Safety Measures for Social Computing in Wiki Learning Environment

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ABSTRACT

Wikis are social networking systems that allow users to freely intermingle at different levels of communication such as collaborative learning, chatting, and group communications. Although a great idea and goal, it's particularly vulnerable due to its features of open medium and lack of clear plan of defense. Personal data can be misused for virtual insulting, resulting in misuse of personal information for financial gains or creating misuses. Wikis are an example of social computing of collaborative learning, joint editing, brain storming, and virtual socializing, which is a ripe environment for hacking, deception, abuse, and misuse. Thus, wiki needs comprehensive security measures which include privacy, trust, security, audit, and digital forensics to protect users and system resources. This paper identifies and explores the needs of secure social computing and supporting information systems as places for interaction, data collection, and manipulation for wikis. It does this by reviewing the literature and related works in proposing a safety measure framework for a secure and trustworthy medium together with privacy, audit, and digital forensic investigative functions in wiki environments. These then can aid design and usage in social computing environments with the proviso to give comfort and confidence to users without worrying about abuse and cybercrime perpetrated activities.

Keywords: *Collaborative Learning, Safety Measure, Security, Social Computing, Wikis*

INTRODUCTION

Social Computing is a general term in Information and Communication Technology (ICT). Actually, it is concerned with the intersection of social behavior and computational information systems which is bringing more and more people into the communication cycle and patterns of activities. Social computing is one of the most popular and dynamic trends on the Web today. In fact, wikis and other activities that engage people in collective activities via the Internet

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have challenged traditional business models, created new ecosystems of content and people, and fundamentally transformed the way people manage their professional and personal relationships (Aronsson, 2002). Recently, venture capital investments have focused around enterprise social computing solutions at an increasing rate (Newsgator, 2009). Wiki as a social computing application trend is an appropriate useful and very helpful platform that enables online collaboration and creation of a knowledge based society. Wiki can be accessed and amended by anyone on the World Wide Web through the Internet. Wikis leverage the experience and knowledge community participants by giving individuals the ability to tag the profiles of others, or rate their participation in forums or their responses to questions. These approaches allow users to build reputation scores as well as publicize their areas of expertise to other participants (Lazar, 2010). Communities and sharing of personal information may raise concerns about privacy. It indicates that users' trust in other community members, and the community's information sharing norms have a negative impact on community-specific privacy concerns. Assessing information risk from the start, do not discount regulatory issues, and ensure information security and protection permeates at every step. Balance carefully the benefits of openness versus locking down the environment. Therefore, this paper focuses on identifying and exploring the needs of secure social computing and supporting information systems as places for interaction, data collection and manipulation with more emphasis on wikis in education context.

This paper is organized as follow: First, we briefly outlines the principles of social computing and wiki. Then we explain wiki safety measures. The *Collaborative Learning Environments* using wiki is described and we then present the review of social computing challenges. Following that we give detailed description of social computing safety approaches which include security, privacy, trust, audit and digital forensics. Finally, a discussion is given and an overall conclusion is discussed.

PRINCIPLES OF SOCIAL COMPUTING

The focus of social computing is the possibility of designing digital systems that support the users by making their socially produced information available to all users. In order to enhance the functioning of a system, it uses the information that is produced by a group of people. Social computing should address certain issues as security, privacy, trust and risk to support a secure and trustworthy trading environment (Motahari et al., 2007). Social computing can be defined as any type of computing application in which software serves as an intermediary or a focus for a social relation (Schuler, 1994). It also refers to systems distributed across social collectivity which gather, process, represent, use, and disseminate the information. Moreover, the information is significantly precise since it is associated with people, who are linked to others. Also a social structure in which technology puts power in communities individuals and not institutions (Charron et al., 2006). Finally computational facilitation of human social dynamics and social studies as well as the design and use of ICTs that consider social context (Wang, 2005).

While wiki can be defined as Web-based software, it allows easy creation and editing of any number of interlinked pages by the site viewers via a web browser using a simplified markup language or *What You See is What You Get* (WYSIWYG) text editor. In fact, wikis are typically powered by wiki software and are mainly used to create collaborative wiki websites, to power community websites, for personal note taking, organization intranets, and in knowledge management systems (Thite, 1999).

A Wiki is simply a set of linked Web pages and applications enabling its development, created through the incremental linking of such pages by a group of collaborating users. The Wiki is unique by both in its software and in the use of the software by collaborating members.

Wikis site is an example of how social technology facilitates collective participation