Security and Social Context

or

Why Facebook is Worth Fixing

Security and Human Behavior

Jun 12, 2009

Joseph Bonneau, Computer Laboratory
Today

I) Culture gap on social networks is hurting security
II) The future of the internet is social
III) This affects security/privacy in subtle ways
I) Views on Social Networks (in caricature)

Security Researchers & Privacy Advocates:

Social Networking is pointless, childish, broken. Why bother with such a mess?

Facebook Developers:

Privacy is difficult, boring, outdated. Why bother with such a mess?
Pessimist's View of Social Networks

Just a normal website, except you list your friends...
Optimist's View of Social Networks

Just a normal website, except you list your friends!
Eventually, You Will Care About Social Networks
Eventually, You Will Care About Social Networks

Growth in older demographics
## II) Facebook: The Real Web 2.0

<table>
<thead>
<tr>
<th>Function</th>
<th>Internet version</th>
<th>Facebook version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Markup</td>
<td>HTML, JavaScript</td>
<td>FBML</td>
</tr>
<tr>
<td>DB Queries</td>
<td>SQL</td>
<td>FBQL</td>
</tr>
<tr>
<td>Email</td>
<td>SMTP</td>
<td>FB Mail</td>
</tr>
<tr>
<td>Forums</td>
<td>Usenet, etc.</td>
<td>FB Groups</td>
</tr>
<tr>
<td>Instant Messages</td>
<td>XMPP</td>
<td>FB Chat</td>
</tr>
<tr>
<td>News Streams</td>
<td>RSS</td>
<td>FB Stream</td>
</tr>
<tr>
<td>Authentication</td>
<td>OpenID</td>
<td>FB Connect</td>
</tr>
<tr>
<td>Photo Sharing</td>
<td>Flickr, etc.</td>
<td>FB Photos</td>
</tr>
<tr>
<td>Video Sharing</td>
<td>YouTube, etc.</td>
<td>FB Video</td>
</tr>
<tr>
<td>Blogging</td>
<td>Blogger, etc.</td>
<td>FB Notes</td>
</tr>
<tr>
<td>Microblogging</td>
<td>Twitter, etc.</td>
<td>FB Status Updates</td>
</tr>
<tr>
<td>Micropayment</td>
<td>Peppercoin, etc.</td>
<td>FB Points</td>
</tr>
<tr>
<td>Event Planning</td>
<td>E-Vite</td>
<td>FB Events</td>
</tr>
<tr>
<td>Classified Ads</td>
<td>craigslist</td>
<td>FB Marketplace</td>
</tr>
</tbody>
</table>
Facebook has essentially re-invented the Internet

- Centralised
- Proprietary
- Walled

Only addition is social context (but it's a killer addition)
Parallel Trend: The Addition of Social Context

“Given sufficient funding, all web sites expand in functionality until users can add each other as friends”
III) The Downside of Re-inventing the Internet

SNSs repeating all of the web's security problems
• Phishing
• Spam
• 419 Scams & Fraud
• Identity Theft/Impersonation
• Malware
• Cross-site Scripting
• Click-Fraud
• Stalking, Harassment, Bullying, Blackmail

The Elephant in the Room
• Privacy
Phishing

Katie sent you a message.

Subject: Nice ass! But why you put them in the internet?

"YAYYYYY

http://www.facebook.com/l.php?u=http://geocities.com%2Frubingallegos09%2F%3Fdchbb850%3D13191be140046e6d498e1ac0d07d218c"
Calvin: hey
Evan: holy moly. what's up man?
Calvin: i need your help urgently
Evan: yes sir
Calvin: am stuck here in london
Evan: stuck?
Calvin: yes i came here for a vacation
Calvin: on my process coming back home i was robbed inside the hotel i loged in
Evan: ok so what do you need
Calvin: can you loan me $900 to get a return ticket back home and pay my hotel bills
Evan: how do you want me to loan it to you?
Calvin: you can have the money send via western union
Social Compromise

Allow Access?

Allowing Scramble access will let it pull your profile information, photos, your friends' info, and other content that it requires to work.

[Allow] or cancel

By proceeding, you are allowing Scramble to access your information and you are agreeing to the Facebook Terms of Use in your use of Scramble.
Problematic Aspects

Social context aids phishing, scams, spam

Fun, noisy, unpredictable environment

People use SNS with their brain turned off
Positive Aspects

Can analyse social graph to spot fraud, anomalies

Social connections useful establish trust

- Reputation systems
- Backup authentication
- Reporting compromised accounts
Conclusions

Social Networking coming to dominate the web

Positive and negative for security (largely unexplored)

Privacy is still a mess