



Security in knowledge

SOCIAL KLEPTO: CORPORATE ESPIONAGE WITH FAKE SOCIAL NETWORK ACCOUNTS

Dr. Paul Judge
Barracuda Networks

RSACONFERENCE2013

Session ID: BR-R32
Session Classification: Intermediate

Outline

- ▶ WHAT'S BETTER THAN STEALING MONEY?
- ▶ REVENUE, LEADS AND THE VALUE OF A LEAD
- ▶ SOCIAL KLEPTO
- ▶ HOW TO PROTECT YOURSELF

WHAT IS CORPORATE ESPIONAGE

- ▶ Corporate Espionage
- ▶ Competitive Intelligence
- ▶ Economic Espionage

- ▶ Typically:
 - ▶ product designs
 - ▶ old customer lists

Corporate Espionage with Product Designs

- ▶ DuPont (U.S.) vs. Kolon Industries (South Korea)
- ▶ \$919 Million civil lawsuit awarded
- ▶ Former DuPont employee left with a CD with manufacturing process for Kevlar
- ▶ Within 3 years Kolon had replicated it

Corporate Espionage with Old Customer Lists

- ▶ Marcone Supply vs 1st Source Servall
- ▶ New York Supreme Court
- ▶ Two sales reps left with old customer lists
- ▶ Took list of 3,300 existing customers
- ▶ Resulted in 640 customers stolen
- ▶ \$12 million in revenue loss.
- ▶ About 4% of their overall revenue

"A few months after the deal closed, however, Marcone noticed that many of Wagner's best customers were no longer placing orders."

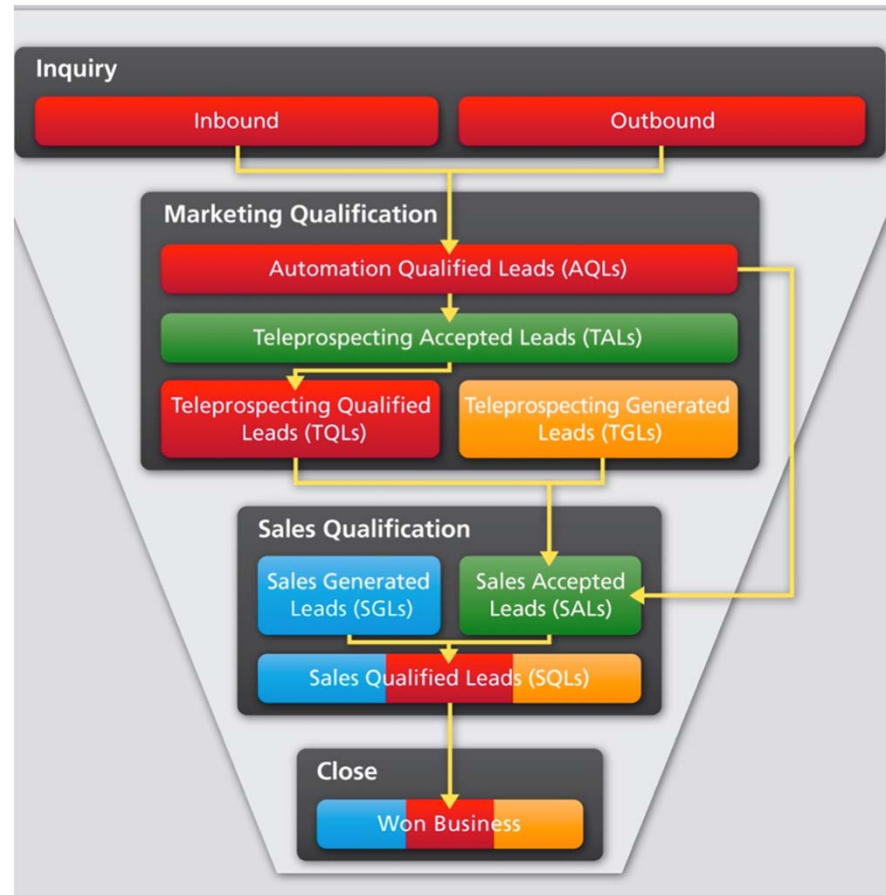
HOW MUCH IS A CUSTOMER WORTH?

- ▶ $CLV = M(R/(1+I-R))$
- ▶ CLV = CUSTOMER LIFETIME VALUE
- ▶ M = ANNUAL GROSS PROFIT
- ▶ R = CUSTOMER RETENTION RATE
- ▶ I = DISCOUNT RATE

CLV FOR NETWORK SECURITY COMPANY

- ▶ NETWORK SECURITY SERVICE
- ▶ \$200K/ YEAR GROSS REVENUE
- ▶ \$60K/ YEAR GROSS PROFIT
- ▶ RETENTION RATE = 90%
- ▶ DISCOUNT RATE = 10%
- ▶ $CLV = \$60,000 (0.9/(1+0.1-0.9))$
- ▶ = \$270,000

DEMAND WATERFALL



source: SiriusDecisions.com

VALUE OF A "SALES QUALIFIED LEAD"

LEAD STAGE	CONVERSION RATE	RATIO TO CUSTOMER	LEAD VALUE
INQUIRIES	3%	505.1	\$535
MARKETING QUALIFIED LEADS	55%	15.2	\$17,820
SALES ACCEPTED LEADS	40%	8.3	\$32,400
SALES QUALIFIED LEADS	30%	3.3	\$81,000
NEW CUSTOMERS		1	\$270,000

HOW TO BE A SOCIAL KLEPTO



Security in knowledge

Steps to Stealing Leads

- ▶ create bait (fake) LinkedIn accounts
- ▶ connect with sales reps at competitors
- ▶ monitor the activity and new connections of that competitor
- ▶ identify new qualified leads
- ▶ steal the lead

Bait Account Types



Four Types of Bait

- ▶ Customer Prospect
- ▶ Job Recruiter
- ▶ Old Colleague
- ▶ Good Looking Person

How To Make 'Customer Prospect'

- ▶ Blend Job History and Descriptions from similar people
- ▶ Join Industry-related LinkedIn Groups
- ▶ Connect with people around the target
- ▶ Monitor for 2nd & 3rd level connections
- ▶ Send requests to targets

How To Make 'Old Colleague'

- ▶ Choose low-level position at target company
- ▶ Connect with others from same company
- ▶ Monitor for 2nd & 3rd level connections
- ▶ Send requests to targets

How To Make 'Job Recruiter'

- ▶ Stage the account
- ▶ Connect with people around the target
- ▶ Monitor for 2nd & 3rd level connections
- ▶ Send mail about higher level job opening

How to make 'Good Looking Person'



Ways to Build a Base of Connections

- A. Send a lot of requests
- B. Network of fake accounts
- C. Buy connections
- D. Open accept accounts

Speed Bumps



Email Address Needed for an Invitation

Why do I have to enter an email address when I send an invitation?

Last Updated: 03/29/2012 [Report Answer Inaccuracies](#)

There are several reasons why you may be asked to enter an email address when you send invitations:

- The recipient's email preferences are set to only receive invitations from members who know their email address.
- You've reached the limit of invitations you can send without email addresses to people you've identified as a "Friend" during the invitation process.
- A number of recipients have clicked "I don't know this person" after getting your invitations.

Buying Connections

fiverr [Meet the seller who bo](#)



Search



"linkedin connections"



Search again in: Everything Collections

Search Results for "linkedin connecti... Found **139** best matches

Sort gigs by [Auto](#) [Rating](#) [New](#) [Haz Video](#) [Express Gigs](#)

 **I will grow your LinkedIn network to at least 501+ people for \$5**
Few Social Media experts get LinkedIn. ... (by [rickipll](#) )
[Online Marketing / Social Marketing](#) [order now!](#)

 **I will send 25 Followers to your LinkedIn company page for \$5**
Do you have a LinkedIn Company page? I will ... (by [ocollier](#) )
[Online Marketing / Social Marketing](#) [order now!](#)

 **Express I will give you 10,000 Active LinkedIn Connections for \$5**
I will help boost your LinkedIn Network by ... (by [bushpir8](#) )
[Online Marketing / Social Marketing](#) [order now!](#)

Open Networkers

Google "Open Networker" site:linkedin.com

Web Images Maps Shopping More Search tools

About 650,000 results (0.11 seconds)

[Open Networker | Skills | LinkedIn](#)
www.linkedin.com/skills/skill/Open_Networker
Meet top talent and see how you're connected Join LinkedIn to see top **Open Networker** professionals, groups and related job openings. Search Skills & ...

[OpenNetworker.com | LinkedIn](#)
www.linkedin.com/groups/OpenNetworkercom-35555/about
Oct 1, 2007 – If you are an **Open Networker**, please join! Questions? Please email us at toplinked@gmail.com. Note: The Group Rules are posted in the ...

[Joshua Cheshan \(Top linked, Open Networker\) | LinkedIn](#)
www.linkedin.com/in/jcheshan
Greater New York City Area - Recruitment Manager at United Recruiting Inc.
View Joshua Cheshan (Top linked, **Open Networker**)'s professional profile on LinkedIn. LinkedIn is the world's largest business network, helping professionals ...

[Norka Parodi {8000+}Open Networker | LinkedIn](#)
www.linkedin.com/in/norkaparodi
Boca Raton, Florida - Realtor® CDPE, CIAS, LMC, TRC
View Norka Parodi {8000+}**Open Networker's** professional profile on LinkedIn. LinkedIn is the world's largest business network, helping professionals like Norka ...

SOCIAL KLEPTO WEB INTERFACE



Security in knowledge

STEP 1: Start a New Social Klepto

Next

Company X
Barracuda

STEP 2: Choose Bait Accounts || Target:



Choose

Category: Healthy



Savanna Julianna
Personal Trainer/Actor,
Entertainment Organizer

Next Step

Next

Category: Business



Billingsley Tessa
BRS Business Department
Director, Global Accounts

Choose

Category: Law Firm



Naomi Dube
Intellectual Property Attorney
in a full service law firm

Choose

Category: Technology



Finn Aliyah
EVP and CTO of a Security
Cloud Company











Choose

Category: Business










Esmeralda Foster
Bank Manager and Business
Department Director

STEP 3: Search and Invite Targets || Target: [REDACTED]

 <p>Savanna Julianna Personal Trainer/Actor, Entertainment Organizer</p>	<input type="button" value="Invite"/>	 <p>Dube Cora [REDACTED]</p>
	<input type="button" value="Invite"/>	 <p>Tessa Swenson Vice President - Worldwide Sales / Identity Protection & Verification and Global Accounts</p>
	<input type="button" value="Invite"/>	 <p>Billingsley Tessa Sales Engineer and Product Evangelist</p>
 <p>Naomi Dube Intellectual Property Attorney in a full service law firm</p>	<input type="button" value="Invite"/>	 <p>Foster Taylor Senior Security Sales Engineer [REDACTED]</p>
	<input type="button" value="Invite"/>	 <p>Pham Mosher Regional Sales Manager, Mid-Atlantic Commercial [REDACTED]</p>
 <p>Finn Aliyah EVP and CTO of a Security Cloud Company</p>	<input type="button" value="Invite"/>	 <p>Bianca Carlton Senior Manager, Federal Sales Engineering [REDACTED]</p>
	<input type="button" value="Invite"/>	 <p>Naomi Dube Director, North American Pre-Sales [REDACTED]</p>



STEP 4: Steal Social Streams || Target: [REDACTED]

Target	Status	Actions
 Tessa Swenson Vice President - Worldwide Sales / Identity Protection & Verification and Global Accounts	Accepted	Steal Info
 Dube Cora [REDACTED]	Invited	
 Piper Caroline Sr. Pre-Sales Consultant [REDACTED]	Accepted	Steal Info
 Love Kahn Information Security Sales Professional	Accepted	Steal Info
 Brooklyn Maggie Recruiting for Sales Engineers in Santa Clara and Denver	Invited	
 Adkins Bruce [REDACTED] Director of Sales [REDACTED]	Invited	
 Mckinney Jordyn Productivity Manager - America's Channel & Inside Sales [REDACTED]	Invited	

STEP 5: Monitoring Target Social Streams || Target: [REDACTED]

Target Profiles	Target Streams
 <p>Dube Cora [REDACTED] [REDACTED]</p> <p>Refresh Stream</p>	<p>Feb-22 Dube connected [REDACTED] Director of Sales, Western US/Canada at Proofpoint</p> <p>Feb-18 Dube connected [REDACTED] Global Sales Manager at Cisco Systems</p> <p>Feb-12 Dube connected [REDACTED] Truckee Real Estate, Tahoe Donner Homes, Your Tahoe Realtor for the Truckee and North Lake Tahoe Areas</p> <p>Feb-11 Dube connected [REDACTED] EMC Area Manager at Arrow Electronics</p> <p>Feb-10 Dube connected [REDACTED] Director of Data Analytics at Intel Media</p> <p>Feb-09 Dube connected [REDACTED] Independent Financial Consultant</p> <p>Feb-06 Dube connected [REDACTED] Corporate Account Executive at ClearSlide</p> <p>Feb-05 Dube connected [REDACTED] Sales Consultant at ETC</p>
 <p>Kahn Forrest Manager, Inside Sales [REDACTED] [REDACTED]</p> <p>Refresh Stream</p>	<p>Feb-22 Kahn connected [REDACTED] Product Manager at Cisco</p> <p>Feb-14 Kahn connected [REDACTED] Executive Recruiter</p> <p>Feb-06 Kahn connected [REDACTED] Managing Partner at Golden Hire Consulting</p> <p>Feb-06 Kahn connected [REDACTED] Providing Expertise, Scalable Technology and Protection Through Shared Liability For Massachusetts Area Organizations</p> <p>Feb-06 Kahn connected [REDACTED] North East Regional Sales Manager</p> <p>Feb-05 Kahn connected [REDACTED] Project Planner at BAE Systems</p>
 <p>Brooklyn Maggie Recruiting for Sales Engineers in [REDACTED] [REDACTED]</p> <p>Refresh Stream</p>	<p>Feb-20 Brooklyn connected [REDACTED] Managing Partner ARG -AgentHR Recruiting Group Talent Acquisition Technology Sales Sales Engineers</p> <p>Feb-10 Brooklyn connected [REDACTED] Manager, Sales Operations at Entrust</p> <p>Feb-07 Brooklyn connected [REDACTED] Squash Professional</p> <p>Feb-06 Brooklyn connected [REDACTED] Client Partner, Identity and Access Management at Verizon Business</p>

Social Klepto Dashboard || Target:

Bait Accounts	#Invitation	#Accept	#Stream
 Savanna Julianna Personal Trainer/Actor, Entertainment Organizer	28	15 53.57%	8 28.57%
 Naomi Dube Intellectual Property Attorney in a full service law firm	28	17 60.71%	9 32.14%
 Finn Aliyah EVP and CTO of a Security Cloud Company	28	7 25.00%	3 10.71%
 Esmeralda Foster Bank Manager and Business Department Director	28	9 32.14%	5 17.86%

FAKE ACCOUNTS ON FACEBOOK



Security in knowledge

Rogue Facebook Apps



Ebo [redacted]

Facebook will close down all accounts today. The official announcement was made by Mark Zuckerberg – Facebook Owner. This is a simple step to keep your account working. If you want to have your account from now, please verify your account.



9 minutes ago via Social Network Closedown – Official Announcement
- Like - Comment



Ebo [redacted]

Mark Zuckerberg – Official Announcement.
The owner of Facebook announced that all account will be shut down today. In order to keep your account alive, you MUST verify your account.



Official Announcement – Account verification

All accounts will shut down starting today, 29th January.

If you want your account alive, please verify it.







9 minutes ago via Social Network Closedown – Official Announcement
- Like - Comment

Rogue Facebook Apps: Data Access

Request for Permission

Social Network Closedown – Official Announcement is requesting permission to do the following:

-  **Access my basic information**
Includes name, profile picture, gender, networks, user ID, list of friends, and any other information I've shared with everyone.
-  **Post to my Wall**
Social Network Closedown – Official Announcement may post status messages, notes, photos, and videos to my Wall
-  **Access my data any time**
Social Network Closedown – Official Announcement may access my data when I'm not using the application
-  **Manage my pages**
Social Network Closedown – Official Announcement may login as one of my Pages

Use of this data is subject to the Social Network Closedown – Official Announcement [Privacy Policy](#) - [Report App](#)

Logged in as Paul Qantas Judge (Not You?)

Rogue Facebook App: Developer



- Info
- Wall
- Discussions
- Reviews

0
monthly active users

Category
All

This app was not developed by Facebook.

- Add to My Page
- Add to My Page's Favorites
- Block App
- Contact Developer
- Report App
- Share

Hidden Truth Video

App

 Like [Go to App](#)

Developers


Kit Agron

Reviews [All Reviews](#)

Rating: ★★★★★

Write a review of Hidden Truth Video...

[Share Review](#)

There are no reviews. [Write one.](#)

Rogue Facebook App: Developer

Kit Agron [+1 Add as Friend](#)

🏠 Lives in Spokane, Washington

Arts and Entertainment

Music

Avril Lavigne AC/DC AKON

Books

Stephen King - writer Sadece Sen .! Surfing

Movies

Saw Selena Gomez Vin Diesel Dr. House

Wall
Info
Friends

Share Profile
Report/Block This Person


Profile Pictures of Fake Users





Fake Friends Can Steal Accounts

Reset Your Password?

If you're sure that this is your account, please click [Reset Password](#). We'll send you an email, text message, and/or a phone call to reset your password.



Paul Qantas Judge
Atlanta, GA

 Email	
p****e@p****.com	<input checked="" type="checkbox"/>
p***@t*****.com	<input checked="" type="checkbox"/>
p*****e@g****.com	<input checked="" type="checkbox"/>
p***@p*****.com	<input checked="" type="checkbox"/>
 SMS	
*****5923	<input type="checkbox"/>


[No longer have access to these?](#)

If you have a different problem accessing your account, please see our [Login Problems Help Page](#)

Have a password reset code already?

Fake Friends Can Steal Accounts: Step 2

Recover Your Account Through Friends



Paul Qantas Judge
Atlanta, GA

The only way to prove that this is your account is to show that your friends know you. [More ▾](#)

You'll need to:

- Step 1** Choose 3 trusted friends
- Step 2** Call your friends to get security codes.
- Step 3** Recover your account.

This process takes a few minutes for your friends.

To learn more about this process, visit our [Help Center](#).

[Continue](#) [Cancel](#)

Fake Friends Can Steal Accounts: Step 3

Select a Friend to Assist You (1 of 3)

Choose a trusted friend you can easily reach by phone. After you confirm your choices, your friends will receive instructions on how to help you.

Filter Friends ▼

All Selected (0)



Lindsey
Aunjel
Eubanks



Aarjav
Trivedi
Georgia ...



Aaron
Chilton



Aaron
OldPage
Dunn



Abina
Billups



Abraham
Wallace

facebook. USER PROFILES

REAL vs. **FAKE**
PEOPLE PROFILES

Identify themselves as female



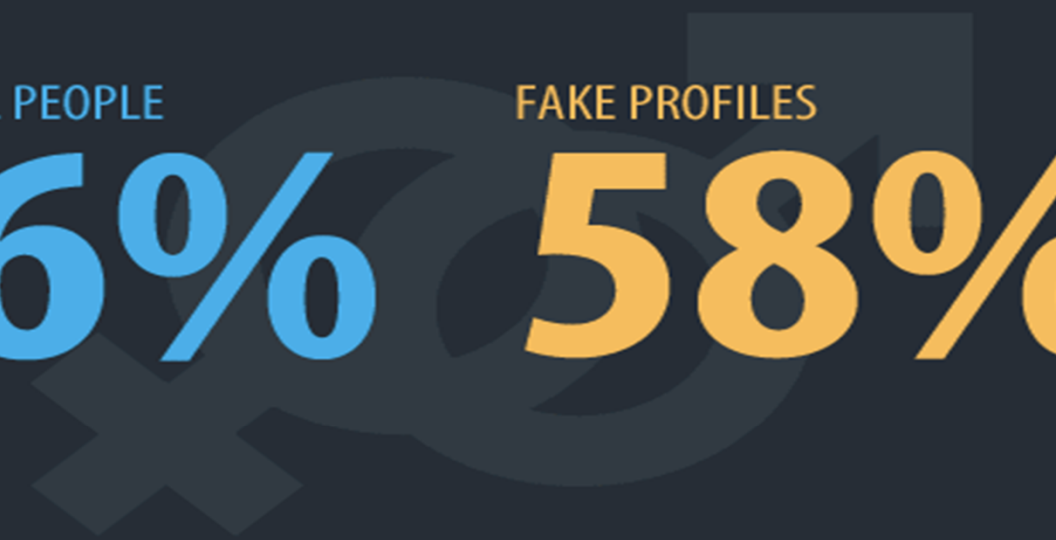
Females interested in both men and women

REAL PEOPLE

6%

FAKE PROFILES

58%



Claim to have attended college

40%

REAL PEOPLE



68%

FAKE PROFILES



Average number of friends

REAL PEOPLE

130

FRIENDS

FAKE PROFILES

726

FRIENDS

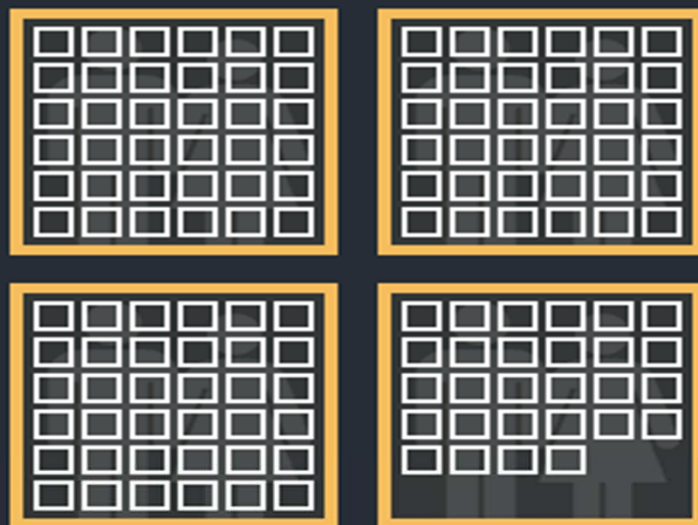
Average number of tags per photo

REAL PEOPLE



1 TAG FOR EVERY
FOUR PHOTOS

FAKE PROFILES



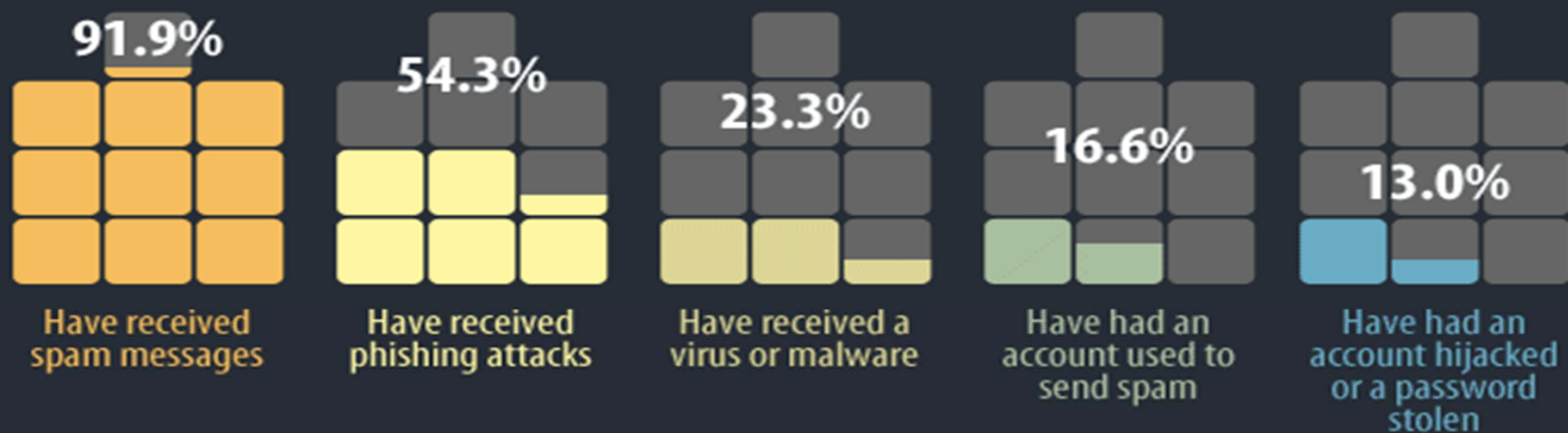
136 TAGS FOR EVERY
FOUR PHOTOS

BARRACUDA LABS SURVEY RESULTS

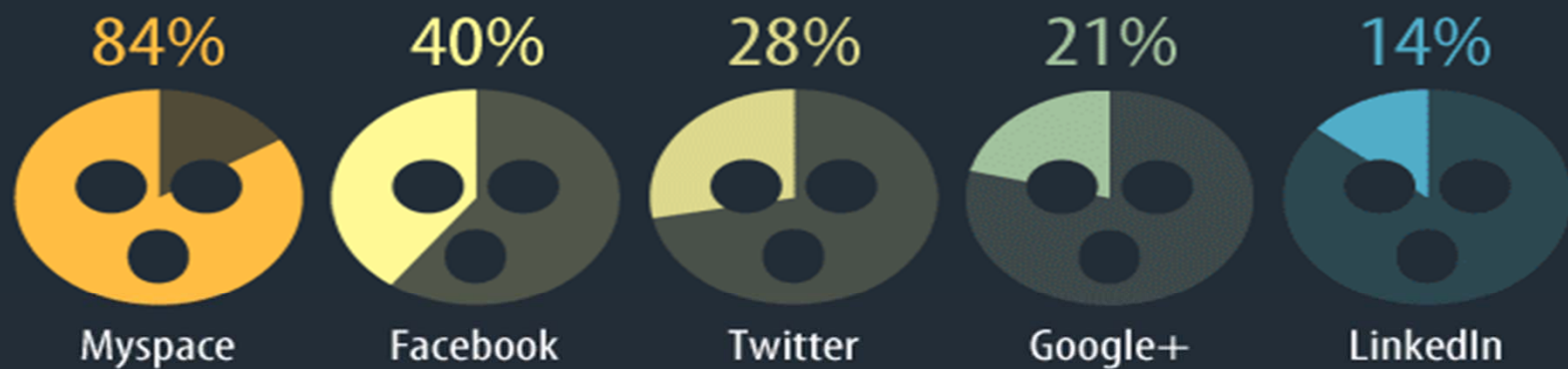
Social Networking Security & Privacy

Based on survey respondents
representing 21 countries.

Problems or attacks that respondents have personally experienced on social networks



Percentage of respondents who feel unsafe on the following social networks



1 in 5 respondents has been negatively affected by information that was exposed on a social network?



73%

of respondents
think that
employees share
too much online.

**Percentage of respondents
that feel that employee
behavior on social
networks can endanger
company security:**

86%

Are you controlling social network usage in the workplace?



SOCIALKLEPTO RESULTS



Security in knowledge

A Fortune 50 Qualified Lead



Aliyah Finch
Vice President
Worldwide
Sales, [redacted]

Refresh Stream

- Feb-19 Aliyah connected [redacted] **High-Tech Marketing Expert**
- Feb-18 Aliyah connected [redacted] **IBM Fellow**
- Feb-18 Aliyah connected [redacted] **Director of Information Security at Omgeo**
- Feb-17 Aliyah connected [redacted] **Experienced and Versatile Sales Operations Professional**
- Feb-17 Aliyah connected [redacted] **WebSphere Sales at IBM Federal Software**
- Feb-16 Aliyah connected [redacted] **Enterprise Security Architect**
- Feb-14 Aliyah connected [redacted] **Regional Sales Manager at NetWitness**
- Feb-14 Aliyah connected [redacted] **Executive Manager**
- Feb-04 Aliyah connected [redacted] **Sr. Director, Strategic Accounts & Alliances - Security at VSS Monitoring**
- Feb-26 Aliyah connected [redacted] **Chief Cyber Security Architect at The Boeing Company**

A Renewal/Displacement Opportunity



Paige Joanna

**Inside Sales
Maintenance
Renewal (West**

Coast)

Refresh Stream

Feb-20 Paige connected **Escalation manager Americas**

Feb-15 Paige connected **Manager, Vendor and Contract, Federal Home
Loan Bank of San Francisco**

Feb-10 Paige connected **Recent Finance & Management Graduate
Seeking New Opportunities**

A Major Sales Project Underway



Taylor Wyman
Regional Sales
Director

Refresh Stream





- Feb-21 Taylor connected [redacted] Recruiter, Sourcer
- Feb-21 Taylor connected [redacted] VP and Chief Information Security Officer at First National Nebraska Inc.
- Feb-20 Taylor connected [redacted] VP of North American Sales at Authentify, Inc.
- Feb-19 Taylor connected [redacted] Technical Architect at Sprint
- Feb-18 Taylor connected [redacted] Systems Support Analyst at MoneyGram International
- Feb-08 Taylor connected [redacted] Director Corporate Procurement IT Strategic Sourcing at Express Scripts, Inc.
- Feb-07 Taylor connected [redacted] Sr. Sales Director - Midwest Region at LexisNexis
- Feb-07 Taylor connected [redacted] Sr. Technical Specialist at BIC Healthcare
- Feb-05 Taylor connected [redacted] Security Architect at MoneyGram International
- Feb-05 Taylor connected [redacted] Information Security Leader
- Feb-05 Taylor connected [redacted] Account Executive at Fishnet Security, Inc.
- Feb-25 Taylor connected [redacted] VP - Information Security at Western Union
- Feb-25 Taylor connected [redacted] AVP Specialty Finance at One Nevada Credit Union
- Feb-25 Taylor joined Outsourcing Forum for Contact Center Professionals
- Feb-25 Taylor connected [redacted] SVP/Group Head - Fraud Management Solutions at MasterCard

HOW TO NOT GET ROBBED



Security in knowledge

Change Default Profile Settings

 Profile	Privacy Controls	Settings
 Email Preferences	Turn on/off your activity broadcasts	Manage your Twitter settings
 Groups, Companies & Applications	Select who can see your activity feed	Helpful Links
 Account	Select what others see when you've viewed their profile	Edit your name, location & industry »
	Select who can see your connections	Edit your profile »
	Change your profile photo & visibility »	Edit your public profile »
	Show/hide "Viewers of this profile also viewed" box	Manage your recommendations »

Activity Broadcasts

Activity broadcasts ✕

By selecting this option, your activity updates will be shared in your activity feed.

Let people know when you change your profile, make recommendations, or follow companies

Note: You may want to turn this option off if you're looking for a job and don't want your present employer to see that you're updating your profile.

[Save changes](#) or [Cancel](#)

Your Activity Feed

Who can see your activity feed ✕

Your activity feed displays actions you've performed on LinkedIn. Select who can see your activity feed.


Your connections ↕

Save changes or Cancel

Your Identity When Browsing


What others see when you've viewed their profile

Your name and headline (Recommended)

 paul judge
United States

Anonymous profile characteristics such as industry and title

Note: Selecting this option will disable Profile Stats.

 **Someone on LinkedIn**

You will be totally anonymous.

Note: Selecting this option will disable Profile Stats.

or Cancel

Other Uses Of SocialKlepto

- ▶ Sales Leads
- ▶ M&A Intel
- ▶ Hiring Intelligence



Adkins Cheyenne
Recruiting for
Sales Engineers
in Santa Clara

and Denver

Refresh Stream

Feb-20 Adkins connected [redacted] **Managing Partner |** [redacted]
[redacted] Talent Acquisition | Technology | Sales | Sales Engineers

Feb-10 Adkins connected [redacted] **Manager, Sales Operations at** [redacted]

Feb-07 Adkins connected [redacted] **Squash Professional**

Feb-06 Adkins connected [redacted] **Client Partner, Identity and Access Management at** [redacted]

Feb-26 Adkins connected [redacted] **Systems Engineer at** [redacted]



Security in knowledge

SOCIAL KLEPTO: CORPORATE ESPIONAGE WITH FAKE SOCIAL NETWORK ACCOUNTS

Dr. Paul Judge
Barracuda Networks

RSACONFERENCE2013

Session ID: BR-R32
Session Classification: Intermediate