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Research on Library Management in Cloud Computing Environment

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Abstract: Under the premise of rapid economic development in our country, the various industries also get rapid development. Through SWOT analysis of library management in the cloud computing environment, this paper points out the advantages, disadvantages, opportunities and potential threats of library management in the cloud computing environment, and proposes the future trend of library management in the cloud computing environment. This paper proposes solutions to the problems of library management in the cloud computing environment.

Keywords: Cloud computing; Library management

1. Introduction

As a product of the new era, information technology plays an important role in all fields. In the work of library management, information technology can be used as the technical support of library management, helping libraries to integrate, store and share information resources. At present, information technology has been developing towards the direction of cloud computing. Under such an environment, how to develop library management to conform to the trend of information technology development is a problem that library management needs to consider.

2. SWOT Analysis of Library Management in Cloud Computing Environment

2.1. Strength

Today's libraries have a large number of documents and data in ancient and modern Chinese and foreign academic circles. With the continuous progress of science today, the total number of these resources is also increasing. Because libraries need to integrate these resources, in this environment, and computing can have a lot of data to play a role. Without this data, cloud computing will not help library management. At the same time, cloud computing is a service related to information technology, software and the Internet, so libraries can expand their influence and depend on cloud computing. Supported by numerous high-end servers, the cloud center is massive and can provide unprecedented computing speed and power. Therefore, cloud computing can allow users to get the information they need in a short time, and can also display the data they need together, helping users to complete the retrieval and integration work at the fastest speed.

2.2. Weaknesses

In the process of library management, information integration is carried out on the network, so network security has become the disadvantage of cloud computing. In the cloud computing environment, data is stored in the "cloud" as code. Although users can easily get the information they want, their information and privacy may also be used by hackers. Computer viruses can also make changes to the data in the library, so that a lot of data lost.

2.3. Opportunities

Through cloud computing technology, libraries can realize the entire process of computing data and data management without human operation, thus reducing the manpower investment of libraries. At the same time, in the cloud computing environment, the library can live with less money to higher interests, because cloud computing can help the library management, information storage, information retrieval, which can save material and financial resources, so as to achieve more scientific development. The cloud computing environment has revolutionized information organizations. The first step in this revolution is the role exchange. In the integration and organization of social information resources, users are no longer simply information gainers, they have been transformed into creators of information. Users can label the information themselves, and the information they refer to is derived from existing data and is an explicit resource. The information obtained by collecting and sorting, together with the analysis and thinking of the refiner, belongs to the hidden information in the resource. All of these can express the user's analysis and comprehension of information resources more deeply. It is the expansion and extension of previous information resources integration methods. The cloud computing environment provides more possibilities for the storage of information resources, and the virtual storage space on

the Internet brings infinite possibilities for the storage of library resources. Such as the library of congress issued "for the benefit of the common: a pilot project of the library of congress Flickr, release some resources through cooperation, make the historical significance and special value of resources can get and use more effective by people. More effectively expand and extend the access to resources.

2.4. Threats

In library management, data security has always been the primary issue, and in the environment of cloud computing, data security is not to be ignored. Since cloud computing is all about data transportation on the Internet, libraries will also upload the information of readers and users to the "cloud", which will lead to cloud computing service providers to store these data and pose a great threat to the information security of users.

3. Problems of Library Management in Cloud Computing Environment

3.1. Security issues

In the cloud computing environment, data is stored in the "cloud" as code. Although users can easily get the information resources and data they want, their data will be uploaded, so their information may be stolen. At the same time, the hardware facilities of cloud computing may be damaged to varying degrees, and the software facilities may also have problems, which will lead to data loss, damage and errors. Once the data is lost, there is no way to retrieve it without the help of paper-based documents.

3.2. Intellectual property rights

Although cloud computing environment, users can quickly access to information, but some information is not authorized by the original author, and some criminals use to steal this information, for selling, profitability, not only harm the interests of the original author, also let a lot of information lost the original value, cause a lot of adverse effects on the development of diversified information. In the cloud computing environment, library management is bound to upload resources to the "cloud" to save and manage resources. If cloud computing service providers disclose these information and resources for economic benefits, or disclose them in the network at will, the privatization of knowledge information will be threatened and intellectual property rights will be lost.

3.3. Standard problems

The existing library management in the cloud computing environment is the service provider according to their own conditions and needs, to develop their own rules to operate, rather than in the industry uniform rules and standards. In such an operating environment, libraries have only two choices when using cloud computing. One is to determine a service provider, which is overly dependent on it and cannot be replaced at will. Therefore, a large number of information resources are in the hands of the operator. There is also the option of constantly changing cloud computing services, which involves constantly shifting resources and therefore incurring high costs.

3.4. Resource issues

In the cloud computing environment, although the data has been integrated to the maximum extent, different libraries have different data, and some literature or experimental data can only be retrieved in specific libraries, which cannot provide information and data according to the needs of customers.

3.5. Service problems

In the cloud computing environment, less and less manpower is put into the library management; However, the traditional library service, with a lot of manpower, can help users solve problems anytime and anywhere. Users may not be able to adapt to such a fast pace of transformation. How to enable users to get the information they want in the cloud computing environment through cloud computing is the next problem for the library to solve.

4. Solutions to Problems in Library Management in the Cloud Computing Environment

4.1. Combination of traditional mode and cloud computing mode

In the cloud computing environment, it is inevitable that hardware and software facilities will be damaged and data will be lost. The best solution is to keep paper-based documents and retrieve data. Therefore, in the future library management work, we cannot completely abandon the traditional library model of keeping paper documents, which is a kind of physical backup of data. Only by combining the traditional model with the cloud computing model, can we ensure that information and data will not be damaged and help the library to manage information better. Meanwhile, in the "cloud", the data should be backed up for a second time to avoid the situation of re-uploading after data loss.

4.2. Encrypt the data

In the cloud computing environment, information and data are the foundation, the encryption of information and data is to protect the future development of the library, once the information is stolen, library management will be affected to a great extent. The use of data encryption technology, not only can protect the data from the outside network interference, and can prevent the data in

the internal theft. At the same time, the network security department should be set up to prevent some criminals from snooping and stealing users' information, so as to ensure that the library's internal materials are not damaged. Only in this way can cloud computing technology be more secure and reliable, and become a real library management tool.

4.3. Establish unified standards

In the cloud computing environment, different operators have different standards, so libraries should unify standards with operators to protect information resources. At the same time, we should communicate more with operators to let them understand the importance of intellectual property rights. In this way, it can help operators gain benefits while protecting the original value of information.

4.4. Resource sharing

In the cloud computing environment, different libraries should integrate all the data, so that users can get all the information in one library, helping users to search more quickly.

4.5. Reorganization management steps

In the cloud computing environment, there must be great differences between library management and the traditional mode, so each link needs to be rearranged to facilitate library management, establish a new management process, and improve the service efficiency of the library. At the same time, when the traditional service mode is transformed into a cloud computing environment, a prompt should be set up to help users understand and master cloud computing and get the information and data they want through cloud computing.

5. Future Trends of Library Management in the Cloud Computing Environment

5.1. On-demand services

The library management in the cloud computing environment changes the service mode of resource information from block and complexity to convenience, and its biggest advantage is the realization of "on-demand service" -- providing readers with more characteristic and personalized resource service. Under the cloud computing environment, the library has a set of scientific, reasonable and perfect information resource management mode. The cloud computing platform integrates the existing resources of the library with a large amount of information on the network and resource information of other relevant units, stores them in the "cloud", and implements resource information sharing through the Internet. Users can access the library cloud resources with the help of cloud computing, and independently obtain the information of book resources and loan situation. Librarians can also handle query, loan, purchase, archiving and other related work with the help of cloud computing, which fully reflects the personalization of library management in the cloud computing environment.

5.2. Online services

Under the cloud computing environment, the library has powerful background resources, which can help users to input online storage; Also can help the user to carry on the information retrieval, the user according to the demand for information, the use of a specific retrieval tool, with a specific way, from the huge "cloud" to search out the information and data. The exchange of information will make the acquiring individuals get cognitive and emotional satisfaction, information exchange and sharing is also an important means for users to acquire knowledge and information in the cloud environment. We can understand information and materials more quickly and accurately through cloud computing, and fully feel the information exchange and sharing in the cloud computing environment.

5.3. Fully automated management

In the cloud computing environment, the demand for human resources in the library is greatly reduced, because users can do all the operations they want through the computer. However, according to the current level of information technology, part of the work of the library still cannot be fully relied on cloud computing, and many processes still require the participation of library staff. Therefore, under the premise of continuous development of information technology, cloud computing should help libraries to fully automate management, help users to "serve" themselves, and reduce the burden of library management.

6. Conclusion

As an emerging technology, cloud computing is bound to have some problems while improving the efficiency of library management. In library management, we should ensure the security and accuracy of cloud computing to help libraries better manage themselves. When problems arise, we should timely summarize, think about, and follow the development trend of cloud computing technology, so as to provide users with better services.

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