A Discussion on the Service System of College Smart Libraries in the "Internet +" Age

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Abstract. Since the State Council proposed the "Internet +" action plan in 2015, various industries have been developing their "Internet +" action plans. "Internet +" has already begun to affect the library community: In terms of service method, library services need to be transformed from online model to offline model and from manual services to smart self-service ways for users; in terms of service accuracy, libraries should solve the following problems: how to be as accurate as possible to meet the needs of users, how to exactly position the library services and products, and how to build an effective service platform. This requires the library to re-explore the new service system in the "Internet +" environment. Based on the author's learning and practical experience, this article first analyzed the connotation and characteristics of "Internet +" and then discussed the reform of library services led by "Internet +". Then it discussed the smart service system of college libraries and finally built a smart service system of college libraries based on "Internet +"

1. Introduction
At present, the Internet has extended into all aspects of our lives at an unprecedented speed. "Internet +" represents a new economic form. It integrates technology and achievements of the Internet in all walks of life and realizes the construction of "Digital China." In the context of "Internet +", the library needs to think not only about changes in the content of technology and services, but also the renewal of ideas. It needs to reflect om how to realize the deep integration with the Internet and achieve development of the library with innovative knowledge services on the basis of interconnection and interaction. The integration of "Internet + Library" has created a broader development platform for the innovation of knowledge services. With this platform, the library can take the "Internet +" initiative and realize its transformation and development.

2. Connotation and characteristics of "Internet +"
The emergence and continuous evolution of the Internet not only shows profound changes in the field of technology, but also triggers a new world view and methodology. In November 2012, Yu Yang (founder, chairman and CEO of Analysys International Group) proposed the concept of "Internet +" for the first time at the Fifth Mobile Internet Expo. The concept of the "Internet +" is carried forward by Ma Huateng, the chairman of board of directors in Tencent. He pointed out that the so-called "Internet +" is a new kind of ecology in a new field that takes the Internet as a platform and uses information and communication technology to combine the Internet with traditional industries. In November 2014, Premier Li Keqiang pointed out at the first World Internet Conference that the Internet is a new tool for popular entrepreneurship and innovation, and "Internet +" has officially appeared in public view. This shows that the "jargon" of "Internet +" has become the "terminology" in the government work report. It has become the strategic thinking for the transformation and development of China's economic and
social innovation. The essence of "Internet +" is " to form new value or a new business model with the cross-border integration of various industries on the Internet. The new value is more valuable than a simple industry. "Internet +" is to describe the business model under the Internet environment with the most simple and easy-to-understand way. The "Internet" refers to a general term and "plus" has many forms. For example, Taobao is "Internet + Market"; Tmall is "Internet + Department Store"; and Didi Taxi is "Internet + Taxi". This can clearly help traditional enterprises to define their own strategies and enable consumers to understand the corporate position. The essence of "Internet +" is about cross-border things, changes, openness and integration. It promotes the further development of applications in all walks of life, such as mobile Internet, cloud computing, big data, and the Internet of Things. The "Internet +" strategy is gradually changing people's lives and the way they understand the world. It can be seen that the Internet is no longer an industry in the "Internet+" era. It has become a powerful engine of national economy, and an engine of efficiency and innovation. The library is a window for social, economic, technological, cultural, scientific research and education services. It should be developed simultaneously with the society. At present, the impact of the "Internet +" theory and technology on libraries is undoubtedly enormous. Traditional libraries are mainly concerned with the needs of users for the first-class education and scientific research of library literature. The libraries with the digital economy should re-position and innovate knowledge service systems. Under the impetus of the "Internet +" era, the reader service in libraries should design and plan the future with new ideas and concepts. With a more active and open mind, the library can quickly understand the influence of the Internet on its environment, make specific changes and explore innovation on library management and service system. As the technology of library and information services, "Internet +" can promote and innovate service strategies to improve the core competitiveness of library innovation knowledge services.

3. "Internet +" leads the transformation of library services

3.1. Establishing strategic consciousness of "Internet + library"
Darwin pointed out in The Origin of Species that in the struggle for survival, certain species survived due to their advantages in structure, physique or talent. This is called "natural selection" or "survival of the fittest." With the advent of the mobile Internet era, libraries need to be genetically evolved. This evolution will provide unlimited space for the development of traditional libraries. The problem is that even if there exists the thorough understanding of Internet thinking, the clear comprehension of the concept of "Internet +" and excellent industrial policies, all will be just castles in the air without innovation, change, strategic adjustment and management optimization in the knowledge service of libraries based on "Internet +".

As a social institution for human to preserve and acquire knowledge information, information resources are the basis for their survival and the core of their construction and development. The services of modern libraries must transform its services from single one to multiple ones and from passive services to active services. Its core is open, multidimensional and information-based services. The Internet can make traditional reading services more convenient and make the experience of digital reading better. At present, traditional libraries urgently need transformation and upgrading, change the original service model as soon as possible, introduce the "Internet +" thinking, and regard Internet-based innovation as a strategic task. Only in this way can it be possible to cultivate and improve the innovative capacity of knowledge services and finally it will be transformed into a continuous competitive advantage to comply with the readers' changes in the information needs, learning styles and behavior and to meet the user's personalized and digital reading experience.

3.2. Innovating knowledge service system of "Internet + libraries"
In the process of the evolution of the PC Internet to the mobile Internet, the Web form with traffic has been transformed into Apps, wearable devices and sensors. It can be seen that the connection is not limited to one network cable and the connection is more diversified. It is urgent for "Internet +" to connect with users. Libraries also need to constantly innovate new forms of information services.
"Internet +" is not simply a matter of superimposing the Internet on a traditional library and it is not simply adding a tool. It means to complete information services and the transformation of traditional library based on the Internet with faster speed and fewer risks. The library with Internet technology integrates the fragmented knowledge scattered on the Internet through data mining to meet the needs of users and achieve the goal that search results are the answers.

Mobile Internet is just around us. Whether it is the essence of the Internet, technology, or thinking or the way to change, innovate, upgrade or reconstruct the offline services of traditional libraries, in the final analysis, they all use the advantages of "Internet +" to make up for the inadequacies of library services to achieve the high efficiency and interactivity of library services. At the same time, it will combine functions of libraries and the Internet organically, so that traditional library resources and information services complement each other to realize the new development of the library based on the Internet. Zhang Xingwang pointed out in his thesis When libraries meet the "Internet+" that the nature of library "Internet +" is the service innovation model of "Internet 2.0 + Service 2.0 + Innovation 2.0", which highly summarized that library management and service innovation interact and evolve together in the era of innovation 2.0. This in turn promotes the innovation in library knowledge service system. The library "Internet +" will contribute to the creation of an innovative big data knowledge ecosystem of library management and services. Facing the booming trend of the Internet industry, libraries must seize the opportunity to take the initiative to embrace the Internet, transform from traditional libraries to full-media mixed libraries. The library needs to restructure management systems and service systems, re-establish operational models and service model, and explores the establishment of a new business type for knowledge services based on the Internet and big data. The author believes that once the library industry transitions to the integration direction of "Internet + Library", it will become an irreversible trend. Large platforms, big data, and micro-services will certainly provide libraries with more extensive development opportunities and space.

3.3. Optimizing library management system in the era of "Internet +"

The Internet has made competitive advantages of traditional libraries disappear faster and faster. Competitive advantages in manpower, management and funds that traditional libraries has been proud of have passed out of existence and even become a barrier to the transformation and reform of library management. The construction of the "Internet + Library" knowledge service system is a process of continuous improvement and optimization. It is necessary to formulate and establish a corresponding development plan, construction strategy, implementation strategy, and evaluation system in light of the actual situation of library management and services. In order to win in the future, it is necessary to consider the management optimization and innovation in advance to promote "Internet +". When a library can continue to innovate its organizational structure and mechanism design based on the changes in users' needs and the characteristics of the Internet, it can truly begin the "Internet +" transformation.

4. Smart service system of college libraries

The smart service system is a new service system that meets users' needs with the digital and intelligent guidance and unlimited time and space of the smart libraries. The "wisdom" of the smart service system is reflected in its perceivable feature and personalized customization. Its core is "guidance-transformation", which means to guide users' needs and make library resources meet the needs of customers. Today, with the development of informatization, the correlation between various things has been strengthened. The combination of "Internet of Things" and "Internet" has realized the intelligent identification, positioning, tracking, monitoring and management of various things, and has strengthened level of original intelligence of things. This is a change of wisdom and the extension of digitization.

The smart library strengthens the application of information technology, interacts users and information resources in the library and enhances the flexibility and speed of service. It provides users with a safe and open environment and it is very convenient for users to inquire information and acquire knowledge. The smart library also relies on the Internet of Things, sensor technology and cloud
computing technology to make the library more integrated, open, mobile, and collaborative (see Figure 1).

Figure 1 Characteristics of the smart service system in college libraries

Integration: With the establishment of a smart service system, college libraries use the information system as a basis and utilize the integration technology of the Internet of Things and the Internet to achieve seamless access to a variety of receiving devices, including mobile phone App, computer software, emails and telephones. Users can use any access method to collect data. The smart service system of libraries integrates different service methods and provides users with more convenient services. It has realized comprehensive utilization of multiple service models and improves services.

Openness: What users can experience in the library is no longer a passive service, but an open service. Libraries can use information technology to obtain readers' borrowing records, preferences and learning backgrounds to conduct intelligent analysis so as to meet users' needs for different information.

Collaboration: College libraries provide a variety of digital, intelligent and multimedia services, and use various forms, such as device terminals to enhance their interactive capabilities, which realizes information communication and exchanges between users, between libraries, and between users and libraries.

Mobility: The smart service system of college libraries will adopt symmetrical broadband of uplink and downlink optical fiber to ensure the stability of the network status and the high efficiency of the network operation speed. Another experience of mobility is the use of infrared induction.

4.1. Hierarchy construction of the smart service system of college libraries

Based on the development of information technology, college libraries build a smart service system from three levels of "network service", "in-depth service" and "collaborative service". It integrates all-media resources and digs out the value of knowledge service in depth. (see Figure 2)
4.2. Network service
In order to achieve the improvement of library service quality and users' experience, the smart service system of college libraries must extend its scope of service to all aspects of the user in order to facilitate the use for users anytime and anywhere. The popularity of the Internet and the Internet of Things has created the conditions for the smart service of college libraries.

4.2.1. Digital library
The digital library constructs users' information sharing space. It integrates and transforms the network and information technology from the aspects of services and functions. The digital libraries provides users with comprehensive information push and improves the quality of information services for them. For example, the user group in the college library is stable and the popularizing and utilization rate of mobile library services are high. Users only need to download the library mobile client to directly access library resources, check their own resource usage, and conduct reference service. The mobile library can also develop mobile messaging, WAP and WeChat services.

4.2.2. Social network
The sudden emergence of Weibo changes people's habit of browsing the Internet. Most college students have the habit of refreshing Weibo. The library smart service can be launched on interactive websites such as Weibo and Tieba. It may provide users with various service forms of consultation, new book recommendation, event lectures and user appointments in the form of text, music, video and pictures. In addition, the social network can well record the user's reading habits. These historical records can help the library to understand the user's information needs and preference, thus improving the library user service efficiency.

4.2.3. Personal library
The establishment of a personal library realizes a user-driven library service model. Users can manage and use library information according to their own situation and build an information warehouse based on their own needs. This reflects the practicality and independence of the library. Users can also freely control the information that interferes with the library. A user can edit personal resource catalog, which facilitates the search. At the same time, the user can also edit, mark and comment on the content of the documents, share their resources through the Internet, and check others' open resources. This fully meets the personalized requirements.

4.3. In-depth service

4.3.1. Information integration
In the context of modern digital networks, libraries can dynamically integrate information resources and establish complementary services to enable users to find the information resources they need in the shortest possible time relying on information technology. The library should pay attention to the effective integration of its own resources, such as the classification of paper, audio, video and other information as well as the processing of information content. It needs to conduct in-depth excavation and reintegration of hidden information knowledge so that seemingly out-of-order, messy and fragmentary information resources can be replaced to meet the different needs of different users.

4.3.2. Professional services
College libraries are faced with a high demand for specialized content and a wide variety of specialties and scopes of the comprehensive universities. This requires focused knowledge services for different professional fields. Professional services should serve students with different majors through different situations and technology. At the same time, libraries should provide professional training for library staff and establish a system of subject librarians to provide services for users. In addition, the library...
should actively interact with various professional academic leaders to establish a professional consulting team.

4.3.3. **Personalized service**

Personalized service is the focus of service work in colleges and universities in recent years. It mainly promotes the application of the "people-oriented" working concept and truly meets the reading and psychological needs of users. Starting from the actual needs of users, it will make service content suitable for users, such as library lecture services and 24-hour library services. Xi'an Jiaotong-Liverpool University has launched a living library event. It invited the authors of books or people with special life experiences and they made face-to-face exchanges with the users on the campus. This inspires users' interest in borrowing books and truly fulfills personalized services. The activity is popular.

4.4. **Collaborative service**

4.4.1. **Library alliance**

With the development of information technology and the arrival of the era of big data, people's need for information services has gradually increased. A single library is limited in collecting and organizing resources. Therefore, it is very necessary for college library alliance and cooperation. Cooperation between college libraries can achieve the sharing of information resources and improve the quality of library services. The alliance also provides convenience for satisfying users' needs.

4.4.2. **Government information publicity service**

The library also provides an information publicity platform of the employment and social affairs management for teachers and students in colleges and universities. It integrates national policy information and provides various important government information links. The publicity of government information has increased the content of the social service system of college libraries, broadened its service area, and also reflected the fundamental idea of serving users in the college library.

5. **Conclusion**

In the new changes brought by the "Internet +", big data, cloud computing and the Internet of Things are the representative things and they promote the integration of the new generation of information technology and traditional libraries. It will develop a new business type of library information knowledge services. At present, the "Internet + Library" platform is still in its infancy in the development of information knowledge services. Although a large number of innovations have been made and satisfactory results have been achieved, there still exist many problems in terms of service content, methods, promotion ways and service effectiveness. In short, libraries has a long way to go to provide high-quality information and knowledge services with the Internet-based transformation. This requires deeper organizational reconstruction, management optimization and reform.

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