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Research Article

Analysis of Service Tactics Based on Library Resources

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Abstract: The development of intelligent and personalized recommendation service has become the trend in the era with rapid development of digital library and the popularization of intelligent technology. However, the traditional personalized service cannot meet the needs of users and the demands of digital library's development. Furthermore, the needs of users are becoming morecomplicated. How to accurately describe and fully understand the user's complex personalized requirements, and how to make the recommendation of resource services according to their needs have become a difficult problem. on the other hand, because the resources of digital libraries are huge, it's the focus that how to effectively collect massive resources and support efficient retrieval and recommendations, as well as how to fully exploit the intrinsic semantic links of digital library resources. In this regard, this review aim to analyze the construction of library resources informatization in the era of big data and expounds the important significance of constructing digital libraries. This paper alsooptimizes the services of the wisdom libraries after analyzing informatization library resources from the aspects of image resources, service strategies of MOOC and reading changes. Finally, it studies the approaches of realizing the service strategies of library resources which can be used for reference.

Keywords: big data; library resources; service tactics; approaches
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0 Introduction

"Big Data" is not only the technology that collects and processes data, but also a thinking method which is different from the conventional. As a center of information and knowledge, libraries should build the information and management database which is compatible with the big data and provide services to satisfy the university students' needs for seeking knowledge and exploration based on the database. Beijing released the data from the 13th National Reading Survey on 18th April 2016, which shows that: in 2015, there were 64.0% adults in China using digital reading, 51.3% adults read online, 60.0% adults read by cellphone, 8.8% chosen e-reader, 11.3% used Pad (tablet PC) for digital reading, 2.1% of adults read on CDs; and 51.9% of adult citizens read on WeChat. Among these people who read by mobile phone, 87.4% chosen WeChat as a platform to read. For Chinese adults, the reading rate of e-book is 26.8%, the reading rate of electronic newspapers is 12%, the reading rate of electronic periodicals is 9.4%; and the per capita of reading e-books is 3.26, which is slightly higher than that in 2014. The service strategies of library resources should conceptually include the openness of library space and library resources so that readers can access and utilize library resources more autonomously. With the increasing popularity of online reading and mobile reading, if all kinds of libraries can moderately open their own digital resources to the publicand build public service platform of regional libraries digital resources so that the public can take advantage of these resources while staying at home, which is of vital importance for enhancing services, promoting digital reading, especially for narrowing the differences in urban and rural cultural services and achieving the equal sharing of information resources.

1 Construction of informatization of library resources in an era of big data and rural cultural services and achieving the equal sharing of information resources.

For the definition of big data, most scholars cite the definition of the McKinsey Global Research Institute: "Big data usually includes data sets with sizes beyond the ability of commonly used software tools to capture, curate, manage, and process data within a tolerable

elapsed time. Big data is characterized by volume, velocity, variety and value.” In terms of libraries, big data means:

1.1 Age of big data

Library provides teachers and students with documents, knowledge and information. Each progress in information technology can improve its service capacity, for example, retrieval speed increased greatly as resulted from the replacement of manual directory by machine-readable catalogue in computer era. In addition, the realization of remote services in the Internet age has saved people’s time in acquiring information. The advent of the big data age will make the resources of the library richer, the structure of the collection resources more scientific and reasonable, the subject service more forward-looking and the information service more personalized.

1.2 Technology of big data

According to the definition and characteristics of big data, compared with the current library data processing technology, big data technology has made progress in the entire data life cycle, that is, the generation, sorting, processing and utilization of data, which is shown in a wider range of data source, various kinds of data, large-scale data, more advanced technology in data mining and finishing and more predictable results.

1.3 Big data thinking

Technological advances are bound to change people's behavior. For example, the widespread use of smartphones has changed the way people access information and reduced the need for printed information resources. People who are more dependent on the Internet can not live a normal life without Internet. Big data thinking is mainly reflected in: subjects in research extend to the whole instead of samples; seeking the correlativity rather than causality; focusing on process tracking analysis to "predict" the result instead of the “analysis” of the results.

2 Service strategies of informatization library resources

High Technical Industry Division of the National Development and Reform Commission [2016] No.1078 “Internet Plus Three Years of Artificial Intelligence Action Plan” proposed to speed up the construction of public platform of basic resources services and massive training repositories for literature, voice, images, video, map and other types of data. It also proposed to build a platform for public services to support large-scale and in-depth learning. According to these requirements, the service strategies of informatization library resources have been put forward with the aim of realizing the service of intelligent library under the background of big data and satisfying the public's reading demand.

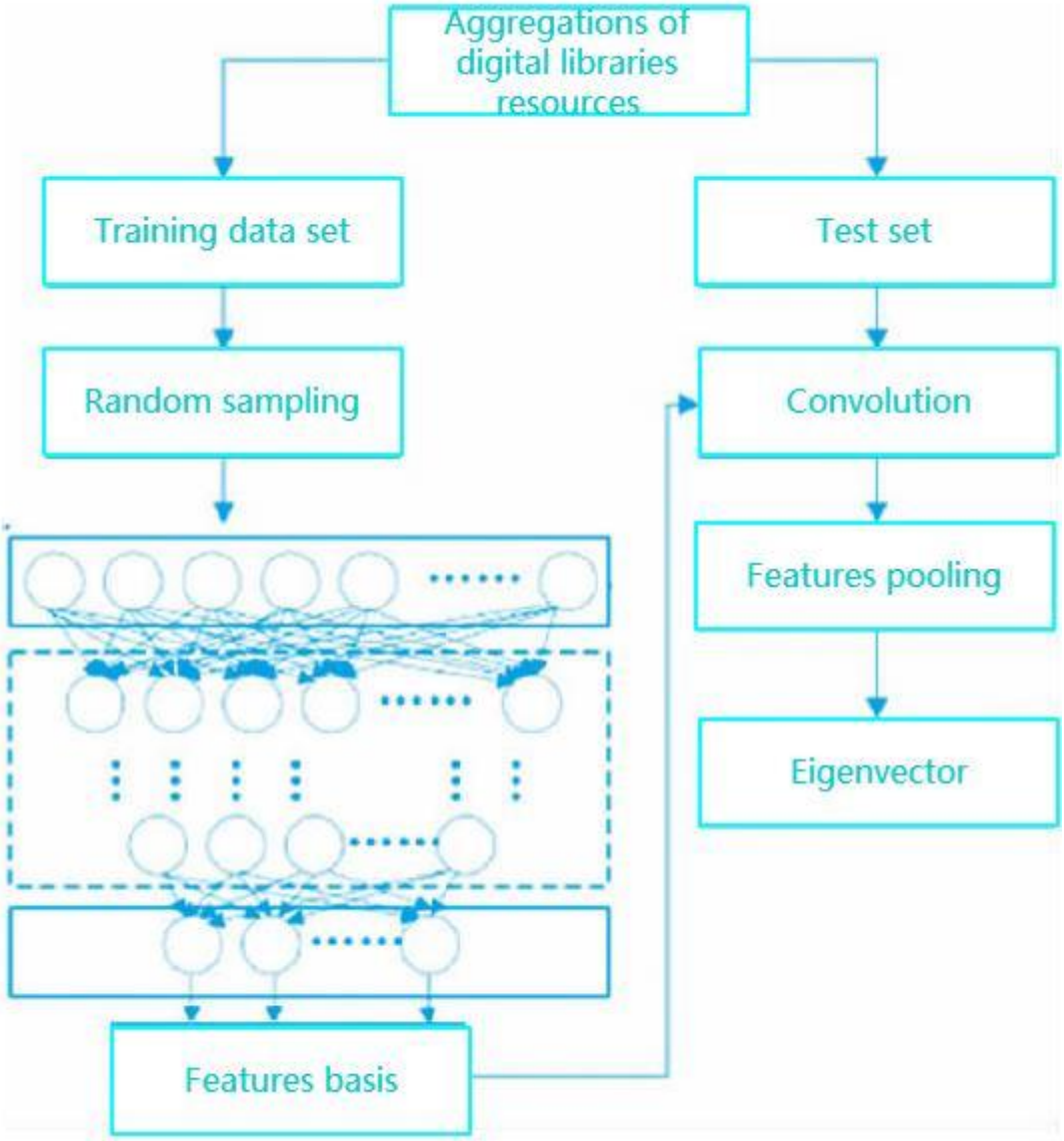
2.1 Service strategies of image resources

2.1.1 Image retrieval service strategies of digital library based on deep and reinforcement learning

In recent years, significant breakthroughs have been made in deep learning based on the human brain visual mechanism, which was ranked by MIT Technology Review magazine as one of the top ten breakthrough technologies in 2013. The deep learning Master program developed by Deep Mind in 2016 defeated the world's top 60 Go players and successfully invaded the last highland of the human intelligence game. Deep learning shows excellent performance in independent features learning and expression. Based on it, Andre from Stanford University presented a method of skin cancer diagnosis, which can reach expert level. In-depth learning is a multi-level expression algorithm with the implicit distribution of modeling data in machine learning. It is also equipped with a hierarchical structure like visual perception of human brain, which can be used to learn the characteristics of data layer by layer.Thus, you can discover the intrinsic structure of the data and improve classification recognition. Research shows that deep learning can well mine the low-level and middle-level features of images.

The ultimate goal of reinforcement learning is to optimize the overall expected return function in the decision-making process. The digital library can use the platform of large image data and the process as shown in the figure 1 to train the deep neural network of various image conceptual models and realize the intelligent retrieval service of image resources by using the deep and reinforcement learning.

Fig.1 Image Feature Learning Based on Deep Learning.



2.1.2 Strategies of digital library image retrieval service based on transfer learning

Transfer learning not only uses but also has a good application of a lot of data in the source domain. The data can be also used in another domain after building a model, which shows the ability to draw differences about other cases from one instance. For a few new labeled data, transfer learning can build a model by adding a large amount of valid labeled data into the current data set, which can save resources and time of machine leaning. Part of the digital library image resources, such as precious ancient books, are less, and the computer can transfer the knowledge and methods of learning in the source domain into target domain. By using strategies, such as sample transfer, feature transfer, model transfer and relationship transfer, the digital library image retrieval service based on transfer learning can be realized.

Sample transfer learning uses samples to achieve the goal of transfer, that is, find source data similar with those in target domain before multiplying the source data by many times. Learning by feature transfer means recognizing the common features of the source domain and target domain, usually before knowledge transfer can be done. For example, a model is generated with a source domain as X and a target domain data as Y. The probability of P (X, Y) and P (Y | X) is then computed to build models with data of different distributions in source and target domain. By doing so, knowledge can be transferred from source domain to target domain, thus, the performance of the algorithm can been improved.

2.2 Service strategies based on MOOC resources

The appearance of MOOC (massive Open Online Course) has greatly influenced the traditional mode of higher education, which has been welcomed by users for its complete course content, cross-space discussion

and flexible examination mode. The development of MOOC is not only used to promotes the change of knowledge communication mode. It also advance the development of related knowledge service and resource integration, which have a corresponding influence on the thought and tactics of library service so as to promote the continuous expansion and fusion of library service mode.

2.2.1 Collection and integration of MOOC resources

One of MOOC's natures is openness which can be presented in the scope of the use of reference materials covered by the course, the way of use, the scope of the students, the way of teaching and ideas. In addition to three major MOOC platforms in foreign countries (Coursera, edX and udacity), there are moreMOOC platforms appearing in China. For example, XuetangX, CNMOOC, China University MOOC, UOOC and many other platforms are developing. In additional to social organisations, some MOOC platforms in China are set up by educational authorities, such as PMPH MOOC and Shanghai Curriculum Center. These platforms have a small number of courses, but shows better in promotion work towards its jurisdictions or allied units. Based on this situation, there are still some deficiencies in the management of Chinese MOOC courses in China, which are embodied in 3 aspects. First, the same curriculum can appear on different MOOC platforms, showing a lack of authentication mechanism; second, the course in all platforms can be only accessed in the same Union, and credits are usually useful in the same Union, showing its social deficiencies; third, the members of the alliance have the problem related to expenses, which may affect the promotion of some courses and leads to inadequate openness. Therefore, the library can collect MOOC curriculum resources according to universities' discipline features, which can increase the amount and types of library resources and expand the service content.

2.2.2 Promote cooperation in different libraries and platforms to seek mutual benefit

The funding of library comes from financial allocations and some projects supported by the society. Only the information suitable for the major disciplines and some special projects in the school can be selected. Moreover, with the limitation in time gap between resource distribution and purchase, most of the libraries cannot guarantee the readers access the information they required for the first time. Taking MOOC as an instance, the authority and timeliness of a MOOC course must be ensured by rigorous curriculum system and authoritative reference with high matching degree. Hence, if library wants to enlarge the amount and expand the ranges of resources, it must depend on library cooperation (or library alliance) and platform cooperation to acquire abundant resources. Also, library cooperation is not limited within libraries. If the problems related to natural science, natural history museum can offer assistance; if the problem involves history and culture, maybe history museum, topic museum and archives center can give a hand; if it is an academic issue, and the third party leading academic institutions can help to deal with it. With these, library can take the opportunity to create a library service network. Meanwhile, the library can also carry out special cooperation with the MOOC platform to promote a part of the popular topics for learners at school, which can lead to mutual benefits and win-win cooperation.

2.3 Service strategies of reading behavior changes

2.3.1 Analysis of Changing Reading Demand

In general, students need to go through three stages of reading: information screening, information acquisition and information feedback. With the development of the new media, the reading demands of students have undergone tremendous changes, which are also reflected in the above three stages. Specifically, in the digital environment, most universities' library provide information retrieval systems, collection electronic resource retrieval systems and manual consultation for information retrieval. In contrast, online information producers will add corresponding labels for all kinds of information to find with convenience and reduce the cost of time. For example, some people will extract the author information of the article or paper, keyword information, download and forward information, etc., and when reader reads, the screen pops up the windows to attract students to a large extend. In addition, nowadays, college students are not merely attached to the breadth of information resources, but also pay more attention to their depth. With the rapid life's pace,, they are keen to obtain comprehensive and accurate information resources in a short time.

2.3.2 Analysis of changes of reading forms

The digital environment, to some extent, the changes of students' reading are mainly reflected in reading forms and contents. Compared with the traditional paper form, college students have diverse reading forms tomeet their needs and interests. At present, there are many reading types, such as online reading, mobile phone software reading and other types, and reading also has diverse forms with complete resources. In addition to reading the printed text, a great of software will provide audio reading service, and some well-known reading materials will be adapted

for movies, plays and even video games. Although many people think that the adaptation of work lacks the flavor and connotation of the original one, in fact, there is a little difference between the two, and in the current network environment, the new form of reading dominants. In terms of the changes of reading content, students in the past seldom used the Internet to acquire books and information and libraries in universities usually have regular books, thus, the students almost have no requirement of reading content. However, nowadays, students have a wider range of reading and diverse reading content. With the development of network technology, they can use network to obtain the resources they need for free, such as journal articles, current affairs, hot spots and online readings.

3 Optimization of "wisdom" library services based on "internet plus"

3.1 Transformation from knowledge services to intelligent services

At present, with the continuous emergence and promotion of new information technology (such as Internet of things, cloud technology and big data, etc.) and new media, Internet technologies are gradually integrating with the economic society and pushing our country into the era of network information. In the network environment, reform, innovation and transformation are inevitable trends for the development of the library. The traditional information service has gradually evolved into a virtual electronic service. It's necessary to change from passive service to active service is user-oriented. The information age has created the development condition of "wisdom" for the library, thus, the library should seize this opportunity to explore the feasibility of combining "Internet +" with library, and promote the transformation of knowledge service to intelligent service.

3.1.1 Service strategies based on concept of people-oriented

The combination of "Internet +" and Wisdom Library aims to meet the diversified needs of users for information services. In the information age, libraries must carry forward the wisdom of the humanities and adhere to the concept of people-oriented to provide users with intelligent management services and promote the sustainable development of libraries. Because the "Internet +" and the wisdom of the library share certain concepts, so services that adhere to people-oriented philosophy and can meet customer demands has become the development trend of library services. The service object of the wisdom library is the user, thus, library should focus on the user experience in the combination of "Internet +" and wisdom library. Besides, library should provide users with more convenient, efficient and personalized network information service platform. In addition, library should also pay attention to the mining of user data, mainly including the user's reading preferences, the main browsing content, the time of visit and related behavior traces, then analyze user's information to build user-related evaluation system and feedback system to promote the development of services in the wisdom library.

3.1.2 Realize one-stop intelligent retrieval service

In this combination, intelligent resources are the foundation of the service of wisdom library. From the perspective of the ecosphere outside the library, "Internet +" has promoted the transboundary integration of information, and made exchanges and interactions between different libraries and institutions more frequent, which has ensured the liquidity and interaction of the information. While, from the perspective of the library, the service of the wisdom library should focus on two kinds of resources, one of which is its collections, including electronic periodicals, literature databases and paper resources, etc., and the other is user resources, mainly including the users' information, information about their borrowing and records of the time. In the construction of the "Internet +" wisdom library, the library should find its new position and make a unified classification, aggregation and planning of resources to create a one-stop retrieval system that provides diversified, open and comprehensive retrieval method, which can meet the user's fast, simple and efficient retrieval need, and realize knowledge appreciation and value-added services.

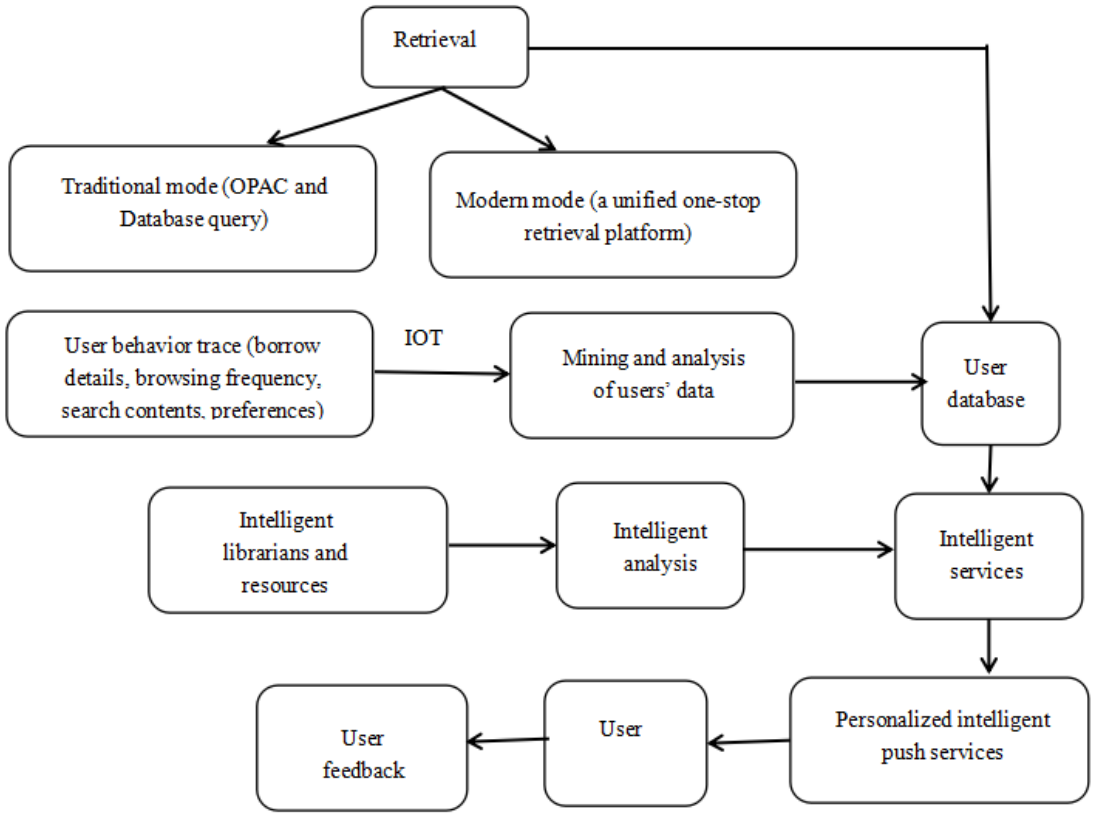
3.2 Technology-driven approach to optimize intelligent structure

3.2.1 Analysis of Wisdom Library Service with Internet of Things Technology

The Internet of Things means "everything is connected" in the Internet. When library equipment or machine is connected to the Internet, sensors, personnel, controllers, machines, etc., are interconnected in a new form, and the needs of information interaction between "Users and Users", "Users and Resources", and "Users and devices" can be satisfied. Library mainly adopted the query service mode based on OPAC directory and database in the past, but this kind of mode is simple and cannot meet the user's requirement. With Internet of Things, the service uses sensors, two-dimensional code and RFID technology to enhance the ability to identify, analyze, perceive, track

and transmit the real-time data and information, which can strengthen the mining of user resources, and record users' demand of diversified information services. By doing so, the library can provide targeted, professional, personalized and intelligent services so that the service quality of the wisdom library can be improved. (as Fig.2)

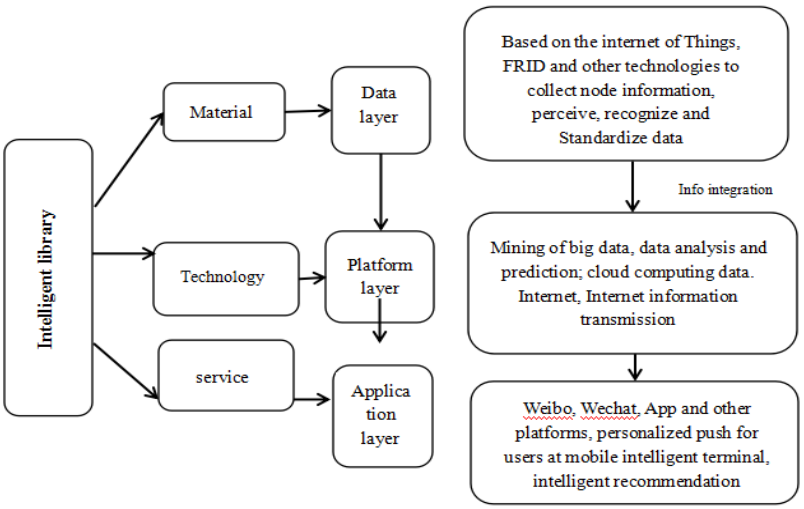
Fig.2 User Behavior-oriented Intellectual Service



3.2.2 Ways to build a wisdom library model under "Internet +"

With "Internet +", the construction of wisdom library should pay attention to the materials, user services and technology as these three of which are indispensable. In this regard, the paper's author usually introduces the wisdom library model mainly from three aspects: data, application and platform (Fig.3). Intelligent service should meet all-round, multi-level, personalized and interconnected needs, complete data operation and continue to improve intellectual service quality in order to provide efficient and good service.

Fig.3 Model of Wisdom Library



4 How to choose strategies to realize library services

The realization of service strategies is a process that shows the changing position of readers and university libraries, from domination to acceptance, from demand to satisfaction. It is the interactive circulation between service strategies and service objects. The popularization of universal reading has a similar dynamic development system. The form of reading promotion activities and the reader are changing, thus, reading promotion services should be constantly adjusted to meet the needs of readers and timely make up deficiencies to achieve the objectives of the work. Moreover, the research on the theory and practice of the popularization of universal reading, especially research on the personnel who participate in the work is the requirement for the adjustment of service strategies. First, the basic condition of realizing the service strategies is to satisfy the readers' direct need. Service strategies must be combined with the reader's purposes. In general, the elasticity of enjoying type consumption is big, and the demand elasticity of necessities is small.

Similarly, the demand for mental services is flexible and the flexibility of service acceptance is greater. The essence of the popularization of universal reading in university libraries is to carry out the reader-oriented services and establish the relationship of dissemination, communication, coordination and cooperation with the readers--their clients. This relationship model is a two-way communication model. The priority is not to consider what kind of professional methods guides readers, but to understand what the needs of individuals are. Then, it is also important to consider what kind of method can promote the occurrence of individual reading, meet functional reading needs and entertain one's heart and mind.

Second, integrate school resources to increase the dominant force in adopting service strategies. Colleges and universities are the main part of the service activities of the university libraries. All the activities of the university libraries cannot operate without all organizations in school, teachers and students. The university library should actively promote the establishment of universal reading promotion committee in the school, work with student volunteers, associations and other school organizations to organize the promotion activities of universal reading in holidays. With this library can know the specific reading demands from units, families and readers and the leading role of readers can be highlighted. Schools and society can build incentive mechanism, such as, credit system, reading certification system for graduation and employment to make universal reading normal. It is from the aspect of mechanism to realize service strategies.

Thirdly, through the establishment of two sound evaluation systems, we should promote the enthusiasm of both schools and librarians to promote the implementation of reading promotion service strategies. Universities and education authorities, national reading promotion departments should establish a sound evaluation system, which is combined with the achievements and experience of reading promotion work. The evaluation indexes should set up based on the content and form of activity, planning scheme, propaganda work, cooperation mode, follow-up service, planning, operation mechanism, governance mode and long-term mechanism. It is essential to build a sound evaluation system, which is conducive to the promotion of service strategy implementation from the aspects of construction of university library, readers' satisfaction service and cooperation institutions. For the librarians in colleges and universities, they should set up the evaluation system of the reading promotion activities and choose universal reading promotion stars from the specific evaluation indexes, such as service ability, service innovation and reader evaluation. These actions could motivate the librarians and the volunteers to complete the service work actively and to achieve the service strategies.

5 Conclusion

Changes in university libraries triggered by big data are all-encompassing and some may be disruptive. This paper is only a discussion of the more important changes under the existing cognitive conditions. Furthermore, data security is of vital importance, which can be said to be the basis of all applications. Security awareness, security technology, security measures and other things are essential issues for the development of big data. Apart from these, intellectual property rights, privacy and other issues related to groups or individual rights and interests also need to pay special attention because these problems will be more prominent in big data age. In short, the library should continue to explore the application of big data with a positive attitude and scientific spirit and step out of the independent innovation with a solid pace.

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