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Prevention of security threat to accounting information in the information age

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ABSTRACT

Accounting information has progressed largely in China. In the information age the network has gradually replaced traditional computerization. Nowadays with computer playing a more and more important role, coupled with network technology's characteristics, it is impossible for us to avoid meeting the security and privacy threads. And undoubtedly these threads would slow accounting information's development. Accounting information security has been discussed as an important issue in our national information meeting. In the current developing condition, accounting information security problem has become more complex and prominent. Meeting such a security threat it is necessary for people to set up a comprehensive management system to defense and resist outside interferences and damages. Firstly this paper introduces some basic knowledge such as information security and accounting information security, analyzes the defects in current theory research, demonstrates the importance of accounting information security and the existing problems, and finally emphasizes the main source of the threats to accounting information security and the main factors. Based on the practical work this paper introduces the new way to prevent accounting formation from threat and to build a new security management system based on the risk asset and control method, making accounting stuff work in a safe network condition.

KEYWORDS

Accounting information; Accounting information security; The information age; Risk management.



INTRODUCTION

In the international information security means reliability, confidentiality, availability and integrity, but in China this term doesn't have a unified meaning. Coupled with the rapid economic growth the information age has gained a rapid growth, so the accounting information would be spread widely. With the increasing need of the society for accounting information, it is necessary for accounting information to spread and share through internet, so the security problem has gained more and more attention with the increasing expansion of accounting information. In the information age computer has played an indispensable role in nowadays, but its weak of easily being attacked making information system facing serious security problem. The said threats above include the computer virus and activities for stealing money, which all make accounting information highly depending on information system meet serious challenge. Because the financial electrical network management starts relative late, the stealing and damaging network information has become pervasive, especially in the process of accounting information the embezzling of assets through network has become more and more absolute. According to the current statistics, among all computer crimes 60 percent of them are belong to financial crime. In 2007 there were 127million data being leaked. So the data security should be paid more attention by people. How to deal with the threat to information in this age, and so that to avoid data being damaged and steeled due to illegal activities should become every accounting practitioners' focus.

ACCOUNTING INFORMATION SECURITY

The definitions about information security

Information security can be divided into three layers : information security, system security and the negative effect on the society. In other words information security problem refers to any activity influencing information's storage, transmission and usage.

(1)Information security points to information's confidentiality, reliability and integrity, which need technology and management to safeguard.

(2)System security refers to the security of whole process from producing to transformation. Although in nowadays people pay much attention on network, they leak sufficient focus on other information system.

(3)The negative influence from society is a threat to information security. In accounting information security it refers to benefit loss brought to relatives by illegal activities.

Besides security and convenience the design of Information security system should also consider the component, juncture, stuff and environment other factors. It means that designers should comprehensively consider three aspects of management, strategy and technology. Technology stuff should consider more about information security and managers should also consider security management work in essence. Figure 1 is a security design diagram.

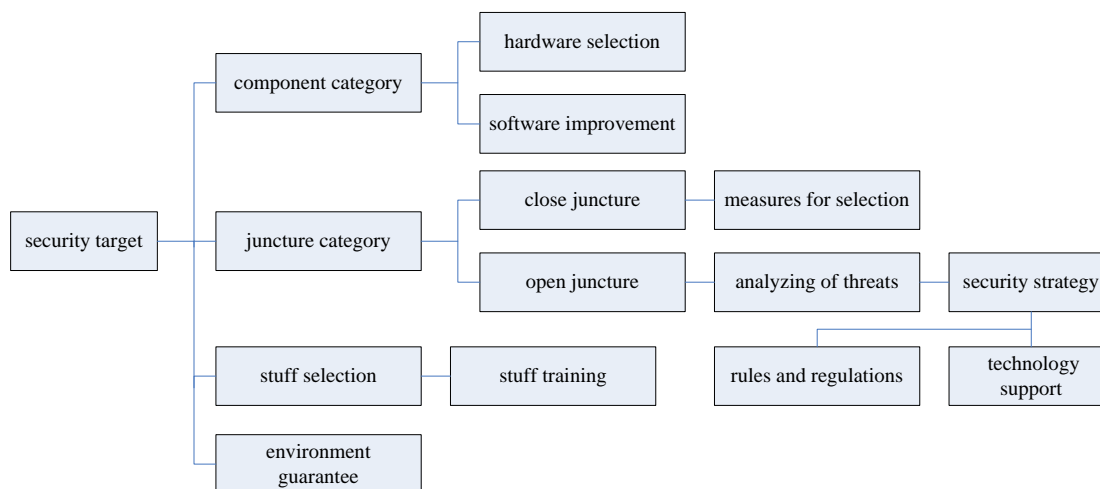


Figure 1 : The security design diagram

The current research situation home and abroad

Accounting information plays an important role in enterprise's information management and every enterprise pays much attention on improving accounting information system, because in the information age the information system must maintain in a controllable and detecting condition. In this information age the foreign study of accounting information security focuses on the construction of enterprise's information system's security. Through strengthening the interior management system, the accounting information' reliability and authenticity can be guaranteed. System leak would be the biggest threat to accounting information security, because any mistaken operation or mistaken entering would damage database deadly and increase the possibility of being steeled. And the complexity of network application program would

make information more easily be attacked. So when designing accounting information system designers should consider the threats to platform and application such as identification system.

Information system security decides information security. In the 1990s western countries had launched relative regulations for information system because of the increasing of network crimes, such as the Evaluation Criteria for Information Technology Security by Britain in 1991, and the Evaluation Criteria for Information Technology Security by five European countries and America and Canada. These regulations all propose notions such as security management, maintaining, testing, restoring and evaluation. In 1998 international information security experts introduced a new security plan, involving protect, detect, response and restore, also called PDRR model, which is shown in Figure 2:

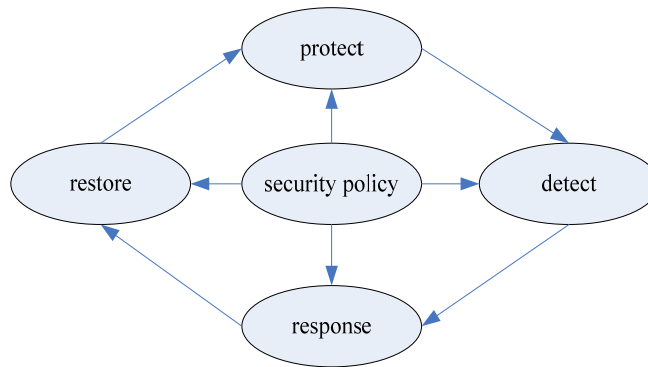


Figure 2 : PDRR’s structure model

According to Chinese law information crime refers to the illegal activity against china’s laws through information system. In nowadays the main threads to accounting information security include unauthorized register and visiting. Usually users can visit network with the authority, so those who do not be authorized would damage or steal information and virus are easier to damage system, even leading to the system’s paralysis and close.

Base on the foreign study of information technology, Chinese experts in information security also introduce many method about improving accounting information system security. Through selecting relative information about accounting information security, this paper has shown the published documents and literatures, which are shown in TABLE 1:

TABLE 1 : the retrieval result of accounting security documents (1979-2010)

Key Words	Economy Research	Management World	Accounting Research	Audit Research	Chinese Accounting Comments
Internal Control	1/2	1/1	73/160	65/225	0/5
Accounting Information	4/5	6/6	98/539	11/35	6/7
Accounting Information Quality	0/0	1/1	19/89	1/3	2/2
Accounting Information Security	0/0	0/0	0/0	0/0	0/0

The retrieval result has shown that the new ideas about accounting information security are below:

(1)Service resource must be managed and controlled strictly. When comes to the common way of network attack against enterprise Baofeng Huo provides solutions such as probe, denial of service and TCP hijacking.

(2) In 2003 Yuke Hu proposed that accounting information system’s instability and openness are all channels to threat system’s security.

(3) In 2005 Ruisheng Lee proposed that accounting information security problem is produced with the increasing need for accounting information diversification.

(4) In 2006 Chao Sun and others proposed an idea that factors threat accounting information security can be divided into subjective and objective factors.

(5) Jian Lee and Ziyu Shen proposed in 2007 that operators and users’ lack of security awareness and mistaken operation and the weak information system are all factors influencing accounting information security.

The accounting information systems’ characteristics in the information age

In the information age network and database has largely progressed and their hardware have spread all around the world and been connected by computer system. The data communication should need certain network agreement to realize

resource sharing. So the accounting information system must have a strong data processing capacity. The characteristics of accounting information are:

(1) The request of low cost would lower accounting application and management's cost, in other words marginal cost would be reduced much and scale economy would be easier to shape. The reducing of cost presents in four aspects, including information collection cost, transition cost, monitoring management cost and claiming expenses.

(2) Having a high efficiency, the work would win a high currency.

The traditional accounting processing is very complex, but in the information age the processing would realize the real-time processing. Its most absolute advantage is that financial office can receive every department's information in time, so that to finish accounting work with the largest efficiency. In the information age accounting system would be in a real-time communication with every department, not as an independent organization. Accounting information system would integrate every department's information and provide leaders an integrated accounting information, the processing result is shown in Figure 3:

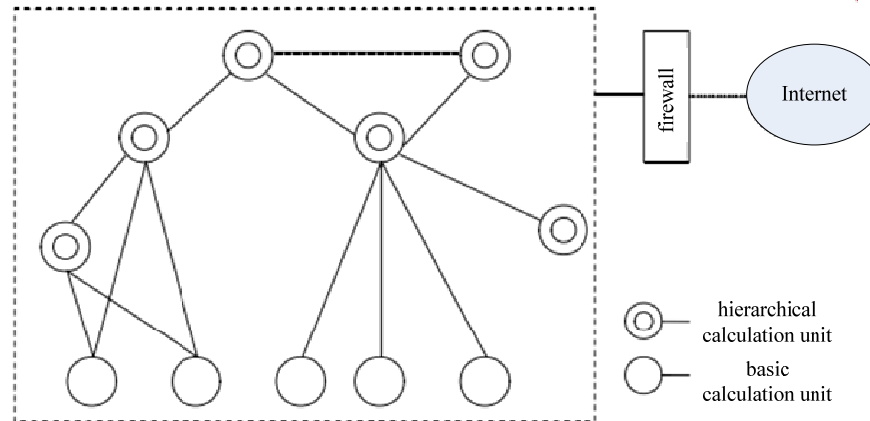


Figure 3 : The distribution structure of information system

THE THREAT TO ACCOUNTING INFORMATION SECURITY AND THE PREVENTION

The threats

In the information age network technology has been applied more widely, promoting the reform of social production structure and of the traditional management model and financial regulations. In nowadays accounting information system can provide service such as long-range control, online financial management, online payment and online query, which traditional accounting model cannot provide. Such an improvement enterprise's capital flow, material flow and information flow can be highly cooperated. But the opening environment in the information age brings many threats to security, which are:

(1) The financial information steered by criminals may be relative to enterprise's business security. The financial information cannot be damaged or leaked, or it would bring serious interest loss to enterprise.

(2) The openness of the information age enable people to share and find information more easily, but it also make it possible for someone to do illegal activities such as altering enterprise's website, making it unavailable. And computer virus are also the serious threat to accounting information system, because in nowadays these virus has become more difficult to be found and more destructive.

(3) Enterprise lacks necessary internal management system. In the information age accounting information system's management and maintaining need the help of network system, which is a complex process, producing many complex accounting information. So it needs enterprise to clarify internal management including duties and authority limits.

(4) Financial software' losing efficiency would cause lots of accounting information losing. In the information age the accounting system cannot finish task without financial application software. The stand-alone version or the network version are all relative to hardware' compatibility, upgrading and data transformation. Once data format are not compatible or the hardware's interfaces are not coordinated, the accounting information would be unavailable or even lost.

(5) There are not sufficient personnel. In the information age accounting information system needs professional and skilled personnel to maintain and support system's operation. The accounting information system need high-skilled personnel or the financial system would face the threat of being chaos or even stopped.

The main response

To ensure the referred above threats could be resolved and do prevention well, the resolution must be targeted and anti-expansion measures must be applied to guarantee the accounting information system's operation.

The basic management task

Accounting stuff and operators all needed to be trained in skill, security awareness and working attitude, making all staff using accounting information system sufficiently understand the system, so that to reducing technology damaging and

guaranteeing the whole information system’s operation. Every staff should aware their duty’s importance and any one making mistakes would be punished. The emergency response plan should also be improved.

Based on accounting information system’s regulations, there should be improved document copying. The regulation of important accounting system should be strengthened, especially strengthening the protecting of data hardware. Besides, enterprise should also optimize information protection plan, build restoration plan to reduce the damage to the least and guarantee system’s normal operation. Table shows us the general resolutions. The response strategies is shown as TABLE 2.

TABLE 2 : Response strategies

plan	description	example	the using situation	validity
event response plan	when system is attacked the response should be organized	treatments, intelligence selecting and information analysis conducted when system is attacked.	when attacking event happens	make a response in time
restoration plan	a strategy applied in happening disaster to reduce losing and make system become normal.	the restoration of losing data, the processing of building losing service, stopping the process to protect data and system.	just after event determined as disaster	short-time restoration
enterprise’s continuous plan	all steps guaranteeing enterprise’s continuous operation when damaging degree needs to be determined.	the preparing steps for the operation of lower data center and the building of long-distance site.	Influence in determining the organization to continue running after the disaster	Long-time restoration

The risk management plan for accounting information security

Combined with the current risk management method, there is risk relief strategy more practical to deal with threats and leaks to a large extent. After an enterprise’s modern accounting information system is built there need a security management system to test if the system has leaks or easy to be attacked and to test if every potential threat is acceptable, so that to take efficient measures to deal with these threats. The detail security risk control process for accounting information security is shown as Figure 4.

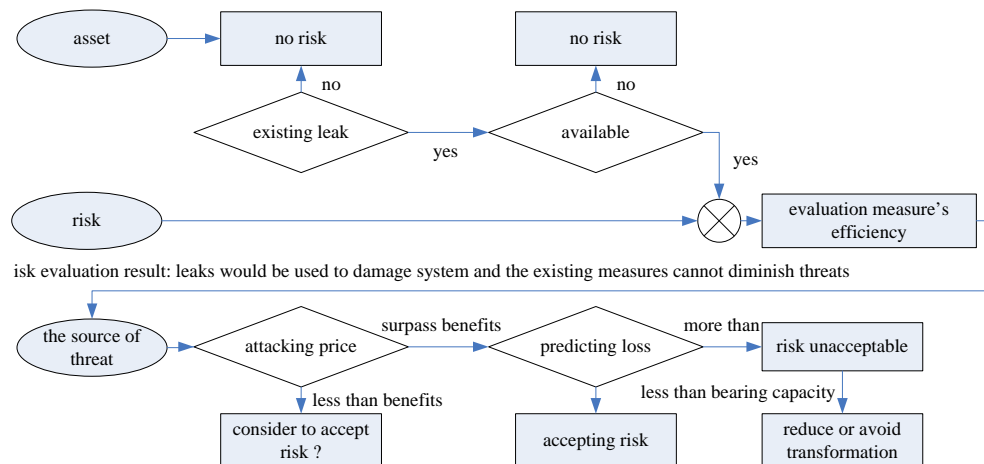


Figure 4 : Risk management and control flow diagram

CONCLUSION

This paper, based on accounting information system’s current situation and characteristics in the information age, analyzes the main threats to accounting information system and the main causes, then provides policy for these threads combined with modern risk management and information security knowledge. Accompanying with threats, in the information age accounting information system also has been promoted greatly, and this process has been hardly slowed by security threats. Many enterprises still apply traditional working model. The more application of prevention measures can reduce the threats to the system. The wider application of accounting information system being improved to enterprise can accelerate its development.

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