

## Chapter 3.25

# Privacy and Security for Virtual Communities and Social Networks

**Georgios Michaelides**

*Budapest University of Technology and Economics, Hungary*

**Gábor Hosszú**

*Budapest University of Technology and Economics, Hungary*

### ABSTRACT

The importance of the virtual communities' privacy and security problems comes into prominence by the rapid development of online social networks. This article presents the multiple threats currently plaguing the virtual world, Internet privacy risks, and recommendations and countermeasures to avoid such problems. New generations of users feel comfortable publishing their personal information and narrating their lives. They are often unaware how vulnerable the data in their public profiles are, which a large audience daily accesses. A so-called digital friendship is built among them. Such commercial and social pressures have led to a number of privacy and security risks for social network members. The article presents the most important vulnerabilities and suggests protection methods and solutions that can be utilized according to the threat. Lastly, the authors introduce the concept of a privacy-

friendly virtual community site, named CWIW, where privacy methods have been implemented for better user protection.

### INTRODUCTION

Social networks are pre-technological creations that sociologists have been analyzing for years. (Lohr, 2006). The Internet brought a new era for social networking that most of us could never imagine before. Today we have organizational and software procedures that control the exchange of interpersonal information in social networking sites, text messaging, instant messenger programs, bulletin boards, online role-playing games, Computer-Supported Collaborative Work (CSCW), and online education. All of these applications fit into the larger category of social media, or media that support social collaboration. The term social media is an umbrella concept that describes social

software and social networking. “Social software refers to various, loosely connected types of applications that allow individuals to communicate with one another and to track discussions across the Web as they happen” (Tepper, 2003). Defining the term *Virtual Community* is a hard thing to be done, because we cannot just specify it, as it can exist in different forms. Explaining what a *Virtual Community* is, we can describe that it is a group of individuals that uses the Internet Technology and the Social Network Services for sharing common interests, ideas and even feelings. These services can be accessed through newsgroups, Web forums, Web chats, IRC channels, weblogs and private messages.

Security and privacy are one of the most common and discussed issues which lack in social network services. The idea of privacy in social network could be described as a paradox; because information about you is shared with other members of the network, thus there is little or no privacy. Privacy is not just about hiding things. It is about self-possession, autonomy, and integrity. The comprehension of privacy is something that the users do not understand and in many cases it is not well implemented between the user privacy and the privacy network that is held on the service, as there are so many sites holding millions of members.

Users are often not aware of how vulnerable they are when their public profile data are accessed by a large size of audience, so that digital “friends” are created (Higgins, 2008). Such commercial and social pressures have led to a number of privacy and security risks for social network members (Gross & Acquisti, 2005).

Easy access for uploading any kind of personal information, data including age, location, contact information (home address and telephone numbers), even identity card number, pictures and special notes for interests and hobbies, giving a clear idea how a person looks like and how he behaves. It is a deep societal problem emerging people giving up their privacy without realizing

it. Also, many users can fall into trap surveys of popular Social Network Sites (SNSs) by answering naively questions as: “Have you ever cheated on your boyfriend/girlfriend?”, “Do you download illegal content from Internet?” or “Have you stole something from a stranger?” (De Rosa, Cantrell, Havens, Hawk, & Jenkins, 2007). Surveys with these trick questions can easily harm the individuals who have participated.

In the following sections, we have reviewed the current stages of security problems of virtual communities. Authors have shared their experiences and highlighted the significant vulnerabilities and introduced countermeasures and solutions to confront them. To prove and test that these security methods work and that the users can be really comfortable and secure, we have created the concept of a basic privacy-friendly Social Network Site. Finally, we should think and predict the future horizon of virtual communities. Problems are fast growing and arising social connections must be taken into consideration.

## **RESEARCH FOR SOCIAL NETWORK SITES**

### **Digital Lives**

Even though the new generations of younger people are born and grow up with their personal computers and Internet technology, it is rather difficult to distinguish and compare the digital behavior and attitude of people born before and after the Internet era. The new technology has invaded and conquered a major and requisite part of our lives. *Figure 1* shows the comparison of ages according to Internet usage in a scale of time.

### **Sharing Information Online**

The online information sharing is a common feature that allows the current users to adopt different roles in social networking community.

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