharing resources and knowledge and exchanging insights and experiences, greatly changing the rigid situation of passively waiting for librarian answers. Q&A among consultation librarians. Given differences in work experience, knowledge reserves, and work skills, as well as limitations in energy and ability, consultation librarians often feel overwhelmed and at a loss when facing users’ wide variety of questions. Therefore, sharing experience and knowledge among consultation librarians becomes particularly important. In this model, on the one hand, younger student librarians with short work experience and insufficient experience can “ask” senior, experienced consultation librarians for practical question-answering skills and methods, and seniors generously teach them. Conversely, when encountering new technologies or concepts, the new generation of consultation librarians patiently explains. Both parties update knowledge and skills and improve professional capabilities through mutual Q&A and information sharing, thereby better serving users and improving work efficiency.

2.3 Advantage Analysis

2.3.1 Expanded User Permissions Through literature research, it is found that users’ roles have always been in a relatively passive and weak position: users’ operational scope remains limited to raising questions, waiting for answers, or self-service retrieval, with minimal effect. In the reengineered reference consultation process, users can utilize the media convergence platform, with the help of various information platforms such as mobile phones, online forums, websites, Weibo, and WeChat, to achieve multi-directional information dissemination and sharing. This truly realizes that everyone can become a producer and disseminator of information, everyone is an information carrier, and it is no longer “I listen to you” or “I ask, you answer,” but rather “we all speak” and “we can all answer” —a case of “all-to-all communication.”

Based on the media convergence platform, users can use different service methods for consultation and obtain information resources in different presentation forms. Moreover, their feedback does not need to go through librarians’ “paraphrasing and expression” but can be “self-stated” directly through online media. Simultaneously, users can also choose their preferred and accustomed ways to share their knowledge, insights, ideas, and experiences through multimedia forms such as text, pictures, audio, and video on information they are interested in and good at, realizing mutual communication and exchange among users, helping users solve difficulties, providing solutions, and contributing con-

tent to reference consultation services. Furthermore, this deeper, high-quality, and efficient mechanism for user participation in the entire consultation process not only enables users to play the role of librarians but also allows users to achieve collaborative production and create updated information products through communication with librarians and other users. This not only reduces the work pressure on consultation librarians and improves service efficiency but also adds value to reference consultation services, deepens reference consultation services, and forms an information ecosystem of knowledge production, sharing, and dissemination.

2.3.2 Information Resource Penetration The reference consultation service process model constructed in this paper aims to effectively connect and integrate traditional media such as print media, radio, and television with new media such as the internet, mobile phones, robots, and LED displays, as well as social media like WeChat and Weibo, and short video platforms like Douyin and Kuaishou, to establish an integrated, co-constructed, and shared media convergence center as a new service platform for reference consultation. On this platform, users can conduct centralized information retrieval and self-solve problems, and it can classify and process diverse information products according to the characteristics of the media and users, providing personalized and targeted services. More importantly, this entire information search and access does not only occur during the user consultation stage; more innovatively and intelligently, information push begins at the budding stage of user needs, and relevant information can even be subtly delivered when users feel a sense of inadequacy and curiosity.

On the one hand, this model is supported by user basic information, information behavior, and other data, using user portrait technology to seamlessly embed into users' information environments for different problem scenarios, proactively predicting user information needs, and through the media convergence center, achieving comprehensive information recommendation and three-dimensional coverage to facilitate information acquisition and improve problem-solving efficiency. On the other hand, through the integration of multi-media service platforms, it realizes predictive packaging of consultation information, which is more conducive for consultation librarians to obtain user access and information collection behavior data through multiple channels, analyze and mine user data, truly understand and dynamically track changes in user needs, and provide users with efficient, useful, and multi-level information products and intelligence services to meet users' actual and potential needs. The value-added information services provided based on access and interaction information can also bring new discoveries and opportunities, promoting reference consultation service value addition.

2.3.3 Customized Consultation Products The essence of media convergence is the integration of production forms and content, with its core being the development and sharing of content resources and the production and mining

of integrated information [14]. The mission of university libraries is to serve teaching and scientific research, with the main service targets being teachers and students. Therefore, the service objects of this model are mainly students (undergraduates, graduates) and teachers on campus. The reference consultation service process model constructed in this study uses the media convergence platform to centrally collect information and classifies and processes it according to the characteristics of different media and audiences to produce diversified information and knowledge products. This model freely combines expression forms such as text, pictures, audio, and video, and allocates and matches information according to users' platform usage habits and tendencies and different user information needs to complete reference consultation services.

Different service objects have different information needs and require matching information products at different levels. Student users tend to consult basic issues such as common sense information about the library, infrastructure and equipment, library space environment, and the use of literature resources. They also value service efficiency, prefer simplified processes, focus on operational convenience, and have requirements for diversified and novel information acquisition channels and presentation forms. However, their requirements for databases and specialized intelligence are not high, making them suitable for primary multimedia information products. Teacher users have a certain degree of difference in information literacy from students. They place more emphasis on the comprehensiveness, reliability, and maturity of information. In this model, consultation librarians search, locate, and process different types of primary information products through the media convergence center, produce secondary information products, create knowledge products, and provide intelligence services to meet teachers' literature needs in scientific research and academic studies.

2.3.4 Librarian Value Upgrade In the existing reference consultation work order, the functions of reference librarians run through the entire process, from accepting consultation → topic analysis → literature retrieval → answering consultation → establishing consultation archives [15], with librarians dominating the service process. This work procedure is 固化 and has certain norms. However, it is singular, lacks flexibility, each step depends on the completion of the previous one, and work efficiency is low.

Therefore, this model transforms librarian functions from singular and dominant to diversified and comprehensive, endowing reference consultation librarians with multiple identities and upgrading librarian value. Specific manifestations include: on the one hand, changing the traditional single linear relationship between users and consultation librarians, opening user participation permissions in the consultation process, strengthening user education, guidance, management, and supervision, and valuing user evaluation and feedback; on the other hand, changing the librarian-dominated service status, smoothing communication channels among users, among librarians, and between users and consultation librarians. Based on understanding, analyzing, and mining user

needs, combined with their own disciplinary backgrounds, librarians can deeply cultivate relevant fields, promote the externalization of tacit knowledge, and maximize self-value realization.

3. Recommendations for Promoting University Library Reference Consultation Process Reengineering

3.1 Building an Integrated Media Center to Implement Reengineering

Integrated media is an important concept derived from media convergence that emphasizes the connection and integration among various media to create a brand-new media form [16]. This paper utilizes the integrated media concept to attempt to construct a unified reference consultation service integrated media center that integrates perception, emphasizes openness, has strong compatibility, is easy to use, and ensures security, providing platform support for consultation service reengineering. Simply put, building an integrated media center can leverage the advantages of various media to achieve comprehensive information dissemination and collection before users raise questions, providing a new breakthrough for the reference consultation service process and promoting subsequent reengineering implementation.

Specifically, on the one hand, the integrated media center uses user portrait technology to realize the mining and extraction of massive user data, obtaining a complete user profile and depicting users from different dimensions such as background, characteristics, personality, behavior, and scenarios, connecting user needs with services to achieve prediction of user consultation needs [17]. On the other hand, it adopts diverse information expression forms such as text, pictures, charts, audio, and video to achieve free selection and combination of listening, reading, viewing, writing, speaking, and recording, meeting users' multi-faceted needs for information timeliness, appeal, preservation, and depth, making reference consultation services more "intelligent," enhancing the library's humanistic and technological charm, attracting users, improving service utilization, and promoting reengineering implementation.

3.2 Leveraging Group Synergy to Strengthen Reengineering Belief

Reference consultation service process reengineering not only introduces the integrated media concept and utilizes information technologies such as user portraits and big data but also changes the status of consultation librarians as the "center" of consultation—users begin to contribute content. This is not only a huge challenge for librarians but also places higher demands on users.

On the one hand, consultation personnel need to strengthen their learning of media convergence-related knowledge and understand information technologies such as user portraits and big data to communicate and share problems and difficulties with each other and improve learning efficiency [18]. Consultation personnel can also learn new knowledge and experience through communication

with users, affirm user value while promoting efficient and high-quality user content contribution. On the other hand, user-to-user sharing and exchange of knowledge, ideas, experiences, and other content are also needed. This can not only promote mutual growth and progress but also enable mutual supervision, advocate compliance with behavioral norms, encourage sharing of high-quality, highly knowledgeable, and highly relevant content according to requirements, and reduce or avoid uploading of malicious, illegal, and vulgar content that increases consultation librarians' work pressure and damages the library's image.

Therefore, various groups in the service process—reference librarians and users—should strengthen mutual communication and exchange, transmit opinions and views to each other, learn from and support each other, treat reference consultation work as a shared cause without distinction between “you” and “me,” complement each other's advantages, share resources, collaborate and advance together, strengthen reengineering belief, and continuously improve reference consultation work.

3.3 Dynamically Updating Services to Maintain Reengineering Vitality

“A library is a continuously growing organism,” and reference consultation service work is also a service that requires continuous dynamic updating. Related factors such as library development strategies, external environments, and technological iterations all require reference consultation services to continuously adjust and update. Among these, grasping user demand changes and updating librarian allocation are key factors affecting the quality of reference consultation service reengineering.

On the one hand, libraries need to constantly pay attention to user dynamics, promptly capture changes in users' attributes, psychology, behavior, and other characteristics along with environmental and situational changes, update and revise user portraits, and thus comprehensively and meticulously extract complete user information profiles [18]. This transforms massive user data into valuable knowledge and information, achieves precise matching between user needs and services, meets users' needs for novelty and diversification in consultation services, maintains the vitality and life force of the reengineered reference consultation service process, and provides scientific decision-making references for providing users with precise, personalized, and intelligent information services [19].

On the other hand, through literature research, it is found that introducing senior subject experts into reference consultation services to enrich library human resources is one of the countermeasures proposed by many scholars to improve reference consultation service quality. Meanwhile, some scholars have found through evaluating reference consultation quality that there is little difference in service quality between undergraduate and graduate students, and they can also provide high-quality reference consultation services [20]. Therefore, this

study will introduce undergraduate and graduate students as student librarians to provide common sense and basic services for ordinary users such as college students, while simultaneously introducing professional subject experts to provide specialized intelligence services for professional users such as teachers. Each has their own strengths and expertise, maximizing their respective effectiveness, thereby providing human resources support for service reengineering and maintaining reengineering vitality!

References

- [1] Xi Jinping Presided over the Fourth Meeting of the Central Leading Group for Comprehensively Deepening Reform [EB/OL]. [2020-03-06]. http://www.gov.cn/xinwen/2014-08/18/content_{2736451}.htm.
- [2] Cai W, Wang X. Angle • Vision • Trajectory—An Analysis of Research on “Media Convergence” [J]. International Press, 2009(11): 87-91.
- [3] Cai W. What Has Changed in News Communication Convergence [J]. Chinese Journalist, 2005(9): 7.
- [4] Accelerate the Promotion of Media Convergence Development and Build an All-Media Communication Pattern [EB/OL]. [2020-03-06]. http://www.xinhuanet.com/politics/leaders/2019-03/15/c_{1124240350}.htm.
- [5] You H. Problems and Strategies of Library Digital Resource Construction in the Media Convergence Era [J]. Library Work and Research, 2019(12): 103-108.
- [6] Wang Z. Research on University Library Service Marketing Strategies under the Background of Media Convergence [J]. Library and Information Service, 2017, 61(2): 31-34.
- [7] IMLER BB, GARCIA KR, CLEMENTS N. Are reference pop-up widgets welcome or annoying? A usability study [J]. Reference Services Review, 2016, 44(3): 282-291.
- [8] Yang T. An Empirical Study on Library Users’Reference Consultation Service Needs in the Network Environment [J]. Library Construction, 2014(9): 50-55.
- [9] Fan W. Library Knowledge Service Process Reengineering and Its System Optimization Countermeasures [J]. Information and Documentation Services, 2011(5): 76-79.
- [10] Liu J. The Five Laws, the Law of Least Effort, Process Reengineering and the Construction of a New Discipline Information Service System [J]. Library, 2013(4): 11-13.
- [11] KAARI J. Academic library patrons value personalized attention and subject matter expertise in reference consultations [J]. Evidence Based Library & Information Practice, 2019(14): 122-124.

- [12] Yang G. Research on the Development Model of Library Mobile Information Service from the Perspective of All-Media Convergence—A Review of “Research on Library Mobile Service Model” [J]. *Library Work and Research*, 2017(9): 114-116.
- [13] Chen D, Li D, Duan B. Strategies for Improving Digital Library Information Services under the Background of Media Convergence [J]. *University Library and Information Science Journal*, 2018, 36(5): 26-29, 75.
- [14] Jiang P. *Media Convergence Tutorial* [M]. Wuhan: Wuhan University Press, 2015: 1-87.
- [15] Cai L. *Basics of Library Reference Work* [M]. Beijing: Ocean Press, 2013: 77-175.
- [16] Luan Y. *Integrated Media Communication* [M]. Beijing: China Financial Publishing House, 2014: 29-118.
- [17] Chen D, Liu Y, Luo Y, et al. Construction of a Library Personalized Intelligent Service Model Framework Based on User Portrait [J]. *Library Work and Research*, 2019(6): 72-78.
- [18] ROWLANDS I, NICHOLAS D, WILLIAMS P, et al. The Google generation: the information behavior of the researcher of the future [J]. *Aslib Proceeding*, 2008, 60(4): 290-110.
- [19] Chu J. *Research on Library Digital Reference Services* [M]. Beijing: Beijing Library Press, 2004: 145-150.
- [20] KEYES K, DWORAKE. Staffing chat reference with undergraduate student assistants at an academic library: a standards-based assessment [J]. *Journal of Academic Librarianship*, 2017(43): 469-478.

Author Contributions: Yan Zhouzhou: Writing of the initial draft and content revision; Zhan Qingdong: Formulation of the outline and finalization of the manuscript.

Research on the Process Reengineering of Reference Service in University Library from the Perspective of Media Integration

Yan Zhouzhou, Zhan Qingdong

Fuzhou University Library, Fuzhou 350116

Abstract: [Purpose/Significance] This study aims to increase user stickiness and improve service quality by reengineering the reference consultation service process, thereby expanding the library’s influence. [Method/Process] Through literature research, this paper identifies problems among users, librarians, consultation platforms, and information resources in the traditional reference consultation service process. It introduces the concept of media convergence and

utilizes user portrait technology to attempt information push before users encounter problems. [Result/Conclusion] The study breaks the traditional reference consultation service model of “ask first, answer later; only answer when asked,” and constructs a new service process of “answer→ask→answer,” providing a new implementation path for reference consultation work and offering recommendations for reference consultation process reengineering.

Keywords: media convergence; reference service; process reengineering; user portrait

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

Source: ChinaXiv –Machine translation. Verify with original.