Research on the Library Enterprise Development Prospects and Challenges under the Environment of Big Data and Cloud Computing

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Abstract. In this paper, we conduct research on the library development prospects and challenges under the environment of big data and cloud computing. Increasingly nervous and public libraries are facing funding, resources construction pace slow or stagnant difficult situation, readers to the library cause in the new times challenge. Big data era has quietly come, for the knowledge storage, use and development as own duty, the library, how to improve the ability of handling large amounts of growth literature is urgent. Our methodology solves the issues well which will be meaningful.

Keywords: Library Enterprise; Big Data; Development Prospects and Challenge; Cloud Computing.

Introduction

With the continuous development of information technology, with the emergence of a large amount of information resources search engine, let the reader access to the information are becoming more and more networked, digitized. Provide high quality personalized service non-profit social information service institutions grow up gradually, the closed-end management of the bookstore also adopted the open strategy, provide convenience for readers to read. Increasingly nervous and public libraries are facing funding, resources construction pace slow or stagnant difficult situation, readers to the library cause in the new times challenge, how to promote public library services, attract readers, out of the woods, to reveal its social function and value, as a historical subject facing the industry.

Computer technology has not been in business before use. It has been used to carry out literature retrieval and then the literature information institutions are so advanced, in the top in the era of computer application. But since the network technology development, especially the advent of the era of Internet, the original with information collection, processing, retrieval, users and other professional knowledge and technical books times lost to the IT industry's elite interest mechanism, watched their established sites. Use the librarians do not seem to improve the retrieval ways and means, for people to provide large amounts of information quickly. This work should be done by librarians, just they don't have money, power, may also have no vision. At a time like this, our country library cause is like a stream, not to advance is to go back. Only a radical change in the information revolution is needed to adapt to the environment, to stand, and seek the bigger chance [1-2].

The current situation of digital library in China could be summarized as the follows. (1) Type gradually presents the diversification trend of digital library. In a sense, the type of the digital library directly determines the development pattern of our country's digital library. According to relevant data, our country now has opened more than two hundred different types of digital library, including the national digital library, Peking University founder of the Chinese figures such as New York and the university library, and these include library education field, scientific research units, free digital library resources, the public library digital resource type, etc. (2) Digital resources construction become the important content of digital library development.

Basic are based on our country's digital library construction of university library, and then gradually to all levels of radiation in public libraries, and then developed into an independent construction gives priority to the development of the model. At present, the digital resources construction as an important content of digital library development, the current important work to promote the development of digital library is to strengthen the digital resources construction. (3) The key to the development of digital library and the development in the initial period at present, our country's digital library development is to gradually open, deep, and the direction of the technical transformation, basically achieved cross-database seamless retrieval and the ability of information sharing. Therefore, the development of the digital library is still in the initial critical period of development which needs to be deepened.
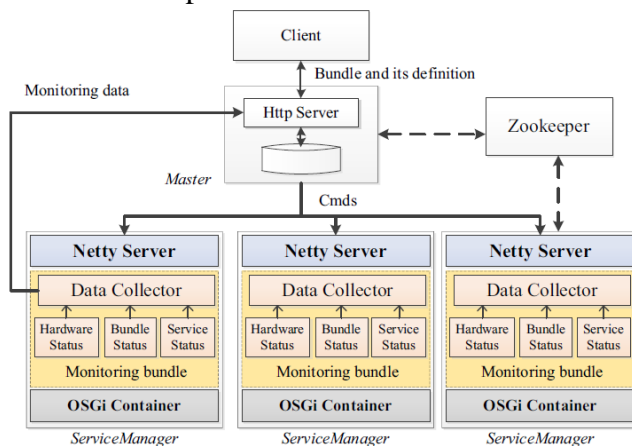

Figure 1. The Example of the Library under the Environment of Cloud Computing

In this paper, we conduct research on the library development prospects and challenges under the environment of big data and cloud computing. With the rapid development of information technology, alone has the power of a library to meet readers' demand for information is clearly impossible, therefore, to strengthen cooperation between the library is essential, is also a kind of inevitable trend, the digital library arises at the historic moment. Digital library can put all kinds of information via the Internet resources efficiently together, and classified according to different standards, is advantageous for the user to search and find information. So that the users of information search and find no longer restricted by space-time, and truly realize the information resources among libraries and the sharing of information. The figure one shows the example of the library in the cloud computing condition.

The Prospects and Proposed Methodology

The Big Data and Cloud Computing. Big data era has quietly come, for the knowledge storage, use and development as own duty, the library, how to improve the ability of handling large amounts of growth literature, knowledge service and the ability of information services, and adapt to big data era development trend data library construction is a significant research topic. In the era of small data, the traditional library has always been the storage service center of information and knowledge of the whole society, but in the era of big data, with the information and knowledge, network and digital real-time, traditional library operation pattern will be a major challenge, if do not make improvements will lose vitality. Therefore, under the new situation, must comply with the trend to promote the digital library, personalization, sharing and wisdom, and vigorously construction of big data, an intelligent library, make library of public data storage, processing, analysis and service center, become the discoverer and provider of information, knowledge and insight and server. Big data era is the higher stage of development of information society, information network technology has been in the society as a whole is widely used, people access to information resources more and more, in this case, the traditional library simple extensive service way already cannot adapt to the times, must be in the protection of library documents and resources rich and high quality at the same time, to continuous innovation in the service methods, provide targeted personalized for each reader,

refinement and humanized services. It is a library for user-centered personalized push which will generally provide tailored personalized service for readers [3-5].

The emergence of cloud computing technology for the further reform and innovation of university library provides a new choice and the direction, how to adapt to the demand of the development of cloud computing and cloud computing technology is used to create the cloud service system of the library in colleges and universities which will be directly related to the survival and development of university library in the future. Only follow cloud computing technology in a timely manner, to build a new development strategy, constantly updated information service means, to meet the growing demand of readers. "Cloud" is a metaphor for the Internet, the Internet, because in the topology people are used to substitute the shape of the cloud said the Internet or internal network. Traditional library information resources construction is not only need to buy servers, storage, the user computer and other equipment and software platform, but also need to be equipped with specialized technical personnel regularly update, upgrade and maintenance, with the continuous upgrading of digital resources and equipment. Server and storage are always facing the problem of insufficient and workers also need to constantly trained equipment use. After using cloud computing technology, server and storage by the service provider uses the centralized, professional management, the library is no longer requires constant input hardware, only a small amount of rent can provide quality and efficient service, saves operation maintenance costs, and improve the operation efficiency. Cloud computing, in a nutshell, is a kind of calculation based on network, this way to share the server hardware and software, reduce client configuration and resources for the purpose [6].

The Library Enterprise Development Prospects. Big data as a kind of advanced computer technology which provides the technical support for the library, will make the network application of huge amounts of data, and extract valuable services from complex data information [7]. But we need to see, under the background of big data, data model and the relationship between different database with past era, it is first to have data to determine the data model, and the data of the model is likely to change as the growth of the data, and because the data has a wide distribution due to make the library data management is facing many problems. At present, with the importance and application of big data from all walks of life, the characteristics of big data and sometimes inevitably appeared in the daily life of its great superiority. At the beginning of the majority of readers of the library service has a clearer and urgent requirements, the library must meet the requirement of social development, meet the needs of users, to provide complex data processing [8].

Under the background of big data, the user's requirements more, higher expectations of service, library management personnel must be able to understand the needs of users, to establish a controllable and efficient data processing process, to master a variety of data analysis methods can be structured data to understand what the user demand service, more able to take advantage of a large amount of unstructured data and semi-structured data from the library. Under the background of big data, as countries of the data acquisition and analysis ability to ascend, a large number of scattered valuable information implied in the data being used. Information security from the traditional network security, secrecy management control and safety management has become unpredictable and safe hidden trouble, uncontrolled safety management. The contradiction between the open data and information security is more and more prominent, the development of large data using makes people citizen privacy protection has been challenged. With the development of network information technology, and in order to improve

their service level, more and more libraries adopt cloud computing as the underlying architecture of its construction. But because of the cloud computing application is in the early stage, the immature place also will bring us security risks, so we must seize the opportunity to meet the challenge [9]. Cloud computing model there are many factors restricting the development of the library before: first of all system maintenance is the limited budget the budget problem has always been a bottleneck restricting the development of the library. The second is the backward operating software has no way to custom personality service. High quality information requirements in order to adapt to the readers, the library needs to set up an automated software platform, the software platform contains multiple function modules, each module can't implement independently, so can only buy the whole operating software, thus lead to the serious waste of money.

With the advent of the era of big data, the generation of scientific data and accumulated exponentially, stored in a library as a social information knowledge, provide information service center, in strategic innovation, must take the initiative to use these changes to meet the requirements, create the future. Library resources data volume expansion, higher quality of service, service policy change is not just rely on simple, such as the current way of data sharing, rich resources, innovation, increasing the time and so on [10-11]. From the more rules found in large amounts of data and find out the potential value, the greater the library's service level and so on will also promote the faster.

The Challenges and Suggestions. Library is a social public cultural service organization, its development involves many aspects, one of the key problems of support the development of the library we cannot ignore, that's resources. Resources is the key to the survival and development of any organization, the library is not exceptional also, the development of the library, access to resources is the key, the stronger the ability to access to resources, development of the power of the foot. And resource access is an extremely complex problem and all aspects of the factors will affect the library resource acquisition. According to the requirement of the network and users need to collect, processing documents, make each library online information resources, to avoid the same, to establish the social security pattern features strong information resources. Library to support the development of the basic resources and the main factors influencing the acquisition of library resources to carries on the discussion analysis, for we have a new understanding for library development way: although many factors in the environment of the library can't control, but the library can be through the joint efforts of the industry and the establishment of the internal mechanism of the library and the service innovation, to create a good work performance, to make the value of the library and give full play to the function, to improve access to its resources, promote the development of the library.

The emergence of the network environment for library collection resources access method and the structure of the information resources have brought the profound influence, this objectively requires the library information resources guarantee of its traditional mode makes the corresponding reform. In the past, the library information resources security mode is self-sufficient, interlibrary communication between rarely. But under the new information environment, libraries need to into regional, national and global information network, the passage of a massive network interconnection, realize the co-construction and sharing of library information resources. Library information resources sharing is to solve this contradiction insufficient knowledge information explosion and the collection of important way is also the urgent and basic need of the user, for the development of the library is of epoch-making significance which will has special meaning.

Conclusion

In this paper, we conduct research on the library development prospects and challenges under the environment of big data and cloud computing. After entering the new century, the world will face a new era of great development and change, in this day and age, all walks of life have to follow the trend of the times to choose their own new way of existence and development, this is not people will as the shift of the objective laws. How the library in the new era of social environment for the survival and development of a larger space, cannot leave the guidance of scientific view of development. Library cause this or that kind of problems encountered in the process of our development is inevitable, we touch stone across the river, even some unexpected problems, the important is whether we can use the concept of scientific development, with practical and realistic ideological principles make clear these problems, so as to grasp the law of development of library cause. In the future, we plan to conduct more related research on the issues more in-depth to modify the current methodology.

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