

Information Security Management Measures for College Archives Under the Network Environment

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Abstract: The construction of archives in colleges and universities in China is in the process of development and improvement. With the development information technology, the informatization of college archives has been accelerated. Network technology is developing rapidly in our country, and the number of network users has increased significantly. The use of network technology in university archives management can improve the management efficiency and quality of archives, but the safety factor has dropped significantly. For example, the archival system may face many problems such as virus infection, system paralysis, or cyberattacks, which affects the security of the university archives. Therefore, this paper presents an analysis of these problems in detail, and proposes corresponding solutions, so as to optimize and improve the information security management of college archives.

Keywords: Network environment; University archives; Information security management

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1. Introduction

At present, China's science and technology and network technology are developing rapidly. These technologies are widely used in various industries in society. The integration of network technology and archives information management in colleges and universities can realize the informatization of archives, thereby improving the efficiency of archives management. However, there are certain dangers and loopholes in its actual application. Network technology has many advantages and characteristics such as fast sharing and transmission, but these can also be the disadvantages. The faster the development of network technology, the wider the spread of a virus can be, which not only poses a threat to the security of university programs, but also has a certain impact on people's daily lives. Therefore, it is necessary to optimize the system and rectify any problems discovered to improve the overall quality and efficiency of university archives information security management.

2. Characteristics of university archives

2.1. Complexity

University archives are the historical records in the form of audios, videos, icons, and texts of various activities that occurred in colleges and universities, such as scientific research, or records related to the government, management, and teaching, which are meaningful to schools and the society. Colleges and universities consist of many students; there are undergraduates and postgraduates, local students and foreign students, full-time and part-time students, with each student having his/her own file. The files can be a hardcopy or an electronic one, and the same goes for school teachers. Moreover, the archives of leaders of

the colleges and universities need to be specially managed ^[1]. In addition, there are a variety of club activities and departmental activities. There are different preservation and management methods for different archives, and the duration and time of all archives are different.

2.2. Advancement

At present, our country's society is developing rapidly, and the scientific research capabilities of universities are gradually highlighted. They are important bases for knowledge growth and innovation, where many academic resources and scientific research resources can be produced. Every year, students and teachers in colleges produce research output with much effort ^[2]. For example, teachers and students in colleges and universities will write various reports and papers based on their own research results every year to represent the development of science and technology, which in a way highlight the advanced nature of college archives.

2.3. Accessibility

Archives can be shared among institutions or to the public in accordance to relevant requirements. However, the sharing of scientific research archives need to be well-managed. If the research results and reports are not disseminated and released in a timely and extensive manner, the research results will not be fully utilized. This is not only a waste of school resources, but also waste of social resources.

2.4. Confidentiality

University archives contain a lot of content, many of which cannot be made public. Among them, the content that cannot be disclosed includes the following: party and state secrets, archives containing related technologies and patents developed on campus, and files involving personal privacy. In addition, all faculty and staff files cannot be borrowed. However, the files can be borrowed under special circumstances with the approval of relevant departments ^[3]. The lending party must do a good job in keeping the files and keeping them confidential, and the files cannot be transferred. The files cannot be dismantled or altered while being lent. The files need to be cared for and must be returned in time after they are used. At present, our country has realized network-based archives information security management, which can optimize the confidentiality of archives. The security management of archives information in colleges and universities is of great importance. Therefore, it is not only necessary to make full use of archive resources, but also to ensure the security of archive information. Therefore, we need to continuously optimize and improve archives security management to and ensure the security of archives.

3. The current situation of the application of archives in colleges and universities

At present, the networked information security management of university archives in our country is in the process of development, and the number of intranet users is relatively small. Software of archives management in colleges and universities are usually either purchased from other companies ^[4] or developed collaboratively by the school and a company. However, the above two forms of file management systems and file management software have some disadvantages. Moreover, the number of talents related to archiving of many colleges and universities are lacking, which leads to a shortage of talents in professional management.

3.1. Insufficient archives awareness

In the current file information security management work, most personnel have insufficient management awareness. Many people think as long as their usernames and passwords are not disclosed, the security of their information will not be affected. This is also an important manifestation of insufficient security

awareness. Hackers can steal user passwords through advanced technologies. Some people believe the security of their devices can be ensured by installing anti-virus software, but many people do not know enough about the application and updates of anti-virus software, which leads to potential safety hazards.

3.2. Insufficient management system

According to the current development and construction of archives management departments in colleges and universities, there are many problems in information security. Besides, there are certain limitations in the application of security management models. Along with the lack of understanding of the role of Internet security deployment, these problems will have an impact on the security of archives and information ^[5]. Some hackers will attack the loopholes in the system to obtain information. If these problems cannot be effectively resolved, the information security of university archives will be affected and even lead to data loss or network paralysis in serious cases.

3.3. Virus violation

Both Trojan horse and worms are bad factors that can affect network security. Among them, worms mainly infect files, and this virus can travel and self-replicate through the network. If the network system is infected with worms, the network traffic of electronic devices will be greatly increased, and the operating speed of electronic devices will also be reduced. Some worms will cause file damage and loss, and cause some problems to the software. Trojan horse is a professional term among hackers, which means attack. If a computer is invaded by a Trojan horse, hackers can control the computer through the virus, and at the same time delete and download the software and data in the computer at will.

4. Measures for management of archives information security in colleges and universities under the network environment

4.1. Strengthening security development capabilities

The security of the university's archive network can affect the security of the archive resources. Applying network technology to college archives improves the overall level and quality of archives security information management, but it is easy to become dependent on computers. Computers are used as the main tool to compile computer systems in accordance with relevant specifications and requirements. There is no major difference in how anyone operates and manages the system. In order to effectively realize file security management in the network-based platform, it is necessary to strictly follow the relevant requirements, so as to reduce the problems existing in file management. Under the network environment, the information security management of archives in colleges and universities mainly depends on network and computer technologies. Network technology experts are also needed to manage the archives. The computer system itself has certain weaknesses, and security problems are prone to occur, which will affect the security of archive information. Although some research have been done on information security management in China, most of the computer products still come from abroad, which hinders the development of China's information security, seriously lacks a self-protection system, and has been in a passive state ^[6]. Therefore, at present, our country should improve the development capabilities of information security technology, conduct research, and develop more software and systems suitable for university archives information security management, which is conducive to ensuring the security of archives and providing support for archives information security.

4.2. Optimizing firewall technology

Firewall technology is mainly established on the basis of information technology and network technology. Firewall technology is gradually being applied in public and private networks. The application of firewall

technology can ensure the safe and stable operation of the network system as much as possible ^[7]. There are a few main functions of firewall technology. Firstly, firewall technology can ensure network security. The application of firewall technology can effectively improve the security of the network by filtering the unsafe factors existing in the network. Second, the application of firewall technology can optimize network security issues. In the security configuration scheme, firewall technology can be applied to all security software, so that this technology can be integrated with the network, and the problems in the network system can be discovered and resolved in time. Third, the application of firewall technology can avoid the leakage of file information. Through the application of firewall technology, the internal network can be effectively divided, so as to isolate the key network, internal network, and other networks to ensure the security of archive information ^[8].

4.3. Improving network development capabilities

In the current network environment, a large number of resources can be linked to the Internet, and all grid nodes are connected through the Internet. Through Internet technology, different network nodes can be effectively linked, and users can monitor and manage the network environment. The grid mainly guarantees the security of the environment through the security infrastructure ^[9]. Network security facilities can help ensure secure communication, effectively avoid data leakage, and also support single sign-on for users. Through the application of security technology, the convenience and security of the network computing environment can be improved to ensure the information security of university archives, and different access rights can be set for different users to improve the security of archive information.

4.4. Improving the comprehensive quality of archives management personnel

An important factor in the file management work is the file management personnel. If we want to use college archives to provide better services for the school, we need archives managers to continuously improve their comprehensive ability and quality. (1) Archives managers need to have a strong ability to write official documents, and they also need to improve their ability to use equipment. (2) Archives managers also need to have rich knowledge and improve their comprehensive ability through continuous learning. (3) Archives management personnel need to have correct ideas and ideology and be innovative. (4) Managers also need to have good communication and interpersonal skills so that they can alleviate problems that occur the archives department and provide good publicity for the archives, so as to gain people's trust and support, and improve their own reputation. (5) Besides, managers also need to have good comprehensive ability and management skills, including the ability to process and obtain different information, so as to realize resource sharing. Archival management personnel also need to have strong computer operation ability and effectively master computer security technology. If they encounter hacker intrusion and virus intrusion, they need to actively do a good job in resistance to ensure the security of archival information resources.

4.5. Improving the hardware environment of archives information security in colleges and universities

In a network environment, the archives information security management work in colleges and universities is facing the threat of the network. To avoid the loss of data and resources, the archives department needs to purchase advanced equipment with high safety factor and quality. Different scope of authority can be set for different archive information to ensure the security of archives ^[10]. When carrying out the security management of archives information in colleges and universities, it is necessary to install anti-virus software. Computer virus is an important object of intrusion by archives departments of universities, and it

is also an important target of digital archives information security management. Data-scanning technology can be applied, and anti-virus software should be installed and updated regularly to ensure the anti-virus capability of the software, and so that the defects of the system can be rectified in time to ensure the security of the information.

5. Conclusion

Generally speaking, under the network environment, the information security management of college archives is constantly being optimized and developed, which can further expand the application scope of information technology and provide users with more convenience. However, there are many shortcomings in its application, which should be analyzed, and targeted countermeasures needs to be put forward. These countermeasures include strengthening development capabilities of our country, optimizing firewall technology, improving network development capabilities, improving the overall quality of archives management personnel, and improving the hardware environment of university archives information security.

Disclosure statement

The author declares no conflict of interest.

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