The Application of Computers in University Library and the Problems and Countermeasures of Network Security

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Abstract. Technology is progressing and science is developing, the application of computers has long surpassed early scientific computing, but has expanded to various fields and industries of society. Nowadays, people's work, study and lifestyle have undergone inflammatory changes, and society is developing in the direction of science and technology. The development, construction, management and service of modern libraries reflect the trend of science and technology, convenience and dramatization. The library has experienced computer library, network library, digital library, mobile library, and ushered in the development period of innovative library in recent years, and computers have made indispensable contributions to the development of the entire library. From library resource construction, and book cataloging, to book resource management, and reader management, as well as the construction of electronic resources, subject services, etc., modern and intelligent libraries largely rely on computers. At the same time, network security is also a critical issue that major libraries need to pay attention to. Libraries should ensure network data security, prevent and solve in advance, and avoid the loss of libraries and readers.

Keywords: computer technology; university library; network security; information system.

1. Introduction

The University library is the document information resource center of the university, is an academic institution serving talent training and scientific research, is an integral part of the university information construction, and is also an essential position of campus culture and social culture construction. The main functions of the library are education function and information service function, and the main task is to build the literature and information resource system of the whole university, establish and improve the literature and information service system of the entire school, actively participate in the joint construction and sharing of various resources, give full play to the advantages of information resources and professional services, and serve the society [1]. Not only library information resources sharing, library collection management,and interview cataloging, but also website construction, reader services, and computer has become an indispensable part of the regular operation of modern libraries.

2. Application in Resource Sharing

2.1 The Necessity of Information Resource Sharing

One of the service tenets of the library is to provide various types of paper and electronic resources, and the transmission of cultural information resources is the fundamental value of the library to serve society. In the context of networking, the library preserves a lot of electronic data resources and has a wealth of library materials and library information. In the interconnection of rich information resources in the library, libraries must use network technology to build channels for resource interaction, and continuously expand the coverage of library communication and sharing information resources [2]. In the practice field of information resource sharing, computer network technology embodies significant technical promotion value, to make up for the lack of library information resources, it also requires libraries to share existing library information resources.

It is impossible for any university to meet its service needs fully. Due to the limitation of library scale and funds, many libraries are facing the problem of slow construction of digital information

resources. Their strength, has been unable to serve the majority of readers on the digital information and electronic resources of the various needs. Based on this, the university library should join hands to build, to promote the sustainable development of a high-quality university library, to join the university library information resources sharing team. About 30 years ago, the concept of co-construction and sharing of digital information resources in university libraries has been put forward. As a new concept to optimize the service level of university libraries, it advocates strengthening the connection between different university libraries through the application of digital technology and computer communication technology, and promoting in-depth cooperation between university libraries. Through the joint construction of university libraries, the digitization of unique library resources can be effectively strengthened, and the everyday use of various valuable resources can be better promoted. The critical goal of information resource sharing is to provide quick book service, using a quick and easy ways better to serve readers ' daily reading[3]. Readers will be more satisfied with library services while feeling convenient services. Under the role of modern computers and efficient network technology, the relevant responsible personnel should help readers to achieve personalized book subscription services, and closely integrate the real needs of readers to subscribe to the e-books required by readers. The popularity of digital devices among readers means libraries face the challenge of providing readers with helpful learning space[4]. Based on this, it is necessary to strengthen the research and analysis of the co-construction and sharing of digital information resources in university libraries and understand some of the current co-construction and sharing of university libraries.

2.2 Constructing Information Resource Sharing Platform

The co-construction of information resources is the premise of information resource sharing. The data sharing center has become an important channel and way for libraries to achieve mutual resources. Under the coordination of the Data Sharing Center, libraries in different regions can share books and materials, which improves the effectiveness of libraries' use of various resources and materials. Thus, the data-sharing platform for the library to achieve internal information exchange and inter-library interaction has an important supporting role. Therefore, in recent years, many university libraries and other public welfare libraries are gradually building cloud platforms for sharing library materials, using cloud technology to promote data exchange and information sharing between libraries.

2.2.1 Build a network-sharing platform

Digital resources are the basis for building a network-sharing platform. The hardware and software of the sharing platform are the core. Resource-sharing platform services and quality improvement can ensure that the platform is good faster and more stable operation, and provide a strong backing and important guarantee for the efficient utilization of platform resources and the safe and accurate storage of data.[5]. The sharing platform provides cross-database retrieval services based on heterogeneous systems. In the modern information society, relying on the Internet, databases and sharing servers, people can use the client's information terminal to manage information resources more efficiently, and realize the optimal allocation and rapid sharing of information resources.   Building a sharing platform is just one means of knowledge sharing.The aim is to provide better service.The goal of library resource sharing is to satisfy the needs of readers' information resources. To improve the quality of library sharing service, we need not only a secure network-sharing platform, but also a computer system and network environment with fast data transmission.

2.2.2 Build a resource and service collaboration platform

Resource integration, resource sharing and service sharing are the main problems that must be solved in the sharing of information resources in university libraries. University libraries should provide users with different ways of sharing services for different types of information resources, to expand the connotation of resource services, maximize resource utilization efficiency and optimize

service quality. At present, the data-sharing center has become an important channel and way for libraries to realize the exchange of resources. It has improved the effectiveness of libraries in using various resources and materials. The data sharing platform plays an important supporting role for libraries to achieve internal material exchange and interlibrary interaction. Therefore, in recent years, many university libraries and other public welfare libraries are gradually building cloud platforms for sharing library materials, using cloud technology to promote data exchange and information sharing between libraries.

2.3 Problems of Digital Information Resource Sharing

2.3.1 Intellectual property risk

Intellectual property risk will appear in paper literature sharing, digital resource construction, database sharing, inter-library resource sharing and network resource sharing: the most common interlibrary loan and document delivery. In the interlibrary loan process, books and materials from other libraries are copied, while document delivery shares resource by copying and electronic document links. These two sharing methods are beyond the scope of rational use of literature resources in libraries. Therefore, the basic principle of information resource sharing is to learn and serve readers as the bottom line, and not to seek unfair income, destroy principles or break the law. Library intellectual property disputes and crisis events have become the focus of public attention. Implementing library intellectual property control strategies and establishing and perfecting library crisis management mechanisms have become significant issues in library management today, and are also the fundamental guarantee for the survival and expansion of library business under the current legal environment.

2.3.2 Personnel cultivation

The librarian profession faces many problems, one of which is the embedding of the Internet and other digital technologies and the daily life of many communities. The cost of introducing and maintaining information technology is very high, so it is necessary to strengthen the information skills of librarians or enrich the talent team of our library by introducing talents. A technical department is set up to deal with computer data and related network system problems, train specialized skills, and at the same time, lectures are held regularly to participate in training. Each department can send librarians to participate, to realize that each department has librarians to solve some fundamental problems and improve service quality and work efficiency. So as to build a excellent technical environment for information resource sharing and ensure the healthy and orderly development of information technology.

3. Applied to daily management

3.1 Library Management

The construction of modern university libraries has introduced many information technology means, which is the general trend of the development of the Times and the progress of human civilization. The collection scale of the library is getting larger and larger, with the growth of China's education cause, the library collection resources closely follow the pace of the development of the school, and the disciplines are also constantly enriched, which also involves the collection of many new books and old books in different ages. The collection management of the library is also facing challenges about brought by the development of the library cause in the new era.Many local colleges and universities have been established less than50 years ago, with more than 2 million books in their collections; Peking University had more than 8 million print books in 2017; Sun Yat-sen University has already exceeded 10 million volumes. Therefore, library collection management is a difficult and complex task, facing the vast number of Chinese and foreign cultural treasures, library collections are treasures, but it is also a challenge for collection management. Computer technology has been fully utilized in many fields, and the speed and accuracy of

computers have brought great help to various management work. They have also become the guiding basis for library management [7]. Looking at the intelligent computer management system introduced by many universities, computer technology has played an increasingly important role in library resource management, significantly improving the efficiency of library resource management and providing more open and proactive services. Library collection management relies on computer technology, which can give the readers more scientific and reasonable assistance. Library staff can also use computer technology to achieve better scientific and practical management, which can reduce the pressure of library management personnel and ensure high accuracy of collection management.

3.2 Acquisition and cataloging system

Library collection and editing work include the tasks of collecting, sorting, processing, classifying and cataloging documents, which is the basis of library work. With the application of computers, the traditional collection and editing work has changed in terms of collection and editing objectives, collection and editing mode, collection scale and cataloging work. Library collection and editing objectives should include unstructured data such as user-generated data and network data, and realize the need for identification, retrieval and in-depth processing of library data through the collection of unstructured data, to improve the ability of data in the library field. With the development of electronic books, library procurement objects include a more comprehensive range, Audio-visual documents such as books, newspapers and tape discs; in the Internet era a variety of virtual information resources, such as electronic texts, database information and web page information, are also included in library procurement objects.

Users browse library resources through the Internet, and can view and download the electronic literature and data they need remotely. This has dramatically expanded the scale and scope of the library collection, and studies have shown that due to the increase in the size and scope of supply and editing, the scale of library data has grown across the volume and content of the collection and the change of procurement goals. In the work of book cataloging, the previous description of the characteristic appearance information such as document title, author, and publication year can no longer meet customer requirements. Still, it must but must pay attention to the description of the semantics of the document and the relationship between the document, to provide user retrieval efficiency and complete the recommendation to users. Due to the existence of massive unstructured data, the orderliness and quality of unstructured data is the premise of data development and mining, only according to the personalized needs of users, do an excellent job of cataloging, To truly understand and grasp the information needs of users, constantly enrich the content of library information resources, so as to improve the depth and breadth of library services can be comprehensively improved.

3.3 Readers and lending management

The number of books in the library is vast, and the requirements of resource construction are met. At the same time, the utilization rate of resources is also an index for us to consider the effectiveness of resource construction. The most significant advantage of computers is to shorten the distance between readers and documents [8]. Computers can help to count the situation of teachers and students entering the library, the borrowing of books and the use of various databases. They can also measure the click and download frequency of different databases, understand the use of databases and calculate the use cost. It is also possible to analyze the entry and borrowing of students of various disciplines and professional grades, and know which types of books are more popular. Computer technology can also be applied to library service, that is, according to readers' past book borrowing situation, readers' reading track can be drawn by computer technology, and on this basis, intelligent paper or e-book push can be applied according to the possible future trend of the personal reading track.

3.4 Library website management

Library websites can increase the communication between readers and libraries, and facilitate the use of library resources by teachers and students, which is the link between libraries and readers. With the help of relevant intelligent information technology, the library website has also formed a wisdom-centered architecture model, which also helps to strengthen the connection between books and readers, dramatically promotes the transformation of traditional libraries, allows readers to navigate knowledge when reading, and dramatically improves their reading ability. Computer network technology has significant   advantages. It has also been used explicitly in library websites, which promotes the construction and development of electronic databases, enhances readers' information literacy, has strong data mining ability, and improves work and study efficiency. Especially during the epidemic period, The service mode of the library has also undergone a significant change. A variety of digital services replace or supplement offline services. Through the computer network, all kinds of electronic resources can be accessed remotely. To better push online resources and provide online reference services, libraries also train librarians to improve their business ability to enhance the information literacy level of librarians and users[9].

4. Problems and Countermeasures of Library Network Security

Network security is a great challenge that every library faces. The security threats faced by computer networks have various forms, which are manifested in specific problems. Most of them are threats to network data or equipment. These threats mainly come from hacker attacks and virus attacks. The hidden dangers of network security include security loopholes brought by the software itself, security loopholes brought by the Internet itself and security loopholes brought by the firewall itself, etc. Every year, hacker attacks frequently occur in libraries, ranging from county-level libraries to national and even world-class libraries, which should always fight against hackers to ensure the safety of precious historical treasures.

Based on this, the library should have a perfect network security maintenance strategy, not only make effective use of firewalls and antivirus software to achieve security from the source, but also have an ideal data backup system, strengthen data protection, strengthen virus detection and killing, improve the network technology management system, and strengthen librarians' information literacy and network security awareness [10].

5. Conclusion

The 21st century has entered an era of the Internet, and the whole business process of the library, including editing, circulation, subject service and so on, can not be separated from the help of computers. While enjoying and utilizing the convenience of computer network information, libraries should also be more aware of all kinds of risks and potential safety hazards in practical application, and strictly guard against system loopholes, hacker attacks and computer viruses. Libraries also need to establish a perfect computer network security management system, enhance librarians' awareness of network security, and ensure that libraries have a good network operation environment and develop smoothly and orderly.

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