

# Analysis and Research of Enterprise Information System Security Based on e-Commerce

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**ABSTRACT.** *Nowadays, the world has entered the information age. Information systems have been widely used in various fields of society, and the importance of information has been widely accepted. Enterprises need to guarantee the security of e-commerce information system more and more urgently, and need to adopt a three-pronged approach of management, hardware and software technology to establish an e-commerce information security system. An information system is a series of complicated links, and security measures are required to permeate all aspects of information systems. With the in-depth study of e-commerce, people gradually realize that the security of e-commerce is not just a technical problem. Information security in e-commerce includes not only computer network security, but also information integrity, identity confirmation and non repudiation. This paper describes the security of enterprise information system based on e-commerce, and analyzes the unsafe factors of an enterprise information system based on e-commerce.*

**KEYWORDS:** *Information system, E-commerce, Security measures*

## 1. Introduction

With the development of information technology and network technology, networking and globalization have become an inevitable world trend [1]. With its two-way information communication, flexible transaction methods and fast delivery methods, e-commerce has become the mainstream method of business trade [2]. At present, the process of global economic integration continues to be intensifying. The emergence and maturity of Internet technology have further broken down and eliminated trade barriers, and resources such as goods, human resources, capital, and technology have been carried out in the world without barriers. In the traditional sense, national boundaries are no longer recognizable [3]. Since the information system covered by the enterprise e-commerce system is used by various organizations of the enterprise to implement various resource information systems of the enterprise, the nature of the industry in which the enterprise is engaged is closely related to the market competition of the enterprise itself, and many of the information involved are confidential. Hence, information security issues are

particularly important [4]. Due to the remote exchange of information, the two parties of the transaction will not have direct contact. In the transaction negotiation between the two parties, there are often mismatched goods, fraudulent payment, and fraudulent sample [5]. In the development trend of e-commerce globalization, the security issues in e-commerce transactions are also quietly attacking [6]. Information security in e-commerce includes not only computer network security, but also information integrity, identity confirmation and non repudiation.

The 21st century is an information age. The information network is closely connected with the society. Network security is no longer a purely technical problem, but a real social problem [7]. Information is the data that are meaningful to the enterprise after being sorted into the enterprise. Data are a series of original facts, which represent the events inside and outside the enterprise. Before it is processed, people cannot easily understand and make use of it [8]. Due to the existence of global communication and control system, customers can grasp the information of product price and quality at any time to conduct global procurement. This phenomenon strengthens competition and forces enterprises to seek survival in the open and unprotected global market [9]. With the in-depth study of e-commerce, people gradually realize that e-commerce security is not only a technical problem, but a complete set of security system combining prevention, detection and response measures [10]. This paper describes the security of enterprise information system based on e-commerce, and analyzes the unsafe factors of enterprise information systems based on e-commerce.

## **2. Analysis of Unsafe Factors of Enterprise Information System Based on e-Commerce**

In the e-commerce environment, the security information system mainly provides security protection for information transmission, storage and access, so as to prevent information from being stolen, tampered and illegally operated. The basic elements of information system security are security services such as confidentiality, integrity, availability, authentication, access control and anti-denial. Information destruction caused by an illegal invasion of e-commerce system will not only damage the immediate interests of enterprises, but also greatly affect the trust of customers and lose the trading opportunities of potential customers, thus bringing immeasurable intangible losses to the subsequent operation of enterprises [11]. The performance of related technical facilities within the internal network or across the network is constantly increasing, and at the same time, the development of these technologies has also been promoted. Faster network connections, more remote users and more advanced mobile networks, the application of these technologies has become the norm. In an increasingly complex network environment, we need to consider a more complete security strategy to provide effective security management no matter when and where. The e-commerce system runs on certain computer hardware, and strengthening information security at the hardware level can prevent and prevent the hidden danger of information to a great extent.

The security management system is considered to be quite complicated. It is not only a technical issue, but also an organic combination of strategy, management and technology. It generally includes three categories: security law, security management and technical security. Data execution protection can help protect computers in information systems from viruses and other security threats. These viruses and threats try to run malicious code from protected memory locations to launch attacks. Such threats perform destruction operations by taking over one or more memory locations that the program is using. In order to cope with consumerization, the enterprise's security policy needs to place emphasis on those network security devices that have not deployed endpoint agents or cannot work normally. No matter what level of encryption measures, it is to improve the confidentiality and integrity of data. And we have deployed more and more encryption measures on each layer, but for network security devices, using encryption technology also brings many challenges. No manager can ignore information systems, because they play a key role in contemporary enterprises. Digital technology is changing enterprises, and the overall cash flow of the world's top enterprises depends on information systems. The enterprise information system security platform under the e-commerce environment can also be analyzed from various angles, such as different platform levels of the system, different levels of the network structure and security characteristics.

### **3. Overall Protection of Information Security**

#### ***3.1 Security Precautions of Operating System***

In e-commerce, a large amount of information transmission is realized through the specific software operation used by both parties to the transaction. Therefore, many security risks exist in the software or the technology used by the software. For the production control area, the real-time system is separated from the non-real-time system, and the production control area is the most important asset in the system with the highest security level. For the management information area, the systems related to production are separated from those unrelated to production, that is to say, the management area and the information area are divided into two areas. From the point of view of software and hardware, the establishment of information system should be based on powerful hardware, which requires enterprises to set up local area networks internally first, and connect the computers of various departments of enterprises to realize communication and data sharing among internal departments [12]. The spread of computer viruses and their forms is increasingly diversified. Therefore, anti-virus work in intranet is no longer just the detection and removal of a computer virus. Norton anti-virus software is used to establish a multi-level and three-dimensional virus protection system. In e-commerce activities, in order to guarantee the authenticity and reliability of the identities of both parties, digital signatures are often used to confirm the identities of information senders. One of the important foundations of network security is a secure operating system, because all enterprise information applications and security measures rely on the operating

system to provide the underlying support. Vulnerability or improper configuration of the operating system may lead to the collapse of the entire e-commerce security system [13]. Before transmitting encrypted data, it is necessary to identify the other party's identity and confirm that the public key really belongs to the receiver before sending the data out. In order to confirm the public key, it can be completed by public key authentication, which is digital authentication. Some applications can be given by suppliers. Different enterprises have different situations, and some applications need professionals to develop their own departments. Only when the hardware with superior performance is organically combined with the software with complete functions can the information system play its due role.

### ***3.2 Security Designs of Network Structure***

In the information center, different access areas are divided according to different security levels. Access between different areas needs to be isolated by security equipment, and access control is carried out according to different security levels. The application of enterprise e-commerce system covers two aspects: internal office and information service facing the public. As far as internal office work is concerned, enterprise e-commerce system involves the information flow between departments and between higher and lower levels. The isolation gate adopts a unique switching mechanism, and the network is actually in a disconnected state when these inspections are carried out, and only the data that pass the strict inspection can enter [14]. Because the isolation gateway only extracts data and exchanges it into the intranet, the intranet will not be attacked by the network layer, which realizes the safe exchange of data while physically isolating. In view of the complexity of users' online access behavior and content at present, Tianrongxin online behavior management can be used to finely manage the internal online behavior, which can be transmitted on the behavior visualization network without affecting the normal business, and the access behavior and content can be saved and audited according to regulations. In order to ensure the safe and reliable operation of information and the confidentiality and security of communication among various departments of the enterprise, the enterprise information department should plan and set up a "certificate management organization" specially serving various departments of the enterprise.

## **4. Conclusion**

Enterprise network information security is not only a technical problem, but also a security management problem. We must comprehensively consider safety factors, and formulate reasonable goals, technical schemes and related supporting strategies. In the process of accelerating the development of e-commerce, enterprises should first pay attention to solving the problem of information security. In the information center, different access areas are divided according to different security levels. Access between different areas needs to be isolated by security equipment, and access control is carried out according to different security levels. After the

implementation of e-commerce, the security of an information system should focus on data security and access security of the system in addition to its own network security. Enterprise information security not only needs to reduce potential security threats by using current resources, technologies and security strategies, but also closely track the development trend of these threats in the next year to ensure enterprise network information security. Information system can play its due role only by combining the excellent hardware with the complete software.

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