

Social Media Security: Protecting Privacy

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Outline

- Social Media evolution
- Acceptance by the public
- Security concerns
- Privacy aspects of Social Media
- Suggested Best Practices
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Social Media Definition

- A web site designed to allow several users to publish content freely on any subject for use by 'friends' and others. Such a site allows users to create a personal 'profile' visible to the people they allow.

Social Media evolution

- **Facebook** is one of the latest in a series of Social Media outlets
- **Six Degrees** by Andrew Weinrich, New York, early 1997
- **Six Degrees** is the first social network
- **Black Planet** by Omar Wasow and Benjamin Sun, New York, 1999
- **Black Planet** was launched to benefit African-Americans

Social Media evolution

- [Asian Avenue](#) by the same group as Black Planet, New York, 1999
- Asian Avenue was ethnic focused
- [Lunar Storm](#) by Ricard Ericsson in Sweden, 2000. Focus on teenagers.
- [CyWorld](#) by SK Telecom in South Korea, 2001
- [Ryze](#) by Adrian Scott, San Francisco, 2001
- Ryze was designed for business people

Social Media evolution

- **Club Nexus** by Orkut Buyukkokten, Stanford University, Nov. 2001
- Orkut Buyukkokten is a Turkish native
- Orkut Buyukkokten joined Google in 2003
- **Orkut** social network was launched by Google in Jan. 2004
- Orkut is very popular today in Brazil (50% of users) and India (20% of users)

Social Media evolution

- **Friendster** by Jonathan Abrams, San Francisco, Feb. 2003
- Friendster allowed real names only
- Friendster is the forerunner to all modern social networks
- It grew too fast and was not able to scale in functionality
- Today, 60% of Friendster users are in Philippines, Malaysia and Indonesia

Social Media evolution

- [LinkedIn](#) by Reid Hoffman, San Francisco, May 2003
- LinkedIn designed for professional people
- Currently it has 135 million users
- Most users are in U.S., U.K., India and Brazil
- [Tribe.Net](#) by Mark Pincus, San Francisco, May 2003
- Tribe.Net aimed at facilitating selling merchandise by friends to friends without using Craigslist

Social Media evolution

- **MySpace** by Tom Anderson and Chris DeWolfe, Los Angeles, Aug. 2003
- MySpace allowed use of fake names for registration
- It was owned by Rupert Murdoch's NewsCorp
- Sold to a group that includes Justin Timberlake in 2011
- Focus has changed to music related activities

Social Media evolution

- **Facebook** by Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz, Chris Hughes, Harvard University, Feb. 2004
- Facebook has over 800 million users worldwide
- **Twitter** by Jack Dorsey, Noah Glass, Evan Williams, Biz Stone in San Francisco, July 2006
- Over 350 million users worldwide

Social Media evolution

- **Diaspora** by Rafael Sofaer, Maxwell Salzberg, Ilya Zhitomirskiy, Daniel Grippi, New York, 2010
- Diaspora focuses on user privacy
- Open source software and so it is difficult to estimate its user base

Social Media evolution

- Google+ was launched in June 2011 in San Francisco
- Google+ has more than 10 million users
- Facebook users have 'friends'
- Twitter users have 'followers'
- LinkedIn users have 'connections'

Acceptance by the Public

- Social networks are very well accepted by the public
- Public is looking for convenience over security
- People are not checking carefully before accepting 'friends'
- **Better practice would be:**
 - 'Joe' recommends 'Bill' to 'Sam'
 - 'Bill' sends 'Sam' a request to be 'friend'
 - 'Sam' accepts 'Bill'

Acceptance by the Public

- What is really happening now:
 - ‘Bill’ is friends with ‘Joe’
 - ‘Bill’ finds out ‘Sam’ is friend of ‘Joe’
 - ‘Bill’ sends a request to ‘Sam’ to be a friend
 - ‘Sam’ accepts ‘Bill’ inherently trusting that ‘Joe’ recommended the new friend
- ‘Sam’ thinks rejecting ‘Bill’ would hurt his friend ‘Joe’
- People should realize **relationships are dynamic**

Acceptance by the Public

- Before accepting friends, consider:
 - You have a right to decide whom to accept
 - Don't rush, take time to assess
 - People judge you based on who your friends are

Security Concerns

- Facebook users access the system mostly using cell phones
- This opens up free access to anyone getting hold of the cell phone of a user without the need for userid and password
- Facebook gives an option to activate userid/pwd but in reality the users do not
- Facebook allows Close Friends, Friends and Acquaintances

Security Concerns

- Other types of classifications such as 'Restricted', 'Friends by City/Region/Group' are feasible
- By default the privacy settings are set to Public, meaning anyone could see the profile and wall
- People have the habit of putting DoB, marital status, address, political beliefs, religion, hometown, etc in profile

Security Concerns

- Anyone in friends' circle can post photos on your wall
- 'Check-in' feature in Facebook tells your friends your GPS location
- By changing Privacy Settings you can avoid getting tagged but it does not happen
- Login notification in Facebook is like Skype
- App passwords can be created but does not happen

Security Concerns

- Login approvals can be created with code to other sites such as YouTube
- ‘Updates’ in Facebook are a dangerous way to let out too much information
- **Example:** ‘I am looking forward to my Europe vacation next month’
- Looks innocuous, but tells ‘acquaintances’ that you will be out of the country next month. They can rob your house.

Privacy aspects of Social Media

- A 'friend' in Facebook posts 'Five things about me' and encourages you to do the same
- Two of the five things are:
 - I attended Valley High
 - My cat is Myra
- Think of this user choosing these two questions as his security questions for an online bank account
- Unknowingly he has compromised his privacy

Privacy aspects of Social Media

- Facebook applications are potential sources of bypassing controls
- **Example:** You receive an App that asks the question ‘Which 70s movie reflects you?’ The App might state that allowing it would permit the App to check your profile and that of your friends in order to find an answer to the question. You have unwittingly opened up your profile to an unknown third party.

Privacy aspects of Social Media

- Twitter feed from you states that:
 - ‘I found a bug in our software’
 - ‘I overheard that so-and-so is gay’
- First one exposes your company problems
- Second one is uncorroborated but has the potential to cause great harm
- Both are violations of privacy for a firm and an individual

Privacy aspects of Social Media

- Like Facebook, Twitter users are very lax in setting up proper controls for friends or followers
- Many feel proud that they have so many friends or followers
- Following the tweets of others has become a major pastime for many
- Tweets reveal location information as well

Suggested Best Practices

- URL shortening or obfuscation is widespread
- This is a recipe for criminals to hide their malicious sites using obfuscation
- Do not click on URLs, instead copy and paste them on a new session
- When in doubt about a URL check them out using www.longurl.org or www.longurlplease.com

Suggested Best Practices

- Never open attachments from unknown sources
- Never open attachments from 'friends' unless you expected them
- Hackers takeover address books and send malware to all addresses in the book in the name of the owner
- LinkedIn request for 'connections' is one of the widely abused without knowledge of the owner

Suggested Best Practices

- At TAMIU, I surveyed 72 managers/supervisors with the help of a student
- The analysis of the data shows that managers perceive that social networks:
 - Provide high morale
 - Satisfaction
 - Commitment
 - Better performance

Suggested Best Practices

- Some managers think that they have to allow the use of social networks in the workplace because their competition allows it and employees expect it
- The above reasoning is not a valid argument unless it fits well with the organizational goals

Suggested Best Practices

- Pew Research Study in 2011 points out that majority of the users of social media use it to stay connected with friends and family
- Other surveys point to people feeling 'left out' if they do not use social media
- Peer pressure is one major reason for many casual users of social media without paying much attention to security or privacy

References

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