

Security and Social Context or Why Facebook is Worth Fixing

Security and Human Behavior
Jun 12, 2009

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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Privacy is difficult, boring, outdated.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



The screenshot shows the original Thefacebook website interface. At the top left is a pixelated profile picture of Mark Zuckerberg. To its right is the site's logo, "[thefacebook]", with links for "login", "register", and "about". A left-hand navigation menu contains links for "[main]", "[login]", and "[register]". The central area is titled "[Login]" and features input fields for "Email:" and "Password:", followed by "Login" and "Register" buttons. Below these is a link to reset a forgotten password. The footer includes links for "about", "contact", "faq", "advertise", "terms", and "privacy", along with the text "a Mark Zuckerberg production" and "Thefacebook © 2004".

[main]
[login]
[register]

[thefacebook]
login register about

[Login]

Email:

Password:

Login Register

If you have forgotten your password, click [here](#) to reset it.

[about](#) [contact](#) [faq](#) [advertise](#) [terms](#) [privacy](#)
a Mark Zuckerberg production
Thefacebook © 2004

Just a normal website, except you list your friends...

Optimist's View of Social Networks

Round ends in: **0:39**

E	E	E	T	E
L	E	A	A	W
N	S	N	R	O
P	C	T	E	S
A	A	I	I	I

Click, drag, or type to build words.

 **Rotate Board** (use spacebar as a shortcut)

End this Round

My Score:
153

My Best:
310

LEARS is worth 4

Enter

Words Remaining

3LW	74	6LW	49
4LW	105	7LW	27
5LW	96	8LW	9

Possible Score: 1466 pts

Words you've found:

- LEARS (4)
- LEAR (2)
- TARTS (4)
- TART (2)
- LEANER (6)
- LEAN (2)
- LEAT (2)

My Friends

Nan Gao
416 pts
1st

Adrienne Clark
199 pts
6th

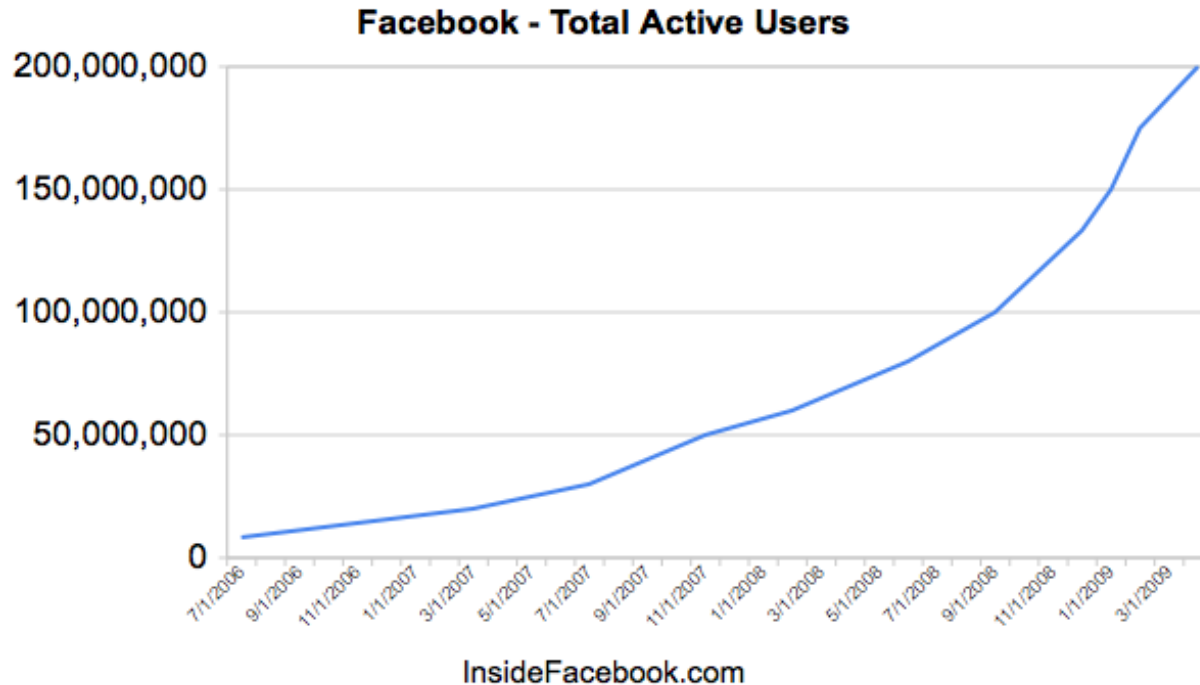
Julie Zhuo
199 pts
7th

CURRENT SCORE
8th 153 pts

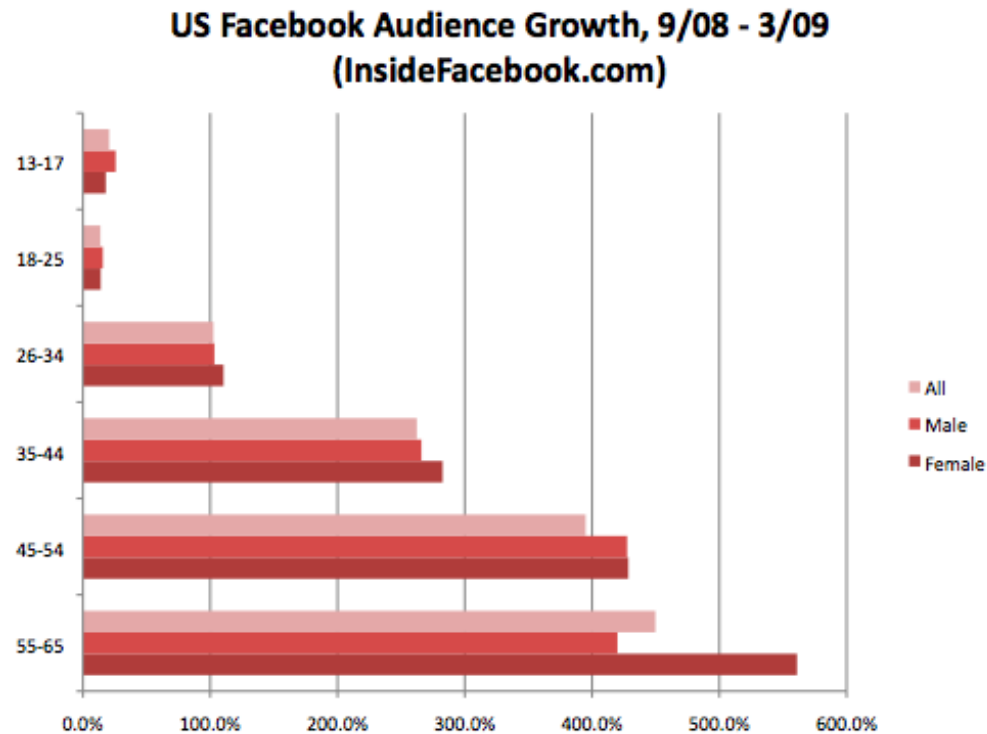
Jessica Shang
147 pts
9th

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

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

From Al Gore to Mark Zuckerberg

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?

"YAYYYYYY

[http://www.facebook.com/l.php?u=http://geocities.com%2Frubingallegos09%2F%3Fdchbb850%3D13191be140046e6d498e1ac0d07d218c"](http://www.facebook.com/l.php?u=http://geocities.com%2Frubingallegos09%2F%3Fdchbb850%3D13191be140046e6d498e1ac0d07d218c)

Social 419 Scams

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 logged 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