Web based Searching System for the Personally Identifiable Information

Yong-Nyuo Shin[1]

[1] Dept.of Computer Engineering, Hanyang Cyber University,
222 Wangsimni-ro, Sengdong-gu, Seoul, Korea,
ynshin@hycu.ac.kr

Abstract. The Personal Information Protection Act is quite unique and distinctive law from other country specifying the principle of personal information processing and rights and responsibilities of the relevant parties [1]. Excessive restrictions on third-party supplies and use for further purposes, duty to report or disclose data processing consignment, and strict legal enforcement on small individual companies are good examples of excessive regulations. Personally Identifiable Information (PII) is any information that identifies or can be used to identify, contact, or locate that person to whom such information pertains or that is or might be linked to a natural person directly or indirectly [2]. In order to recognize data processed within information and communication technologies as PII, it should be determined at which stage the information identifies, or can be associated with, an individual. For this, it has been studier for privacy protection mechanism to protect PII, which now becomes one of hot issues in the International Standard as privacy framework and privacy reference architecture. This paper shows an effective web based searching system for PII on Personal Information Protection Act.

Keywords: Web based tool, Privacy, Personally Identifiable Information

1 Introduction

Korea has the highest distribution rate of Internet broadband networks in the world. But this has a down side - it increases the chance of data breach incidents as sensitive personally identifiable information is generally used online. As the personal information protection act is pushed ahead, all of companies and organizations that utilize personal information have to perform the management them which previously wasn't a regulatory subject, will be regulated, in addition to paper-type personal information. The scope of regulation was expanded to information and communication, education, medical service, and the financial area. For this reason, it is time for the governmental/public agency and private company to make thorough preparations. Protecting personally identifiable information is protecting the basic rights of the public, and is closely related to the concept of protecting personal assets in the knowledge society. Many countries, including the European countries, define personal information more broadly as "personally identifiable information". Many

countries have enacted and implemented various laws and regulations to protect personal information. Also many privacy products such as Digital Right Management (DRM), Data Loss Protect (DLP), Network Access Control (NAC) have being distributed and adopted as a client and server model. But, client and server model could be possible way to infringe the right of self-determination. While, web based protection mechanism let the employees protect information autonomy because they can access the related web site whenever they want to follow the rule or regulation which is related Personal Information Protection Act. Also it is very effective way to find those who violate the privacy law and reduce the hostility toward auditing.

Chapter 2 shows an effective web based personal identifiable information management system to ensure self-imposed control on personal information protection act. In the conclusion, we describe the future study tasks are reviewed.

2 Web based Personal Identifiable Information Searching System

To run the program, the user should access to the web service using internet explorer as shown in figure 1. Also, the user of privacy finder has to login first using id and password. After login, the user can check the history of running. The privacy protection software applies the rule to apply the privacy control to the system, in order to satisfy the requirement proposed by the privacy framework and reference architecture. The rule must always be included in the policy. If the rule is not included in the policy, it cannot be transferred to the agent. Applying the rule means including the rule in the particular policy. A regular expression changes the particular set of characters or the string into symbols, and is used to define the expression rule used to describe a set of strings accurately, or to define the grammar of the language, or to designate the string to search. Rules are managed, such as addition, modification, deletion, change, and application to the policy. The content of the rule is a regular expression or keyword, which is included in the policy and sent to the PC, and is used by the PC to detect a regular expression and keyword designated by the file in the PC, based on the regular expression and keyboard in question.

Fig. 1. Environment of the telebiometirc applications using mobile devices

After running privacy finder as user's choice using ActiveX format, the policies are acting as the administrator's setting. The policy can be included such as target of searching, lists of searching, searching method. All installed driver will progress the search automatically as shown in figure 2.

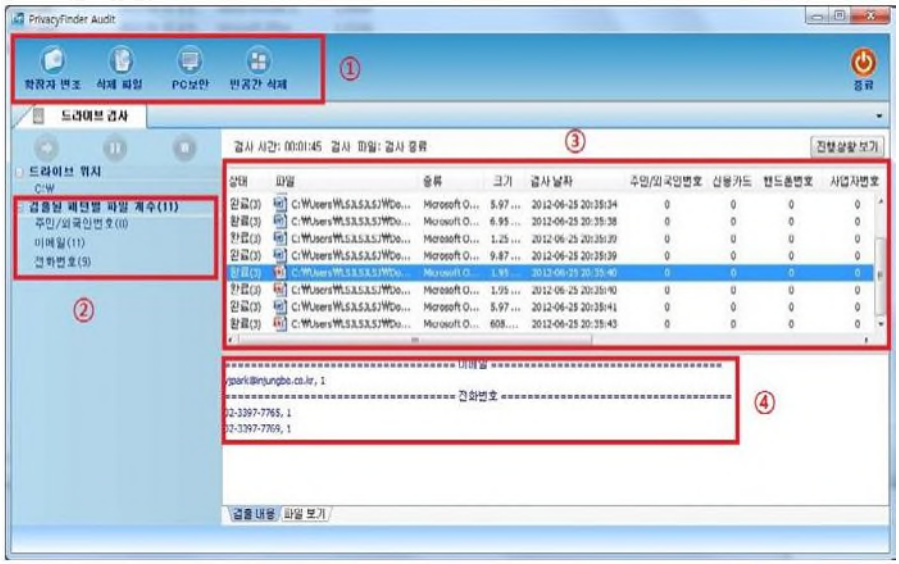

Fig. 2. Screen shot of the searching result for PII

If the personal information is found, the search details will be sent to the process server and saved in the MS SQL server. Table 1 shows the result of searched personal information.

Table 1. The result of searched PII

Security attributes	Description
Search time	Time at which the personal information is searched
Policy	Identifier of the personal information search policy
Rule	Regular expression identifier used to search the personal information
Search file information	Other information such as the position, size, and format of the file containing the personal information
Search times	Number of times that the personal information is searched
Search content	Paragraph in the file containing the searched personal information
Search result	Successful/Failed research
Response result	Successful/Failed deletion of the searched target file

An efficient policy will prevent the exposure of the personal and confidential information of the enterprise, encrypt the personal information file or delete it

permanently, and manage the status of the personal information and confidential information. Through self-diagnosis of the user, the user's awareness about protecting the important information saved in the business PC can be enhanced, and the privacy protection obligation can be carried out.

4 Conclusion

ISO/IEC JTC1 SC27 Working Group 5 has been performing standardization to protect privacy and concentrating on the standardization of a privacy reference architecture to implement the privacy framework. The privacy framework is intended to help an organization to define its privacy control requirements related to personally identifiable information within its information and communication technology environment by: relating all described information privacy aspects to existing security guidelines. The privacy reference architecture provides guidelines on how to develop, implement and operate information and communication technology systems with built-in privacy safeguarding controls; is a resource containing a consistent set of architectural best practices for managing PII in information and communication technology systems; and extends on the privacy framework derived from ISO/IEC 29100[3]. In order to implement and test the ISO 29101[4], the system was implemented that performs various functions as described in this paper. Also we show the web based protection mechanism to protect PII. Compared with client-server model, web based implementation can help not to infringe the right of self-determination. Also it is very effective way to find those who violate the privacy law and reduce the hostility toward auditing.

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