Various Security Issues In Online Social Networks

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Abstract

Online Social Network (OSN) is a growing platform which enables people to get hold of updates, communicate with family and old friends with whom they have lost contact, to promote a business, to invite to an event of friends and to get people to collaborate. OSNs have suffered from numerous issues like it consumes huge amount of time of students and working professionals but it also let them create their own world. The users often suffer from depression and anxiety because of cyber bullying and privacy issues. Users with malicious intentions often come with more advanced methods to meet their objectives. Many of the OSNs have suffered from lawsuits of unauthorized access of information and sharing of the same. This paper emphasises on the various security issues in OSNs.

1. Introduction

Internet, a huge network of computers, scales the whole world. That's it enables users why it becomes easy to communicate within very large distances that transcend borders. OSNs are emerging as one of the popular communication medium. The growing OSNs population is a clear evidence of their popularity.

Social Networks are the gathering of social beings who share some common traits such as hobbies, likes, community. Online Social Networks are the gathering of internet users in such a webspace which provides them a sense of equality and belongingness. OSNs are the platform where users showcase their talent, share their views and opinions about a topic or news, share videos, photos and blog entries. OSNs provide an area where one can communicate and interact with friends and family who are far away in distance and those friends with whom they have lost any

contact. This oneness of the world has been brought about by OSNs [1] [2] [3].

Technically speaking, a user creates an account in the OSN with a LoginID-Password pair, which is kept secret. In OSN, a user is identified by a page, known as Profile Page, which contains the basic information regarding the user. Information like name, age, sex, workplace, education, date of birth, location is all stored by the OSN. This information can be made public or private as per users. The Profile page stores personal information such as type or genre of user likes, the books the user likes, and some favourite quotes.

As OSNs mature, issues pertaining to legitimate use of such networks are also growing and making headlines. Various issues like privacy, cyber bullying unauthorized access of information have been the centre of attention of many of the researchers of the field. This paper provides the basic information about Online Social Networks, their use and need, the issues within faced by users while participating in OSNs.

Organization of the paper is as follows: section 2 discusses about OSNs, its features and the needs to use OSNs. Various issues related to security in OSNs are explained in section 3. Last section concludes the paper.

2. Online Social Networks

A social network is a platform to build social relations among people who, for example, share interests, activities, backgrounds, or real-life connections. A social network service consists of a representation of each user (often a profile), his/her social links, and a variety of additional services. Social networking sites allow users to share ideas, pictures, posts, activities, events, and interests with people in their network.

The term, social network, was first coined by Professor J. A. Barnes [4] in the 1950s describing associations of people drawn together by family, work, hobby, etc.; for support such as emotional,

instrumental, appraisal and information. Such networks operate on many levels, from the family level up to as high as the level of nations; and play important roles in communications among people, organizations and nations; as well as the way how problems are solved and how organizations are run. In its simplest form, a social network is a map of the relevant ties between the individuals, organizations, nations, etc., being studied.

2.1 Features of OSNs

OSN sites are web-based services that allow individuals to (a) create a public or semi-public profile, (b) manage a list of other users with whom they share a connection, and (c) interact with their friends and make new connections.

After joining an OSN, an individual has to fill out forms containing a series of questions. The profile is generated using the answers to these questions, which typically include information such as age, location, interests, and an "about me" section. There is a provision in most sites to upload photos as profile pictures. Some sites allow users to enhance their profiles by adding multimedia content or modify their profile's look and feel.

Users are prompted to identify others in the system with whom they have a relationship. These relationships can be "Friends," "Contacts," and "Fans", which depends on the OSN. Most OSNs require bi-directional confirmation for Friendship, but some do not. These one-directional ties are sometimes labelled as "Fans" or "Followers," but many sites call these Friends as well. OSNs vary greatly in their features and user base. Some have photo-sharing or video-sharing capabilities; others have built-in blogging and instant messaging technology.

2.2 Need for OSNs

Online Social Networks (OSNs) present the following benefits:
• OSNs get knowledge to people in time. Having the online space makes it possible for people to share experiences with each other and spread knowledge with each other in no time.
• OSNs connect people across boundaries. People around the world can share, or people from engineering, marketing, and design can collaborate on a project they are all approaching from different directions and different parts of the world.
• Create an ongoing, shared social space among geographic and departmentally dispersed people. The shared social space provides a sense of the whole that enables members of a widely distributed group to see themselves in context. Shared social space actually creates the identity of the group [3].
• Create a community memory. Organizations run on conversations, but conversations are rarely structured and almost never recorded. Those strategically important conversations that are recorded in the form of minutes are not indexed to ongoing operations, so they could be used as a store of knowledge.
• Keeping in touch with family members that live far away can become much easier through the use of online social networking. Thanks to social networking sites, meeting someone in person has become a thing of the past. "Poking" has become the new handshake. Making friends and renewing old ones is easy. Thus, meeting people and staying connected with classmates and friends is a major benefit of social networking sites.
• Social networking is becoming increasingly important in schools. Facebook, Moodle, SecondLife, Digg, and other sites are often used by teachers to communicate with students or for out-of-classroom discussions [3].

OSNs started with the start of USENET discussion group over the internet in the early 1980's [1] [3]. USENET resembles a bulletin board system in many respects, and is the precursor to Internet forums that are widely used today. Since it was closed in nature, there was a need for a much more accessible system. Sixdegrees.com, launched in 1990's was one of the first Online Social Network which is considered as the first generation of social networks. With the launch of Web 2.0 came the flooding of OSNs with Friendster launching in 2002. Friendster is considered as the second generation of OSNs

After Friendster, MySpace [1] [3] became very popular because you could modify your page the way you want. MySpace became extremely popular amongst musicians because it offered a great platform to share music. LinkedIn was developed as a social network restricted for the working professionals. Hi5 is another popular OSN which attracted its users but couldn't sustain the evolution of the social media. YouTube was developed by former PayPal employees as a video sharing site and has now become the biggest video portal over the web today. Orkut attracted lots of users but couldn't comply with the latest technology development in internet application. The worst
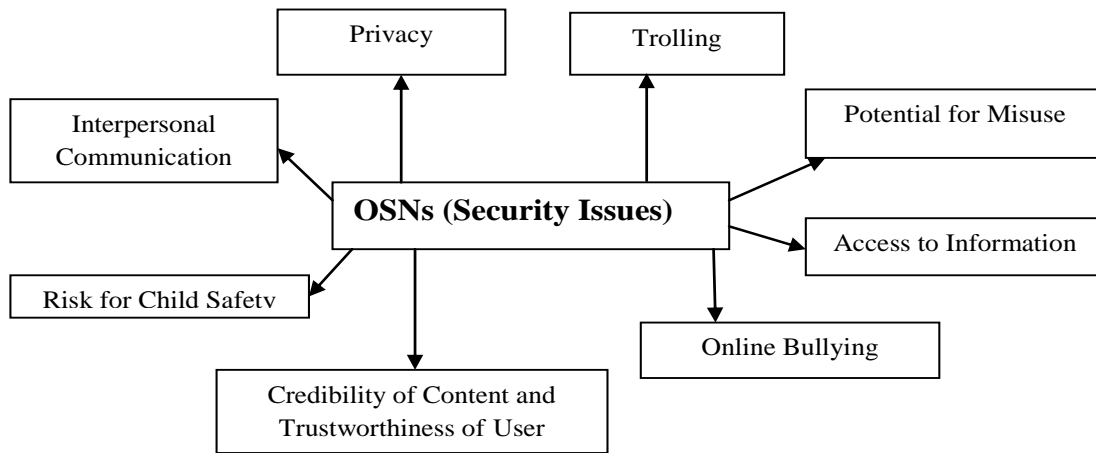
Fig1. Security Issues of OSNs

issue in orkut was that of privacy and information leak.

Facebook [5], Twitter [6], Google+ [5], Pinterest [6] are the frontrunners of OSNs in today's internet world. This evolution of OSNs over the last two decades has presented with many issues which are discussed in the next section.

3. Issues of OSNs

In OSNs, users interact with each other. Interactions between the users differ from the way chats work. Users interact with each other by interacting with their profiles which describe the identity of a user. OSNs have always been argued to be harming the privacy of the users. Apart from this, they have other issues which are outlined and shown in Fig. 1. as below:

- *Privacy:* Privacy concerns with social networking services have been raised growing concerns amongst users on the dangers of giving out too much personal information and the threat of sexual predators. Users of these services also need to be aware of data theft or viruses. However, large services, such as MySpace, Facebook, Google+ often work with law enforcement to try to prevent such incidents [7].

  In addition, there is a perceived privacy threat in relation to placing too much personal information in the hands of large corporations or governmental bodies, allowing a profile to be produced on an individual's behaviour on which decisions, detrimental to an individual, may be taken.

- *Access to Information:* Many social networking services, such as Facebook, provide the user with a choice of who can view their profile. This prevents unauthorized user(s) from accessing their information. Parents who want to access their child's Facebook account have become a big problem

for teenagers who do not want their profile seen by their parents. By making their profile private, teens can select who may see their page, allowing only people added as "friends" to view their profile and preventing unwanted viewing of the profile by parents. Most teens are constantly trying to create a structural barrier between their private life and their parents.

- *Potential for Misuse:* The relative freedom afforded by social networking services has caused concern regarding the potential of its misuse by individual patrons [8].

- *Risk for Child Safety:* Citizens and governments have been concerned with misuse by child and teenagers of social networking services, particularly in relation to online sexual predators [8]. Overuse of social networking may also make children more susceptible to depression and anxiety. Social networking can also be a risk to child safety in another way; parents can get addicted to OSN and neglect their children.

- *Trolling:* A common misuse of social networking sites such as Facebook is that it is occasionally used to emotionally abuse individuals. Such actions are often referred to as trolling. It is not rare for confrontations in the real world to be translated online [9].

- *Online Bullying:* Online bullying, also called cyber-bullying, is a relatively common occurrence and it can often result in emotional trauma for the victim. Networking sites like Facebook, MySpace may result in and too much emotional stress [9]. There are not many limitations as to what individuals can post when online. Individuals are given the power to post offensive remarks or pictures that could potentially cause a great amount of emotional pain for another individual.

- *Interpersonal Communication:* Interpersonal communication has been a growing issue as more and more people have turned to social networking as a means of communication. Online social networking sites have become popular sites for youth to explore themselves, relationships, and share cultural artifacts. Many teens and social networking users may harm their interpersonal communication by using sites such as Facebook and Twitter [9].

- *Credibility of Content and Trustworthiness of User:* As mentioned earlier there is no limitation on what an individual can post on OSNs. Thus, there is no way to decide the trustworthiness of a user and the content posted by that particular user. How much can you trust a person and the actions he/she performs on the OSN? No such model exists in the current OSNs.

4. Conclusion

OSNs are widely used in today's world. With the advent of Web 2.0, the use of OSNs has increased exponentially. With the increase of users every second, the OSNs face certain issues as well. In this paper, Online Social Networks (OSNs), its characteristics and need have been explored. Various security issues related to OSNs also being discussed in the paper.

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