World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:9, No:09, 2015

Forecasting Future Society to Explore Promising Security Technologies

Authors : Jeonghwan Jeon, Mintak Han, Youngjun Kim

Abstract : Due to the rapid development of information and communication technology (ICT), a substantial transformation is currently happening in the society. As the range of intelligent technologies and services is continuously expanding, 'things' are becoming capable of communicating one another and even with people. However, such "Internet of Things" has the technical weakness so that a great amount of such information transferred in real-time may be widely exposed to the threat of security. User's personal data are a typical example which is faced with a serious security threat. The threats of security will be diversified and arose more frequently because next generation of unfamiliar technology develops. Moreover, as the society is becoming increasingly complex, security vulnerability will be increased as well. In the existing literature, a considerable number of private and public reports that forecast future society have been published as a precedent step of the selection of future technology and the establishment of strategies for competitiveness. Although there are previous studies that forecast security technology, they have focused only on technical issues and overlooked the interrelationships between security technology and social factors are. Therefore, investigations of security threats in the future and security technology that is able to protect people from various threats are required. In response, this study aims to derive potential security threats associated with the development of technology and to explore the security technology that can protect against them. To do this, first of all, private and public reports that forecast future and online documents from technology-related communities are collected. By analyzing the data, future issues are extracted and categorized in terms of STEEP (Society, Technology, Economy, Environment, and Politics), as well as security. Second, the components of potential security threats are developed based on classified future issues. Then, points that the security threats may occur –for example, mobile payment system based on a finger scan technology– are identified. Lastly, alternatives that prevent potential security threats are proposed by matching security threats with points and investigating related security technologies from patent data. Proposed approach can identify the ICT-related latent security menaces and provide the guidelines in the 'problem – alternative' form by linking the threat point with security technologies.

Keywords : future society, information and communication technology, security technology, technology forecasting
Conference Title : ICHCI 2015 : International Conference on Human Computer Interaction
Conference Location : Berlin, Germany
Conference Dates : September 14-15, 2015