

A Study on the Improvements of Information Security Management System for Environment Education Institutes

Chulki Jeong and Sungjin Ahn
Sungkyunkwan University of Korea
chulki.jeong@gmail.com¹

Abstract

Recent information and communication technology (ICT, Information Communication Technology) environment for the rapid changes in the information security threats and vulnerabilities in assets than ever recognized as very important. For proper information security management process improvement activities as part of the Information Security Management System certification and operate subject to gradual institutionalization and growing. Information Security Management System (ISMS) is a systematic organization to protect the information assets of an organization from the threat of cyber breaches respond to organically mean a comprehensive management system. This paper presents a variety of serious security incidents occur and appropriate educational environment to develop information security management system model. Applying the learning environment to enhance the level of data protection and information security management and direction of efforts to find ways to improve the model for improvement to propose

Keywords: *Information Security Management System, Security Management, Information technology governance, Governance*

1. Introduction

Information and Communication Technology (ICT, Information Communication & Technology) has developed, over the Internet in various forms of data storage and processing device is actively used in the coming deployment. With the rapid development of the Internet, the Internet is emerging as a major problem of social dysfunction, it can prevent it became necessary to devise a means.

Information security management system Promotion of Information and Communications Network Utilization and Information Protection Act based on information and communications service providers or operators of a certain size are obliged to target as the regulations are strengthened, to prevent a large-scale security incidents, giving a big help.

Laws of the Information Security Management System Promotion of Information and Communications Network Utilization and Information Protection Act pursuant largest telecommunications service providers or operators of certain regulations intended to strengthen the mandate as the large-scale security incidents to give a great help to prevent [1].

This educational environment by applying the information security management system established and documented in a systematic work, ongoing operation and management of risk factors for each region and that the risk is measured according to the degree appropriate

¹ * Corresponding author: Chulki Jeong

measures to provide an educational environment business information security management system want to establish a process to plan.

Korea surprised the world with the development of IT education environment and rapidly spread information and communication infrastructure and thus also to keep pace with multimedia learning environment so that you can implement quickly oriented education in pursuit of the constitution has been changed.

However, since the 2003 crisis 1 • 25 worms using these advanced infrastructure, the system will continue to occur, such as the incident is a security institutions began to introduce the concept of college, 2005, day after day of events, including school website press forgery agree on the seriousness of the matter and reported as a specific institution's information security countermeasures for the problem becomes [2].

Ever increasing information disclosure by internal users and Internet usage patterns of users in accordance with the inexperienced PC infected with malicious code based on the user, such as the incident occurred more than two growing uneasy situation, then making.

Now simply build a system that does not solve the security of individual users from the PC to the full range of system and network security elements will be considered in a situation.

Raise awareness of the protection of personal user information to government agencies to share the importance of each month, cyber security Safety Day 'program, implemented by voluntary users, but cannot guarantee that done.

All of the important elements of information security awareness should be done with active participation.

2. Related Work

2.1. Information Security Management System [3]

Information network information security management system is to ensure the safety and reliability of the information, and to enhance the organization's information security level of managerial, technical, and physical safeguards to establish a comprehensive security management system for the purpose of 2002 was introduced in the country's first [4].

This gradual increase of new security threats and vulnerabilities at the time, the organization's critical information assets to protect information security management procedures and processes of the enterprise-wide system to manage and continuously can be called as part of an effort [6].

2.2. Information Security Management System Management Courses

Information security policies, Information Security Management System range selection, risk management, implementation and follow-up through the five stages of the management process planning, organization, operation and external changes in the risk of discovery of new vulnerabilities and continuously changing environments, such as in response In order to continuously maintain and manage a non-time so that said business processes.

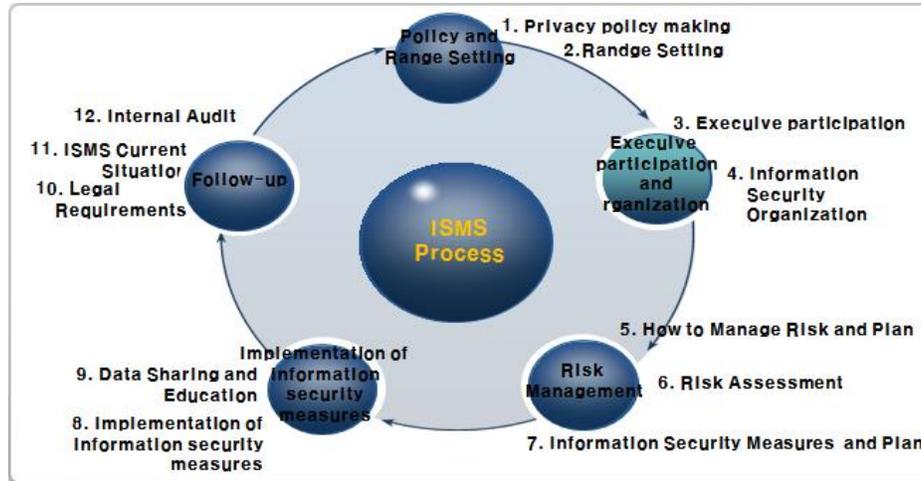


Figure 1. Information Security Management System Management [7]

2.3. Korea Information Security Management System Certification

The structure of the national information security certification schemes compared in Table 1, as the status of information security has a certification system. Ministry of Public Administration and Security of 11 December 2009 to provide e-government services, the ongoing administration and management of information in order to check the level of protection measures for government information security management system (G-ISMS) certification guidelines enclosed Ministry of Public Administration and Security Directive No. 164 was established to provide e-government services for the Government to strengthen the protection of the information system was introduced for the purpose of certification [5].

Table 1. Korea Certification System Status Information Security [10]

| Item | Korea Communications Commission | National Intelligence | Safety Administration |
|---------------------|---|---|--|
| Rate this item | Five step process 14 control items Details of controls 137 | 1,2,3-part quirements of 11 Assurance requirements of 10 | Management process in step 4 Four control items Documentation of controls 3 Information Security Measures 11 Areas 39 Of control Administrative institutions |
| Process | Technical, managerial, emphasizing protection of information | Emphasize the technical aspects of information protection | Administrative, technical, and emphasizes protection of information |
| Details of controls | commerce security, data center security, and strengthening of controls | The security requirements of the TOE provides | Suitable for e-government citizen services administration |

| | | | |
|-----------------------|---|--|--|
| | | detailed items | |
| Authentication method | By external experts, but more technical examination | Evaluation following the certification procedure | Process approach to information security management measurement items classified |

3. Unsupervised Clustering

3.1. Educational Environment of the Information Security Management System Certification Area

The information requested by the management system and organizational protection policies, risk management through risk assessment, planning and implementation of protective measures, such as follow-up over the course of several information security management seamlessly integrated into the implementation of protective measures are operating being, continuous follow-up and improvement activities are being implemented properly for the examination.

E-ISMS certification system according to the roles and responsibilities of the policy institutions, the Certification Committee, the certification body, the institute separated.

Certification policy institutions and the Ministry of Public Administration and Security Committee, the certification body under the Ministry of Education in charge of information security, the role of public authorities should be performed.

Information Security Management System suitable learning environment for developing the model reproduced in a learning environment and school facilities that will be preceded by a risk assessment. Of the system of controls, technical inspection for items that are important, but considering the educational environment to improve administrative controls for this item focuses think that research should be done. Looking to find the uniqueness of educational environments outside parties for unauthorized access control is not well done, because the failure of the various security incidents and mouth free. Allowed to enter the space, seminar rooms, superintendent, library, laboratory, lab, including co-management for public facilities such should be strengthened, and thus we believe in the integrity, conforming to gender, preventive action should be judged by the share price.

Educational environment information security management system (E-ISMS) is a government organization and services, such as jeonggigwan adapted to establish the nature of a comprehensive information security management system means.

4. Experimental Classification Results and Analysis

Educational Environment Information Security Management System (E-ISMS) certification agencies establish and build a comprehensive information security management system (ISMS) to a third party certification to give an objective assessment of the institution.

Bachelor of personal information held by the large-scale information systems and in conjunction with various administrative management systems, databases, and so the need to focus on the protection and management targets should be selected. Check the information security management system standard model, the Ministry of Public Administration and Security for e-government information security management system based on the model taking into account the improvement Table 2. And you want to configure as a controlled item.

Table 2. Educational Environment of the Information Security Management System Improvement

| Control area | Control information | Item Count | Details Of controls |
|--------------------------------|--|------------|---------------------|
| ISMS planning and management | Establish ISMS | 1 | 5 |
| | ISMS implementation and operation | 1 | 4 |
| | ISMS monitoring | 1 | 3 |
| | Maintain and improve the ISMS | 1 | 3 |
| Documentation | 1.Requirements | 1 | 3 |
| | 2.Control of documents | 1 | 2 |
| | 3.Control of records | 1 | 3 |
| Educational environment Threat | Protect public facilities | 1 | 3 |
| | Control of outsiders | 1 | 3 |
| | Integrity management | 1 | 3 |
| Security Measures | Privacy Policy | 1 | 2 |
| | Information Security Organization | 1 | 8 |
| | Asset Management | 2 | 5 |
| | Human Security | 4 | 12 |
| | Physical Security | 2 | 13 |
| | Communications and Operations Management | 10 | 30 |
| | Access control | 7 | 24 |
| | Requirements for information systems development and maintenance | 6 | 13 |
| | Security Incident Management | 2 | 4 |
| | Business Continuity Management | 1 | 5 |
| | Compliance | 3 | 9 |
| Total | | 49 | 157 |

5. Conclusion

In this paper, we suffer from various forms of learning environment to reduce the risk of a security incident as provided in the measurement model, objective and practical information that can be applied to establish the model will be based on protection and management. Information Security Information Security Management System objectives are established and implemented to achieve the specific results of year review by the new security threats and security incidents should be planned so that you can prevent. It necessary to fit the educational environment, managerial, technical and physical controls for each entry field for the level of management should be carried out.

For incident prevention systems through the establishment of an active learning environment to minimize the damage to services and comprehensive (administrative /

technical / physical) may establish measures to protect information, and individual / state information leakage can be prevented in advance.

Legal requirements of each species with respect to information security of being able to respond systematically through ongoing security management against new security threats will be able to respond effectively.

In addition, based on the risk management measures can be implemented cost-effective information security and information protection piecemeal responses, and checks away from hitting the autonomous system and enhance the level of information security can be derived.

Evaluation of information security management system based on the model of the measurement model is extended to a variety of fields, including public and private sector to develop a standard model of multidisciplinary research continues to apply the model to fit the characteristics of sector is desirable to feed.

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