



Chapter V

Security Risk Management Strategy of Financial Services Institutions

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Abstract

This chapter is about a new security risk management strategy for financial services institutions. The proper strategy presented here takes the systematic and cybernetics theory as the instruction, regards the risk analysis process, the management strategy implementation, and the monitor and audit as an organic security management system. Thus the strategy is an autoadapted open system to defeat various safety threats dynamically. By comparing management of electronic commerce (e-commerce) security risks with that of traditional financial risks, this chapter suggests accurate security risk measurement using quantitative analysis and further integration of the e-commerce security risk with traditional financial risks.

Introduction

Along with the high-speed development of the Internet, e-commerce is attracting more and more users owing to its characteristic of openness, liberty, and internationality, but, at the same time, the safety and security problems are becoming more and more serious. In an online investigation of e-commerce by a world investigation company, when asked why people don't prefer the online payment, the majority replied that they worry that hackers may steal their credit card information. And according to the FBI's 2005 Computer Crime Survey, "Over 64% of the respondents incurred a loss. Viruses and worms cost the most, accounting for \$12 million of the \$32 million in total losses." Internationally, this situation is not an exception.

In China, CNCERT/CC, which is the central institution collecting reports of security incidents for China's inland network, received 65,679 reports in the first two quarters of 2005, more than the total number in 2004. Among these reports, 45.91% were home page tamperers; 29% were network fraud; and others included DoS, junk mails, worms, Trojan horses and so on. Since 2004, threats of network fraud in China have been more terrible, and the victims are mainly financial and e-commerce Web sites. E-commerce and financial Web sites are the main targets of attacks by hackers and their security urgently needs to be strengthened. How to establish a secure, reliable, and convenient e-commerce application environment and provide enough protections for information security has already become the hot topic for financial services institutions as well as their customers.

Whether in the academic, industrial, or practical field, there are many studies about e-commerce security risk management at financial services institutions. Rich experiences have been accumulated, and some standardized regulations and codes have been formed, but several problems still exist. For instance, security risk management strategy does not possess the capability of integrity and adaptation without systematic and cybernetics theory as a guide; risk assessment still settles at a grading stage. Security risk management does not comply with the traditional risk management of financial services institutions and so on. In view of these points, this chapter attempts to make improvements on the basis of existing research and studies and provide a proper security risk management strategy for financial services institutions engaged in e-commerce.

Background

Different Angles of E-Commerce Security Research

It is taken for granted internationally that security is the key and core problem in the field of e-commerce. Wang (2005) gives a generalized definition of e-commerce security: "E-commerce security means to protect the organizational and individual assets (including physical and electronic assets) in e-commerce system from unauthorized access, use, distortion and destroy. E-commerce security covers every part of the whole e-commerce chain, such as client terminal, communication channel, as well as relative internal information system of the

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