Exploring the Strategies for Improving the Service of University Libraries in the Digital Intelligence Era

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Abstract—As an important educational and information resource center in universities, university libraries provide literature and information security services for teaching and research, undoubtedly providing a very important support for academic research and social services in universities. University libraries are an important source for teachers and students to search for reference materials and obtain necessary information and materials for teaching, learning, academic research, etc. In the era of digital intelligence, the traditional service management model of university libraries has encountered unprecedented opportunities and challenges.

In the traditional sense, university libraries are places that provide book borrowing and reading services for university teachers and students. However, in the era of digital intelligence, their functions have undergone significant changes. University libraries should not only provide abundant paper book materials and journal resources, but also keep up with the digital era, actively build digital libraries and electronic resource platforms, and provide readers with convenient online retrieval and resource acquisition services. At the same time, libraries need to continuously improve their subject service levels to meet the needs of academic research and subject teaching. This article explores the development and innovation of subject service models in university libraries in the era of digital intelligence, in order to provide reference for relevant personnel and provide beneficial references for the sustainable development of university libraries.

Keywords— In the era of digital intelligence, university libraries, intercollegiate library alliances, artificial intelligence, and multi-element education.
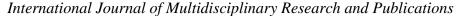
I. INTRODUCTION

With the continuous development of emerging technologies such as the Internet of Things, big data and artificial intelligence, the development concept of "Internet plus" has been established in many fields. The combination of "Internet plus" and traditional industries has brought many conveniences to people's lives. As an advanced concept and model, "Internet plus" has had an important impact on the management, service and resource construction of university libraries. The responsibility of university libraries has shifted from simply borrowing and returning books to providing comprehensive and diverse subject services [1-5]. The "Internet plus" service management mode constantly improves the service management level and brings personalized reading experience to readers through the integration of information resources. Through the transformation and development of libraries, we can quickly access the collected literature information, improve the efficiency of data utilization, and reduce the labor intensity of staff. Deeply integrate the concept of "Internet plus" and "Library+", implement service management innovation, and truly realize the transformation of the functions and positioning of university libraries. In this context, how to optimize the subject service mode of university libraries, improve service quality and efficiency, has become an urgent problem to be solved.

II. THE IMPACT OF "INTERNET PLUS" AND BIG DATA ON UNIVERSITY LIBRARIES IN THE DIGITAL INTELLIGENCE ERA

The application of "Internet plus" in the service management mode of university libraries has both advantages and disadvantages, and its shortcomings are objective.

(1) The internet-based innovation in the service management mode of university libraries has affected the interests of university library staff. At present, there is still a certain lag in the information management of university libraries in China. In the actual management process of university libraries, many problems have been caused by the insufficient abilities of some staff members. The management of university libraries is limited by traditional management methods in the past, mostly written and paper records, making it difficult to effectively utilize new electronic information technology to manage university libraries. This has led to insufficient utilization of information and insufficient integration with the advantages of university libraries.

(2) The management mode of internet services in university libraries is not yet perfect. At present, the service management of university libraries is carried out through book classification, so staff often have a clearer understanding of the location of books. However, for teachers and students, it often takes a long time to find the books they want to borrow in the library, and reading books can disrupt the original location of the books, making library service management complex and greatly reducing the effectiveness of service management.

(3) In the context of globalization, university library staff must possess professional information knowledge, but currently many people do not have sufficient skills to utilize information technology for effective service management. This has resulted in the new service management model not being able to truly play its role, which to some extent hinders the rapid development of university libraries.

III. INNOVATIVE STRATEGIES FOR SERVICE MANAGEMENT OF UNIVERSITY LIBRARIES IN THE DIGITAL INTELLIGENCE ERA

(1) Strengthen the construction of subject librarians and enhance the ability to integrate and utilize information resources.

To strengthen the construction of subject librarians, university libraries can take the following measures.

Firstly, university libraries can improve the professional literacy of subject librarians by providing more training and learning opportunities. University libraries can offer professional training courses, seminars, academic exchange activities, etc., to help subject librarians understand the latest trends, research hotspots, and cutting-edge issues of the subject, thereby better providing readers with subject services. University libraries can improve the information literacy and service ability of subject librarians through practical activities. By conducting practical activities, subject librarians can better understand the popular research directions and professional terminology of the subject, and improve their information literacy and service capabilities. University libraries can also take some measures to attract and retain excellent subject librarians [2]. For example, providing a good working environment and welfare benefits, supporting subject librarians to participate in academic research and subject construction, etc.

Secondly, establish a digital service platform to improve the efficiency of information resource utilization; Optimize the information resource management process and improve the efficiency of information resource management. University libraries can establish digital service platforms to provide intelligent information services for readers. For example, artificial intelligence technology, natural language processing technology, etc. can be utilized to help readers quickly obtain the required information. University libraries can improve the efficiency of information resource management by optimizing the information resource management process [3]. For example, a unified information resource management system can be established to classify, organize, label, and review information resources, thereby improving their availability and accuracy.

Finally, introduce advanced information technology means to improve the integration and utilization capabilities of information resources. University libraries can introduce advanced information technology tools such as big data analysis technology, cloud computing technology, and virtual reality technology to improve the integration and utilization of information resources. For example, big data analysis technology can be used to analyze and mine information resources, providing readers with more accurate information resource recommendation services; Virtual reality technology can be used to construct digital display spaces, providing readers with a more intuitive subject service experience.

(2) Strengthen talent training, enhance the comprehensive quality of librarians, and enhance their service capabilities.

Under the new situation, in the process of optimizing and innovating the development of library management work, universities should not only do a good job in infrastructure construction and supplement and optimize book resources, but also pay attention to forming a professional, high-level, and high-quality library management talent team. To hire professional management talents to be responsible for book management work, it is necessary to have certain requirements for personnel's education, work experience, professional literacy, etc., and conduct real-time assessment and evaluation of the work to ensure the quality of the talent team in book management work. In addition, attention should be paid to the training of library management personnel. Due to the lack of emphasis on library management work in the past, some university libraries have not provided systematic training for library management personnel, and management personnel are unable to continuously improve their management level and technical application abilities during the work process, thus unable to achieve continuous innovation in university library management work under the new situation. Therefore, Strengthening talent training is an important part of enhancing talent capabilities.

(3) Strengthen investment in system construction.

In the era of digital intelligence, university libraries should attach importance to the construction of informatization, networking and digitalization, increase investment in network facilities and software platforms, and solve the problems of less students paying attention to WeChat official account and less frequent use of service items after mobile libraries go online. University libraries should ensure sufficient funding, strengthen investment in technical equipment, purchase sufficient databases, and fully support the post maintenance work of library information construction. In the process of building the "Internet plus" library system, first of all, we should do a good job in the planning and investment of hardware equipment to ensure the maximum value of the software system. Determine the capacity and storage capacity of the host computer in combination with the requirements of the "Internet plus" library, including the requirements of the virtual space of the smart library. By building a smart library, we plan to invest in intelligent robots, 3D printing devices, VR devices, and other related intelligent devices. Secondly, on the basis of ensuring investment in hardware construction, strengthen the development and utilization of software. Software system development should learn from existing successful experiences and cases, promote software construction in an orderly manner, and continuously improve the quality of library service management.

(4) Comprehensively promote the construction of network service resources.

With the rapid development of science and information technology, university libraries should open up more service resources, maximize the role of higher education platforms, apply effective measures, promote the construction of digital resources, and achieve the digital development of university libraries. Specifically, library resource network value-added services should be gradually established to deeply process library collection resources and internet resources, strengthen the secondary development and utilization of resources in the library, and cooperate with the indexing platform in the library to carry out reasonable planning of resource categories, providing more convenient services for the retrieval application of a wide audience. At the same time, scientific information technology should also be used as the foundation to jointly share resource information, ensuring that university libraries can provide fast and accurate information services to audiences [3]. University libraries should establish the concept

of "library+", actively communicate with teachers and students through QQ, WeChat, and other means, fully meet the diverse needs of teachers and students, and use internet platforms to push relevant digital information to teachers and students; By establishing a literature information resource co construction and sharing platform, strengthening the effective collection and organization of useful information, making full use of high-quality resources in the Internet to enrich the library's database, making the acquisition and reading of information no longer limited by time, space, and location, and continuously improving the utilization rate of network information resources.

(5) Innovate service management forms and expand the spatial service functions of university libraries.

With the continuous progress of network technology, the role of campus networks and mobile software in school teaching is constantly enhancing, and online learning and office work have become a reality. Therefore, schools should actively build digital libraries, optimize book application platforms and management systems, so that students and teachers' reading forms are not limited by time or space, and avoid cumbersome traditional service forms, so that readers can quickly find book resources. Under the situation of innovative service management, library staff should actively cooperate and scientifically implement, learn and proficiently use new service management systems, and become innovators and guides of new service management models. Fully utilize big data technology to collect and analyze data on the needs of teachers and students, achieve information exchange between libraries and teachers and students, build a new book procurement model based on internet platforms, and improve the timeliness, initiative, and scientificity of book procurement. Fully leverage the personalization of library user services, utilize internet information technology to improve personalized services, meet the requirements of university teachers and students, and improve service quality [4]. Individualized services can also be provided offline. Some college students who study hard have spent all day in the library. For this, the library can open a special rest area, and provide some drinks, Dim sum, etc., to create more possibilities for improving the service quality of the library.

Expand the spatial service functions of university libraries. Firstly, universities can integrate and utilize various advanced technologies, such as VR technology, AR technology, facial recognition technology, and Internet of Things technology, to achieve multi-dimensional expansion of indoor space functions in libraries. Secondly, university libraries can focus on building and developing digital media spaces and digital academic spaces, providing corresponding professional services for teachers and students, and maximizing the library's spatial, resource, and talent advantages.

(6) Deepen the application of scientific and technological means, and strengthen innovation in disciplinary services.

Develop intelligent service models to improve the efficiency and quality of subject services. University libraries can adopt technologies such as artificial intelligence and natural language processing to develop intelligent service tools such as intelligent question answering systems and intelligent

search engines, in order to improve the efficiency and quality of subject services. By utilizing intelligent service tools, subject librarians can more efficiently answer reader questions, recommend subject resources, solve subject problems, and improve the efficiency and quality of subject services.

Strengthen the construction of digital resources and provide diversified subject resource services. University libraries can adopt various digital technologies to establish digital chemistry resource libraries such as digital libraries and digital literature libraries, providing readers with diversified digital chemistry resource services.

Promote the deep integration of digital technology and disciplinary services, and innovate the content and form of disciplinary services. University libraries can promote the deep integration of digital technology and subject services, and develop new forms of subject services, such as virtual laboratories, digital chemistry exhibitions, and subject knowledge graphs. Subject librarians can better meet the needs of readers and improve the quality of subject services by innovating the content and form of subject services.

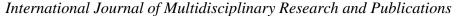(7) Utilize the advantages of cooperation and alliances.

Establish an intercollegiate library alliance to share library resources. University libraries can establish an intercollegiate library alliance to share library resources with other university libraries, in order to improve library resource utilization and reduce the cost of library collection resource construction. Members of the Intercollegiate Library Alliance can achieve the sharing of various resources, such as literature resources, databases, experimental instruments, etc., continuously enriching their own collection resources, improving the quality and efficiency of subject services, and better meeting the needs of readers.

Strengthen cooperation with enterprises and social organizations, and carry out disciplinary service projects. University libraries can collaborate with enterprises and social organizations to carry out disciplinary service projects. For example, digital library construction, subject database construction, academic research, etc. By collaborating with enterprises and social organizations, university libraries can better promote the development of subject service projects and improve the quality and efficiency of subject services.

Establish an international cooperation and exchange mechanism to broaden the scope of disciplinary services. University libraries can establish cooperative relationships with internationally renowned libraries and academic institutions to carry out international exchanges and cooperation. International exchange and cooperation can broaden the scope of subject services, provide opportunities for subject librarians to learn international advanced subject service concepts and technologies, and improve the quality and level of subject services.

(8) Carry out multi element nutrition education.

Establish awareness of education and enhance the concept of education. In carrying out multi element education and related work, librarians should change traditional concepts, strengthen their awareness of education, and always remember the educational concept of "three complete education". To

teach knowledge and skills, meet students' needs for professional abilities, and achieve the service function of the library; At the same time, it is also necessary to establish a sense of education and combine ideological and political work with multi-element education for college students, achieving equal emphasis on "teaching" and "education" [5]. We should have a self-awareness of "being a scholar in words and behaving in a world like manner", and through our own words and deeds, establish a model of behavior for students to learn, act, and be a person, achieving a nurturing effect that moistens things silently and transforms into rain like spring breeze.

Strengthen the construction of librarians and improve their own strength. Enrich educational forms and form a three-dimensional system. Combining its own advantages, carry out characteristic education. Under the concept of "three comprehensive education", the practical paths of carrying out multi-element education in university libraries are an organic whole that integrates and promotes each other. Only by strengthening multi-party linkage can we achieve the goal of comprehensively improving students' multi-element education, and maximize the function of university libraries in serving and educating people through culture.

With the development of society and technological progress, a single information literacy education can no longer meet the diverse and personalized growth needs of contemporary college students. University libraries should keep up with the pulse of the times, keep up with the social development situation, utilize their own advantages, and expand traditional information literacy education into a comprehensive, dynamic, and targeted multi-element education to meet the needs of the majority of students in school. While carrying out multi-element education, we should take the "Three Comprehensive Education" educational concept as the guidance, form a good education pattern where everyone is a teacher, always is a teacher, and everywhere is a teacher, and resolutely complete the fundamental task of "cultivating morality and talent" assigned by the Party and the people.

IV. CONCLUSION

University libraries have become an important way for teachers and students to obtain information. "Internet plus" and big data play a vital role in improving library management and service quality. University libraries should look to the future, increase investment, strengthen networking, informatization, digitization, and intelligence construction, innovate service management models, protect intellectual property and personal privacy, enhance the comprehensive literacy of library staff, independently establish excellent cooperative relationships with other university libraries, continuously expand the extension of the library, and effectively achieve mutual borrowing of books and resource information sharing, providing convenience for teachers and students to the greatest extent possible High quality and humanized services, truly achieving "reader first, service first", better meeting the needs of readers, improving the quality and efficiency of disciplinary services, and making greater contributions to promoting the construction of information technology and academic research in universities.

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