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Exploration of the Computer Network Information Security and Protection Measures

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Abstract: In view of the characteristics of computer network information security, starting from the risk problems faced by computer network information security, this paper adopts the analysis and comparison method of a large number of references. and business development, etc. have brought a very serious impact. Therefore, this paper takes "protective measures of computer network information security under big data" as an important research object, hoping to reduce the security of computer network information through this research. In order to solve these problems, relevant personnel need to conduct in-depth analysis and research on computer network information security and protection strategies, so as to improve the security of computer network information.

Keywords: *Computer Network, Information Security, Protection Measures*

I. INTRODUCTION

In recent years, with the continuous attention and emphasis on computer network information security protection work in China, higher requirements have been put forward for computer network information security protection work. However, in specific practice, computer network information security still faces many risks [1]. It can collect, calculate and integrate independent relevant data information into various information resource bases [2].

With the rapid development of social science and technology, big data has penetrated into every corner of human life [3]. As a result, people have a new understanding of big data. Big data penetrates into different industries and fields. In this process, the data information at this time is not simply a storage medium, but a large database that can integrate various data types, with operational It has many characteristics such as fast speed, flexibility and change, and low operating cost [4].

The increasingly serious problem of network information security requires the importance and necessity of strengthening the construction of computer network security. Starting from the problem of computer network information security [5], this paper makes the following specific elaboration on how to realize the security prevention of computer network. Driven by the rapid development of the new era, people's demand for computer information networks is also increasing [6]. In this context, network information security technology should also increase research efforts, which can not only effectively avoid the occurrence of various network information security problems, but also contribute to the stability of computer networks to varying degrees [7].

Under the background of the development of big data, the computer network shows a strong openness in the later operation process. big risk. With the continuous improvement of my country's scientific and technological level, the functions of modern computers are constantly improving. However, modern computers generally have a relatively obvious defect, that is, computers do not have perfect safety protection devices situation [8].

Based on the development of information and communication technology, a large amount of data information is spread all over the world through electronic devices and networks [9]. Electronic information published by others can be obtained within a very short period of time. The rapid transmission of large amounts of information is known as the "big data era". Computer network technology has brought great convenience to people and changed people's way of life [10].

But it also brings many security problems to the normal life of human beings. The security of information on a computer network cannot be guaranteed [11], and these security issues may cause huge losses to network users and network systems. Therefore, the topic of "exploration of computer network information security and protection strategies" has become the focus of the computer industry. In order to maximize the effect of computer network information security protection, we must conduct in-depth research on the problem [12].

For big data, the scope involved is gradually expanding, and the relevant information that can be stored will continue to increase over time [13]. At this time, the data information becomes more burdensome in terms of security issues and management. To a large extent, the confidentiality of data information has been continuously reduced. As the era of big data is gradually entering a mature stage, big data has also become an important indicator of social and economic development [14]. All major Internet business giants around the world use big data to re-examine and define their own business development directions and products, and promote its better development [15].

However, under the open Internet environment, the problem of computer network information security has become increasingly prominent, and attacks such as hackers and viruses have brought great threats to network information security [16]. A good foundation has been laid for sustainable development. However, due to the complicated content involved in the network, there are relatively many security risks. For example, the information is changed, leaked, and destroyed, etc., which will cause irreparable losses in serious cases [17]. Let some lawbreakers use this state of no anti-counterfeiting to obtain some valuable information for themselves, and then commit crimes. This endangers the safety of users to a large extent, and also affects social and economic development to a certain extent [18].

II. THE PROPOSED METHODOLOGY

A. Computer Network Information

In view of the characteristics of computer network information security, starting from the risk problems faced by computer network information security, this paper adopts the analysis and comparison method of a large number of references. and business development, etc. have brought a very serious impact.

	Dependent variable			
	Confidentiality	Integrity	Availability	Accountability
Constant	-1.63E-016(0.083)	-4.98E-017(0.088)	-1.77E-016(0.087)	1.50E-016(0.089)
Cooperativeness	-0.266*(0.132)	0.087(0.140)	0.113(0.139)	-0.073(0.142)
Innovativeness	0.130(0.144)	-0.196(0.153)	-0.112(0.152)	-0.006(0.155)
Consistency	0.435**(0.153)	0.275(0.163)	0.344*(0.162)	0.266(0.165)
Effectiveness	0.318(0.164)	0.432*(0.174)	0.292(0.173)	0.398*(0.177)
F	15.651	11.649	12.034	10.664
R^2	0.433	0.362	0.370	0.342

Fig. 1. Computer Network Information

Therefore, this paper takes "protective measures of computer network information security under big data" as an important research object, hoping to reduce the security of computer network information through this research. In order to solve these problems, relevant personnel need to conduct in-depth analysis and research on computer network information security and protection strategies, so as to improve the security of computer network information. Relevant data show that the main external factors that affect the security of computer network information are natural disasters or security problems caused by the mistakes of relevant personnel in operation. For computer users, the account belongs to the user's personal property, and the private information and property belonging to the user are hidden in the user's personal account. Once stolen, the hacker attack will affect the operation of the computer network, or even paralyze it.

As shown in Figure 1, it is a network-based attack mode of hackers. It can be seen from this that hackers inject Trojan horses or virus programs based on server attacks. The imperfect supervision system will lead to various security risk problems; finally, storage devices also have certain security risks, which are easily infected by hacker attacks. Viruses, thereby threatening the information data stored in the computer's internal disk. These all need to be effectively solved by strengthening protection. Let some criminals use this state of no anti-counterfeiting to obtain some valuable information for themselves, and then commit crimes. This endangers the safety of users to a large extent, and also affects social and economic development to a certain extent.

$$ev = 20 \times AV \times AC \times AU \quad (1)$$

$$ev_t = temporal\ weight \times ev \quad (2)$$

B. Computer Network Information Security

Based on this situation, the relevant staff must do a good job of updating the computer network information security maintenance and supervision system to ensure that the update and development speed of the system can keep up with the development pace of computer information technology. At present, human factors are also An important aspect of computer network information security. To this end, in the protection of computer network information security, it is necessary to improve network security awareness, effectively build a security environment, and ensure the safe operation of computer information systems.

$$E^2 = O^3 - O_1 \quad (3)$$

One is to improve users' awareness of network security. From the current point of view, computers have been widely used in people's daily life. While bringing a lot of convenience to people, many netizens have ignored a series of risks that computer networks may face. It is wrong to think that it is actually very safe, which also provides an opportunity for hackers to a certain extent. In the extraction of this serious security problem, the firewall technology is enhanced to keep these malicious software out of the computer protection system., Regularly scan and patch computer systems and vulnerabilities through reasonable means, which can largely inhibit virus intrusion and improve the security of computer use.

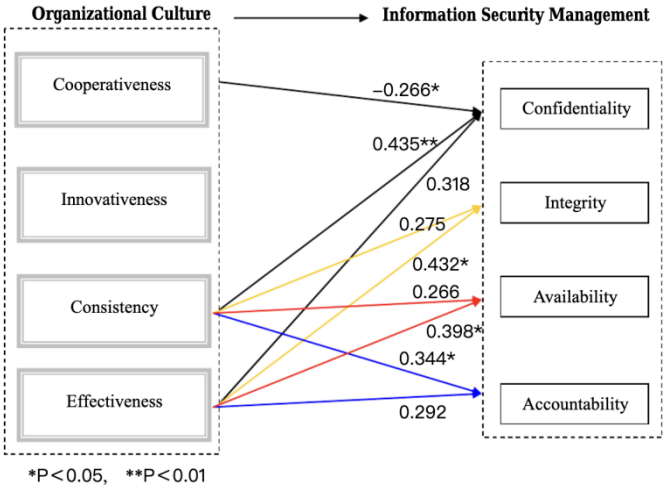

Fig. 2. Computer Network Information Security

Under normal circumstances, because the data information inside the computer network is easily affected and destroyed by external factors such as hackers, which will affect the normal use of computer users, and will be affected by many aspects during the use of the computer. Under the system will produce a series of security problems and system loopholes. Firewall technology is a technology that exists between computers and computer networks, which can effectively block the attacks of network hackers. Network users on the computer should set up a safe protective device for the computer by using the advanced firewall technology in the society correctly.

DV-Protection Measure				
IV	Standardized β	Sig	VIF	Supported
Cyber-crime victimization	0.150	0.019	0.949	Yes
Cyber-security awareness	0.155	0.006	0.948	Yes
Education level	−0.211	0.019	0.997	Yes
Adj.R2		0.091		
F		F(3,284)=10.554,P<0.000		
N		288		

Fig. 3. Iot-Based Smart Transportation

C. Network Information Security and Protection Measures

Since computers have entered people's daily life and brought great convenience to people's daily life, some netizens mistakenly believe that the computer network has no risks and is very safe. Therefore, netizens' awareness of security protection is seriously lacking. For computer network monitoring and monitoring, it is mainly set up for intruders. Online network monitoring and monitoring can effectively monitor the network that has been invaded or is about to be invaded.

$$T(e) = T(u) = \{NB, NM, NS, ZE, PS\} \quad (4)$$

Network monitoring is mainly aimed at areas that have been attacked or whose own security systems are weak. The third is to do a good job in daily vulnerability repair and other work to improve the subjective initiative of network security protection. Users should do a good job in daily network security maintenance. Once a system vulnerability is discovered, it should be repaired in time, and daily antivirus and other detection work should be done well. The effective setting of the firewall can provide effective protection to the computer network information security to a certain extent. Therefore, the scientific reference of the firewall should be given full attention. For universities or government units, the monitoring and monitoring of computer networks are mainly set up for intruders. Online network monitoring and monitoring can effectively monitor the network that has been invaded or will be invaded. Network monitoring is mainly aimed at the places that have been attacked or whose own security systems are weak.

In the process of modern computer operation, the problem of security loopholes also greatly affects the security of network information and systems. Therefore, in order to solve this problem, relevant personnel should strengthen the computer system upgrade. As a computer user, if If key data information is deleted by mistake, there will be security problems of network information. Some old computer network information defense technologies are no longer safe, and most computer users do not have the ability and technology to resist various virus intrusions. An important means of expansion, some criminals use computers to send emails to different user mailboxes, and then inject Trojan horses or viruses through user clicks.

$$F(t) = 1 - \frac{k}{t}^{a} \quad (5)$$

CONCLUSION

To sum up, with the rapid development of computer technology, more and more people pay attention to the protection of computer network information security, because whether the computer network information security protection work is carried out in place directly affects the confidentiality of company information and confidentiality of personal information, in order to provide a strong guarantee for computer network information security, in addition to further optimizing the computer network information security management system, we must also take targeted precautions against illegal intrusions, strengthen training and supervision, and then promote The effect of computer network information security protection has been significantly enhanced.

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