

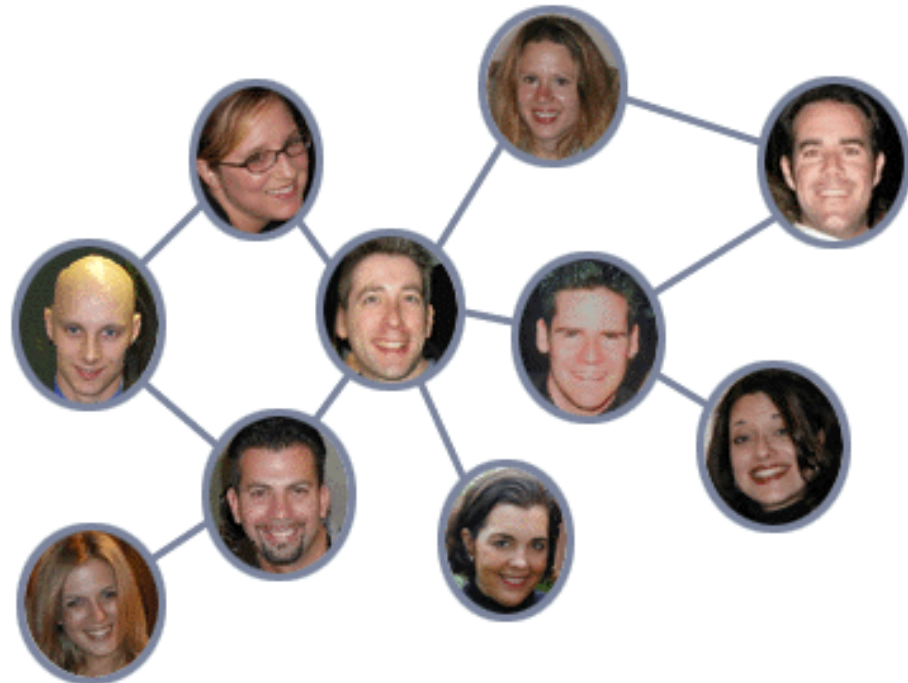
# Security and Privacy in SocioTechnical Environments



**Saman Zonouz**

University of Miami  
(Rutgers Fall'14 onwards)

iSocial Summer School  
June 2014



# Acknowledgements

- **Cyber Security and Forensics Research Group** [www.4-n-6.org](http://www.4-n-6.org)

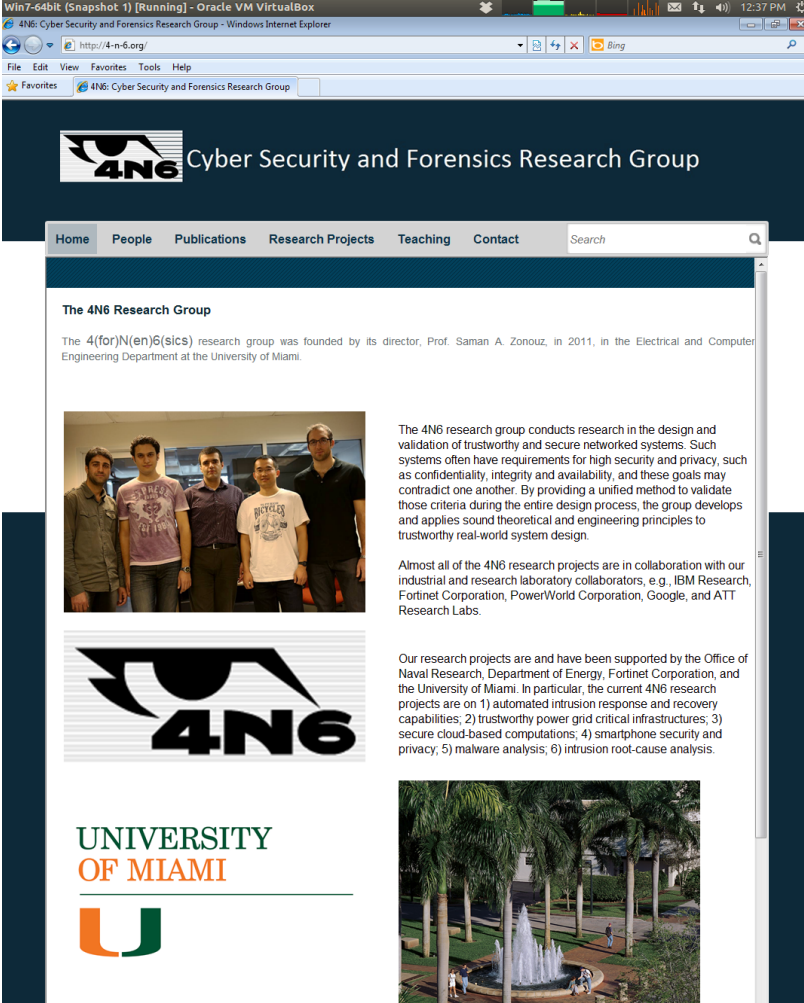
- *Gabriel Salles-Loustau (Ph.D.)*
- *Rui Han (Ph.D.)*
- *Luis Antonio Garcia (M.S.)*

- Collaborators/Sponsors

- *Kaustubh Joshi, AT&T Research*
- *Mihai Christodorescu, Qualcomm Research*
- *NSF, ONR, DOE, DHS, AFOSR, Fortinet*

- References

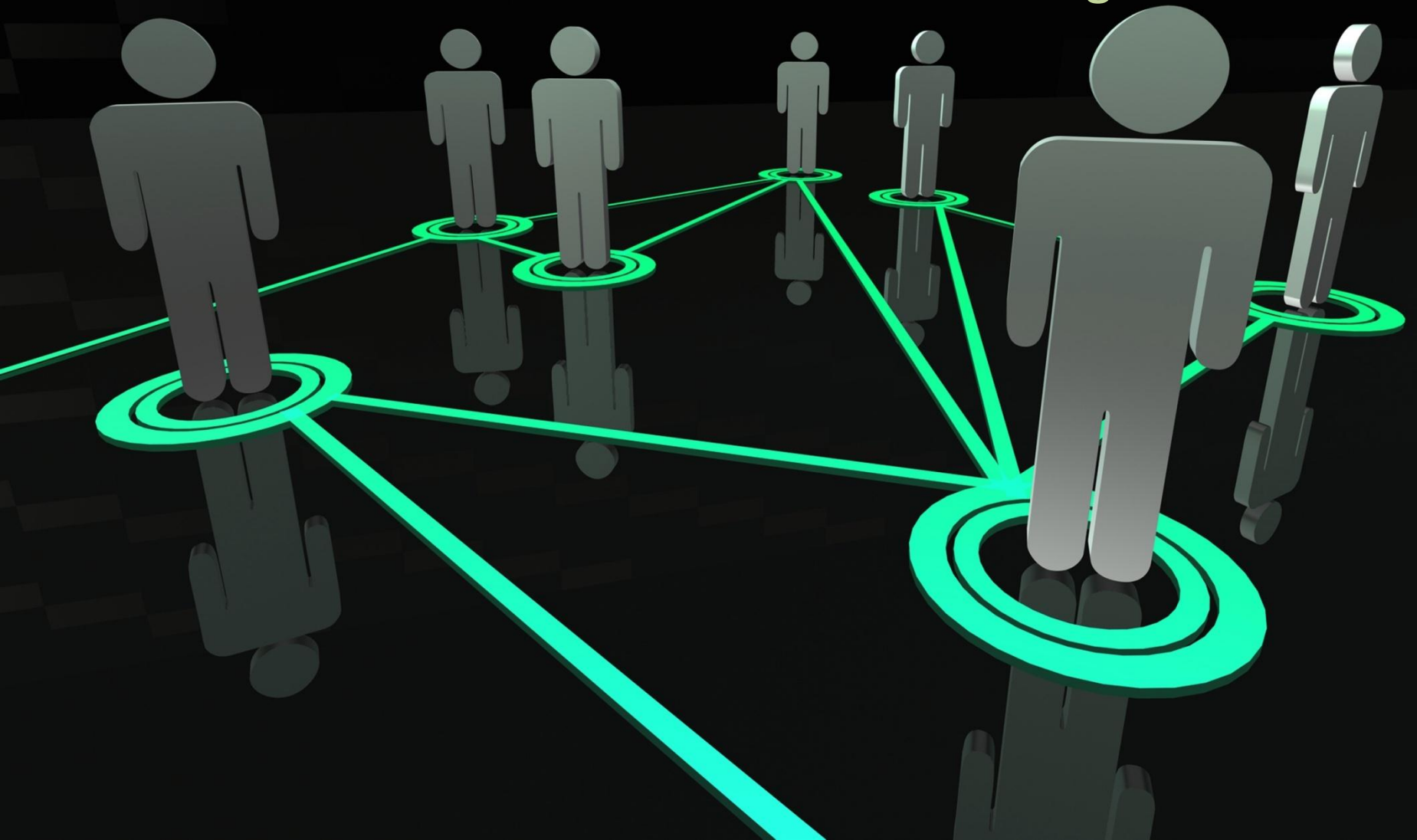
- *S. Callahan, the risk of social networking*



The screenshot shows a web browser window displaying the website for the 4N6 Cyber Security and Forensics Research Group. The browser title is "4N6: Cyber Security and Forensics Research Group - Windows Internet Explorer". The address bar shows "http://4-n-6.org". The website features a dark blue header with the 4N6 logo and the text "Cyber Security and Forensics Research Group". Below the header is a navigation menu with links for "Home", "People", "Publications", "Research Projects", "Teaching", and "Contact", along with a search bar. The main content area includes a section titled "The 4N6 Research Group" with a paragraph describing the group's founding and mission. Below this is a photograph of five people standing together. To the right of the photo is a text block describing the group's research focus on trustworthy and secure networked systems. Further down, there is another paragraph detailing the group's collaborations with industrial and research laboratory partners. At the bottom of the page, the University of Miami logo is displayed, consisting of the text "UNIVERSITY OF MIAMI" and a stylized "U" logo. A small photograph of a fountain on a campus is also visible in the bottom right corner.

# Fan, Friend or Foe?

The Risks of Social Networking







>2/3<sup>rd</sup> of online adults use social networks

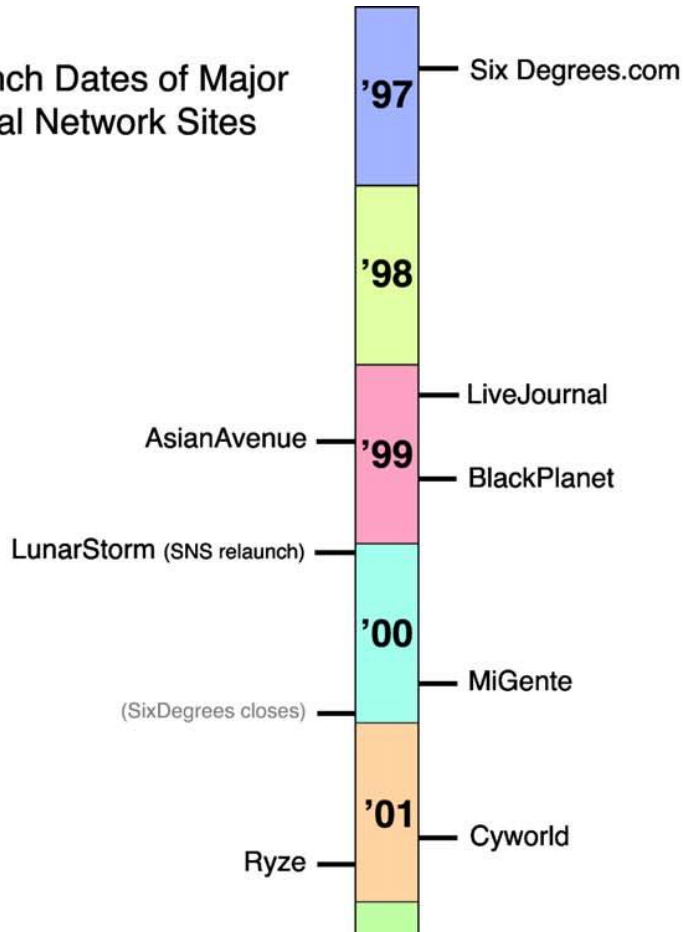
98% of university students use Facebook

Facebook has over 1B “active” users, half of which login on any given day, >300 million via their **smartphone device**

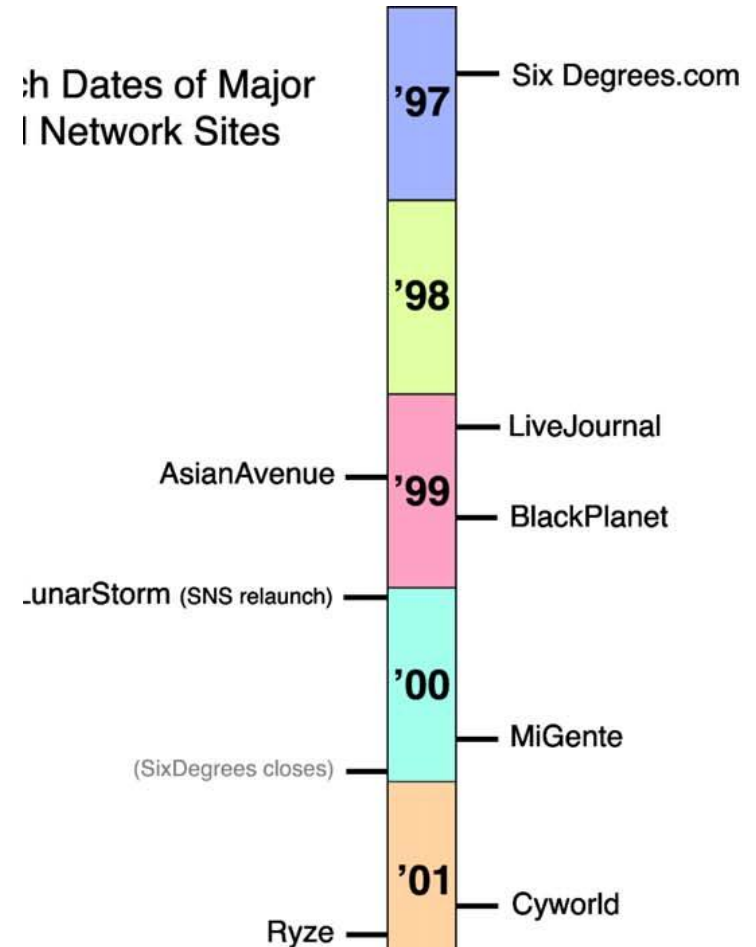
U.S. Facebook users 55 and older grew 922% in 2009 (now ~100M)

# History of Social Networking Sites

Launch Dates of Major Social Network Sites



Shutdown Dates of Major Social Network Sites



Click Around. Chrome fast.



Get Chrome  
The browser by Google >>

“MySpace is a place for friends.”

“MySpace is Your Space.”

“MySpace keeps you connected.”

Today on MySpace

Tuesday, May 25, 2010

### Cool New Videos



Robot Leads Wedding



Onion: President Lip-Syncing?



Blazing Fast Turtle Race

### More Video

- MySpace Video: Your Source for Great Videos
- Primetime: Catch Up with Your Favorite TV Shows
- Family Guy: Stewie is Still Set on World Domination
- Lost: The Epic Comes to an End
- The Simpsons: Do the Bartman

### Top Searches

Family Guy • Glee • Saturday Night Live • The Twilight Saga: Eclipse • TMZ • E! News • Lady Gaga  
Fuel TV • Justin Bieber • Miley Cyrus

Log In

Sign Up!

Email:

Password:

Log In

Remember Me

[Forgot your password?](#)

### Find Your Friends on MySpace

Find or browse members:

Search by name or email

Go

### Sponsored Links

**Blue4U**

Breaking Up Is Hard To Do. Let  
Blue4U Make It Better.

[BlueKC.com/Blue4U](http://BlueKC.com/Blue4U)

Facebook helps you connect and share with the people in your life.

## Sign Up

It's free and anyone can join

First Name:

Last Name:

Your Email:


New Password:

I am:

Birthday:

Why do I need to provide this?

[Create a Page for a celebrity, band or business.](#)



do you have a facebook?

“Giving people the power to share and make the world more open and connected.”





Search for a keyword or phrase...

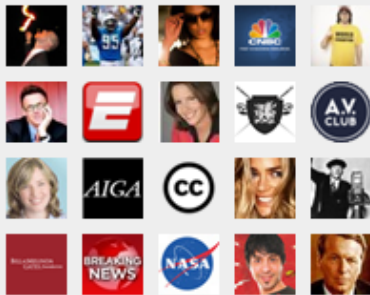
Search

Have an account? [Sign in](#)

Discover what's happening right now, anywhere in the world





KEY LINEにロコなう。 Pinoy Housemates Cnectd Geek Pride Paul Gray Lost finale Oil Spill TRENDING TOPIC

### See who's here



Friends and industry peers you know. Celebrities you watch. Businesses you frequent. Find them all on Twitter.

### Top Tweets [View all >](#)

-  **OMGihatethat** when teachers get off track and tell you stories about their life. #omgiLOVEthat  
17 hours ago
-  **OfficialPantera** RIP Paul Grey of Slipknot. Another loss to the metal community. <http://bit.ly/9J9LVd>  
19 hours ago
-  **nodoubt** Back in the studio again this week, the vibe here reminds me of recording sessions for TK and ROS and Rock Steady. Good times! -Tom  
19 hours ago
-  **kingsully** Why am I watching Lindsey Lohan on CNN when there are

### New to Twitter?

Twitter is a rich source of instant information. Stay updated. Keep others updated. It's a whole thing.

[Let me in >](#)

Customize Twitter by choosing who to follow. Then see tweets from those folks as soon as they're posted.

Using Twitter for a business? Check out [Twitter 101](#)



“Twitter is a service for friends, family, and co-workers to communicate and stay connected through the exchange of quick frequent answers to one simple question:

**What are you doing?”**

Over 65 million professionals use LinkedIn to exchange information, ideas and opportunities



Stay informed about your contacts and industry



Find the people & knowledge you need to achieve your goals



Control your professional identity online

Join LinkedIn Today

First Name:

Last Name:

Email:

Password:

6 or more characters

\*

[Already on LinkedIn? Sign in.](#)

Search for someone by name:

LinkedIn member directory: [a](#) [b](#) [c](#) [d](#) [e](#) [f](#) [g](#) [h](#) [i](#) [j](#) [k](#) [l](#) [m](#) [n](#) [o](#) [p](#) [q](#) [r](#) [s](#) [t](#) [u](#) [v](#) [w](#) [x](#) [y](#) [z](#) [more](#) | [Browse members by country](#)

\* By clicking Join Now, you are indicating that you have read, understood, and agree to LinkedIn's [User Agreement](#) and [Privacy Policy](#).



“Your professional network of trusted contacts gives you an advantage in your career, and is one of your most valuable assets. LinkedIn exists to help you make better use of your professional network and help the people you trust in return.”

**The tastiest bookmarks on the web.**  
Save your own or see what's fresh now!



[? Learn More](#)

HIDE INTRO 

Search the biggest collection of bookmarks in the universe...

Search Delicious

Search

Fresh Bookmarks

Hotlist

Explore Tags

The freshest bookmarks that are flying like hotcakes on Delicious and beyond.

[See more recent bookmarks](#) 

New bookmarks saved in the last minute **2 1 0**

What Happens to a YouTube Video After 1,000 Uploads? SAVE

11

via mashable.com

art < youtube < video < compression < repeat

[▶ 13 Related Tweets](#)

“Delicious is a Social Bookmarking service, which means you can save all your bookmarks online, share them with other people, and see what other people are bookmarking.”

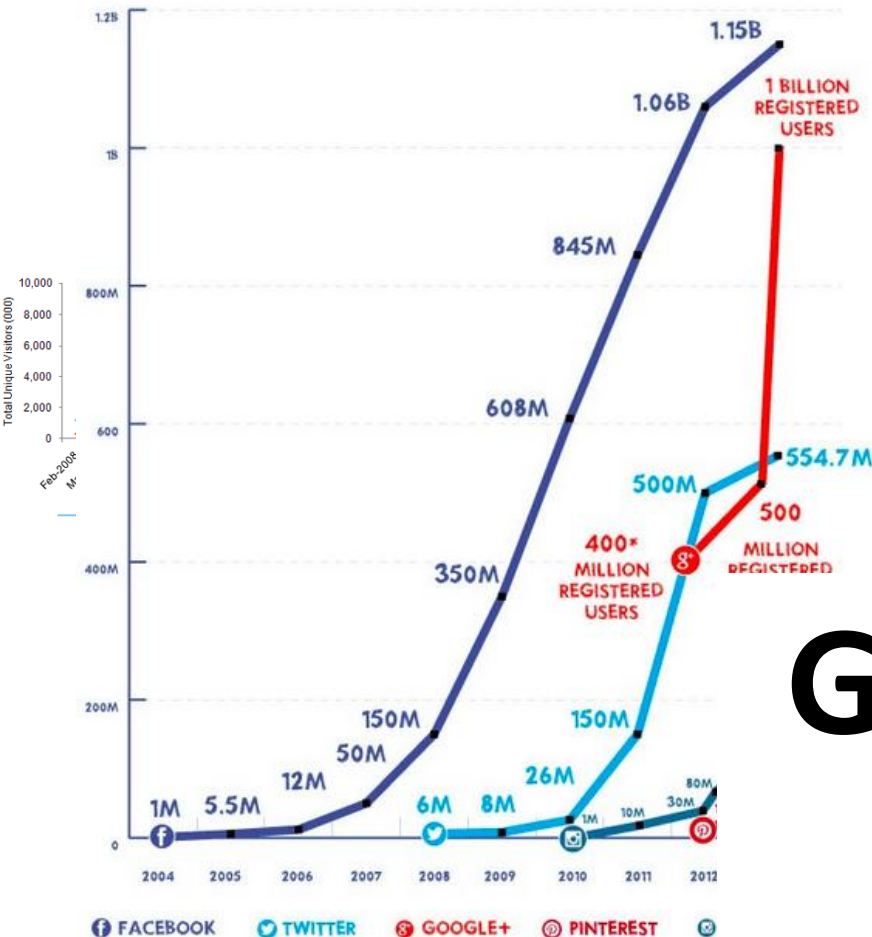


licensed under  Attribution-NonCommercial-ShareAlike 2.0 Germany | Ludwig Gatzke | <http://flickr.com/photos/stabilo-boss/>

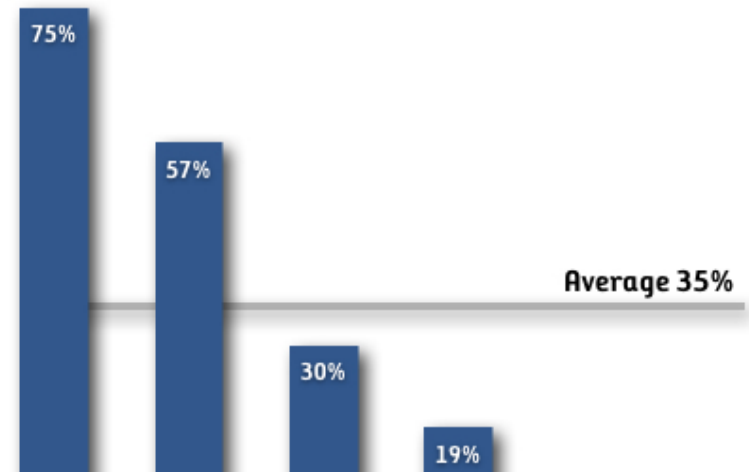
# Explosion of Social Networks

## SOCIAL MEDIA VISITOR GROWTH

### REGISTERED USERS



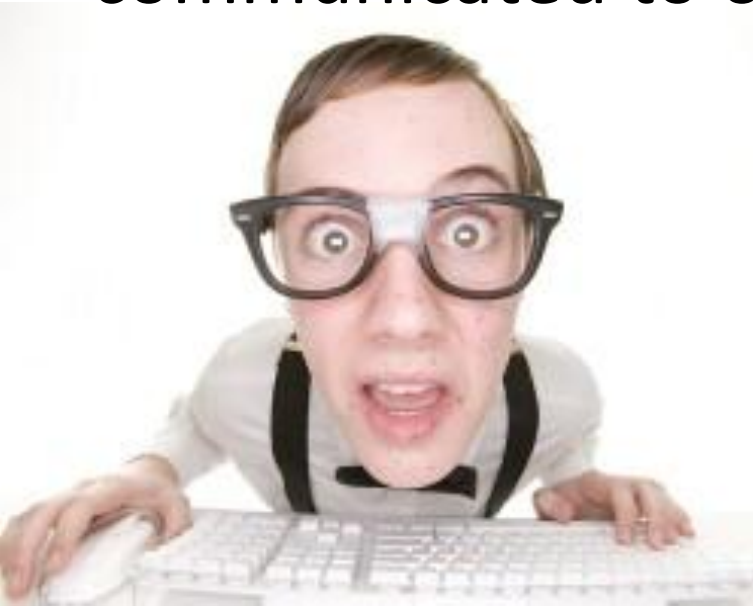
### Have a profile on a social network site Percentage of Internet Users, By Age



**Great Targets to  
Attack!**

# That Important “P” Word

privacy, : \ ' prī-və-sē, n. “The claim of individuals, groups or institutions to determine for themselves when, how and to what extent information about them is communicated to others.”



Wh

# Google gets take-down requests after European court ruling: source

BY ALEXEI ORESKOVIC

SAN FRANCISCO Wed May 14, 2014 7:53pm EDT

13 COMMENTS | Tweet 137 | Share 64 | Share this | +1 11 | Email | Print



- Malware
- Cyber-bu (“trolling

November 20, 2008  
First cyber  
Meier, 13,

- “Shelf-lif

How Tweet  
April 14th, 2010

- Privacy c
  - Inform
  - Inform
  - Inform share v

e)

and

# Revised Rights & Responsibilities



- “You
- “You  
privat

**Consent to Collection and Processing in the United States.**

**By using Facebook, you consent to having your personal data transferred to and processed in the United States.**

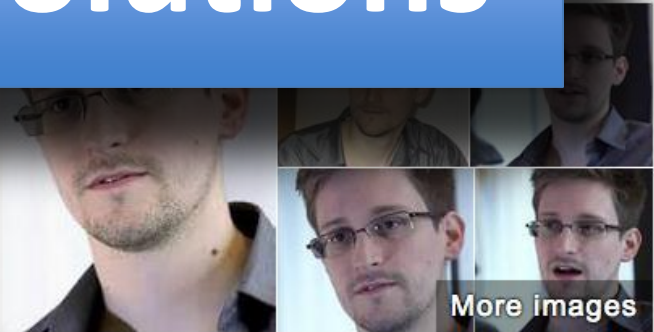
# System Security Solutions

Edward Joseph "Ed" Snowden (born June 21, 1983) is an American computer professional. A former systems administrator for the Central Intelligence Agency ...  
Five Eyes - Sam Adams Award - Prism - Booz Allen Hamilton

### News for snowden



**Edward Snowden NSA whistleblowing story to be filmed by ...**  
The Guardian - by Xan Brooks - 2 hours ago  
Director of Platoon and JFK will direct a big budget adaptation of Guardian journalist Luke Harding's book about **Snowden's** role in exposing



**Edward Snowden**  
System Administrator



# What Are The *Security* Risks?

- Can result in **social engineering**, identity theft, financial fraud, infected computers, stalking, child abuse, sexual predation, defamation, lawsuits, mad boyfriend/girlfriend/spouse/parent, unwanted legacy, embarrassment, ...

The Joy of Tech™

by Nitrozac & Snaggy



Signs of the social networking times.

from invitations@hi5.com ☆  
subject Jessica would like to be your friend on hi5!  
to You ☆



reply forward archive junk delete

11/6/09 11:26 AM

other actions

hi5

Home My Profile Friends Photos Messages Games Groups Applications

advanced

Join | Log in | Help  
Balance: 0 Coins



Meet new people and keep up with friends on hi5.

**Jessica would like to be your friend on hi5!**

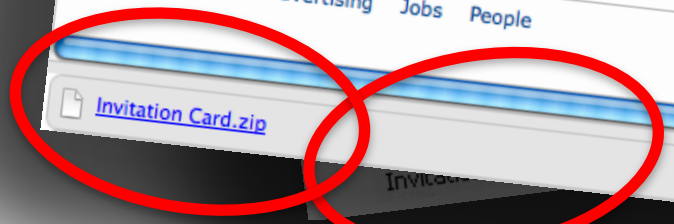
I set up a hi5 profile and I want to add you as a friend so we can share pictures and start building our network. First see your invitation card I attached! Once you join, you will have a chance to create a profile, share pictures, and find friends.

About Us Blog Advertising Jobs People

© 2003-2009 hi5 Networks

Privacy Policy | Terms of Service | Online Safety

Invitation Card.zip





# Conclusions

- **Security and Privacy** concerns in Social Networks are real and emerging!
- Nowadays, the main **weakness** in sociotechnical systems are **human factors**.
- **System** security solutions can address the problem fundamentally!

