Mo' Money Mo' Problems

Making A LOT more money on the Web the black hat way

Jeremiah Grossman Founder & Chief Technology Officer

Trey Ford
Director, Solutions Architecture

BlackHat USA 2009 07.30.2009



A study conducted by the Verizon Business RISK Team

2009 Data Breach Investigations Report





Jer-Jitsu

"The embodiment of converged IT and physical security." - InformationWeek

Director of Solutions Architecture

6 years as an information security consultant for Fortune 500s

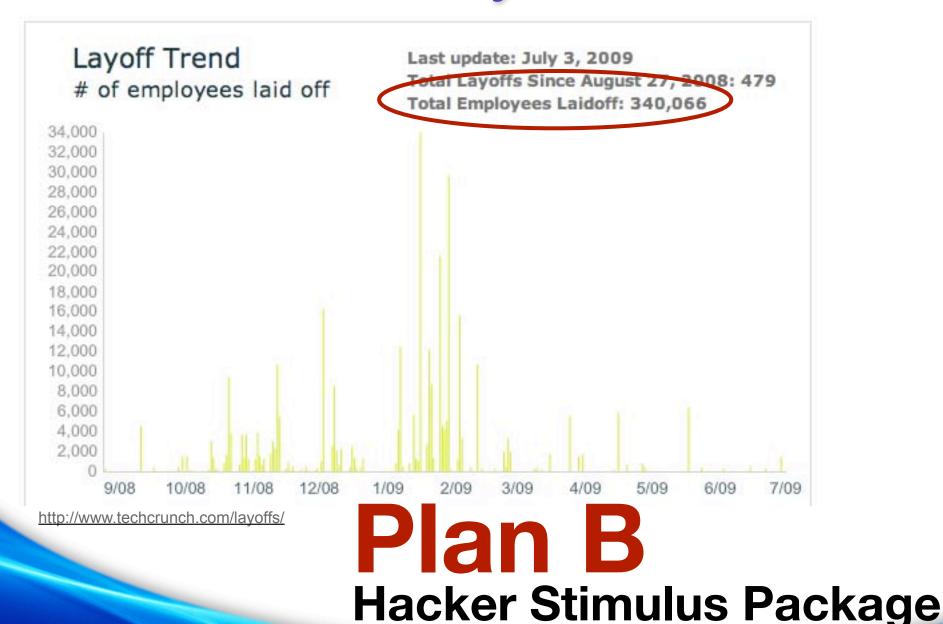
PCI-DSS Curmudgeon

???





TechCrunch Layoff Tracker





Get Rich or Die Trying, 2008...



Four figures: Solving CAPTCHAs

Five figures: Manipulating payment systems

High five figures: Hacking Banks

Six figures: Scamming eCommerce

High Six figures: Defraud Affiliate Networks

Seven figures: Gaming the stock market





http://www.youtube.com/watch?v=SIMF8bp5-qg

All still work just fine. :)





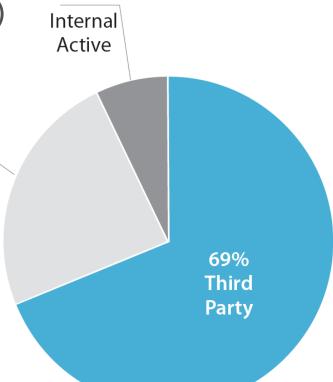
SHOW ME THE MONEY!



The target won't know

How the breach was detected:

- 3rd party detection due to FRAUD (55%)
- 3rd party detection NOT due to fraud (15%)
- Employee Discovery (13%)
- Unusual System Performance (11%)



2009 Data Breach Investigations Report

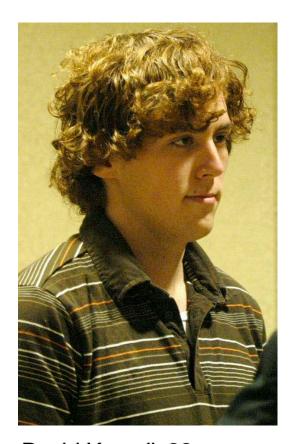


24%

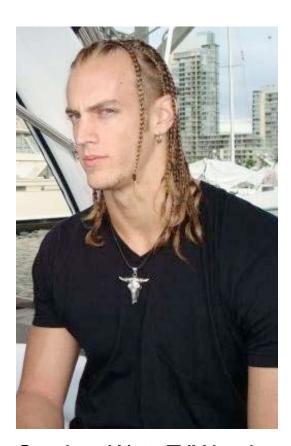
Internal Passive



Don't be that guy



David Kernell, 20 yearold student University of Tennessee student, allegedly hacked into former VP candidate Sarah Palin's Yahoo Mail.



Stephen Watt, TJX hack participant which the feds call "the largest identity theft in our Nation's history." AKA (Operation Get Rich or Die Tryin)



Gary McKinnon, described as the 'UFO Hacker,' allegedly broke into United States military and NASA computers to find evidence of government-suppressed information.

Attacker Targeting

Random Opportunistic

- Fully automated scripts
- Unauthenticated scans
- Targets chosen indiscriminately

Directed Opportunistic

- Commercial and Open Source Tools
- Authentication scans
- Multi-step processes (forms)

Fully Targeted

- Customize their own tools
- Focused on business logic
- Clever and profit driven (\$\$\$)



The Super Hacker?



Holiday Grinch-bots

eBay's "Holiday Doorbusters" promotion, administered by Strobe Promotions, was giving away 1,000 items -- 2009 corvette, plasma TVs, jet skis, diamond ring, etc -- to the first person to find and buy specially-marked \$1 items.



Some "contestants" used scripts, skipping to 'buy', without even viewing the goods. **Almost 100**% of the prizes were 'won' this way as evidenced by the **visitor counters showing "0000."**



Many were not happy and complaining in the forums. Disappointed with eBays response, some took matters into their their owns hands **listing "other" items for \$1**.



"This is **picture I took of my cat** with my Cannon Powershot Camera after she overheard that people where using scripting to purchase HOLIDAY DOORBUSTERS items on eBay. **Not** responsible for poor scripting techniques."



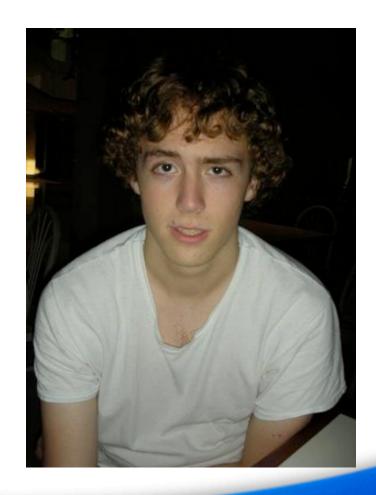
http://redtape.msnbc.com/2008/12/ebay-users-say.html



Recover someone else's password - it's a feature!







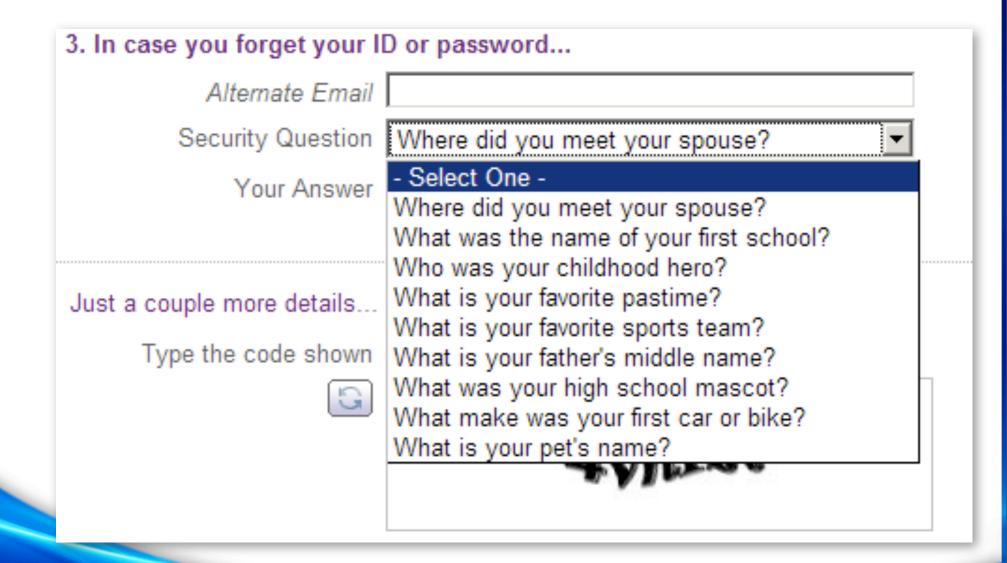
"Appropriate" access to Email

Start with just an email address

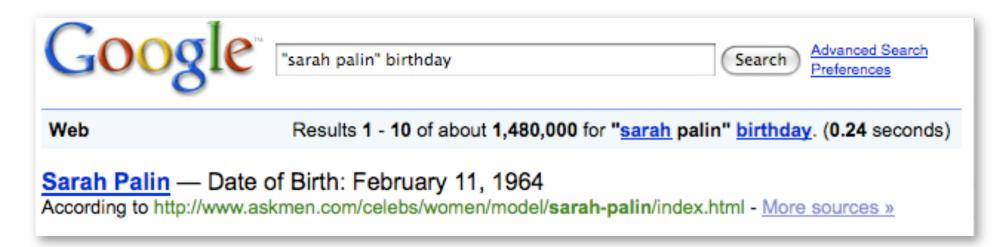
Yahoo! Home - Help						
Your Progress	VVh	at did you forget?	>	Verify your ide	ntity	Reset your password
Answer these questions to validate your identity We need to verify a few questions and we'll be done.						
Bi	irthday	- Select Month -	Day	Year		
Country of Resi	idence	- Select One -	7./			
Posta	al Code					
Exit Wizard						Next



Doing a little research



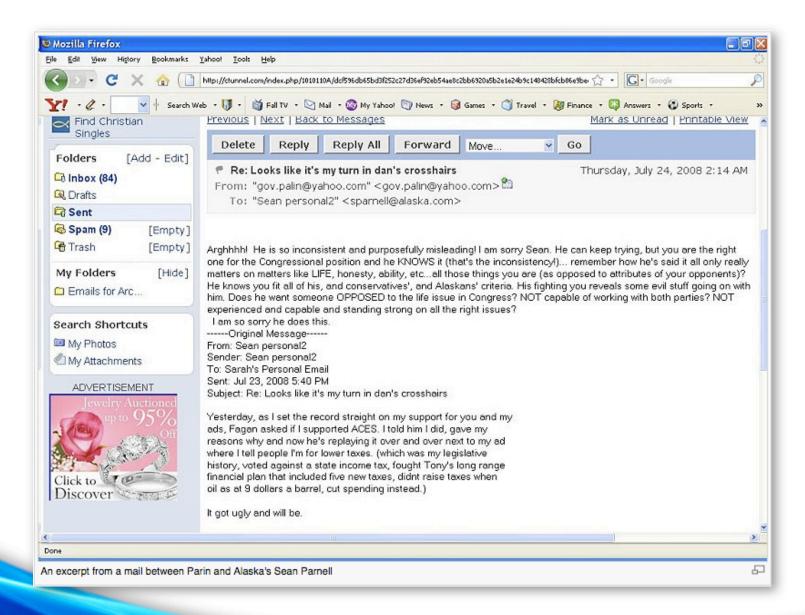
or 'lots' of research



Account information used by the anonymous 'hacktivists':

```
Sarah Palin account info:
gov.palin@yahoo.com
DOB 2/11/64
ZIP 99687
Todd Palin:
fek9wnr@yahoo.com
DOB: 9/6/64
ZIP 99654
```

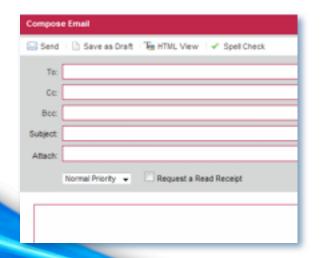
... and you've got MAIL

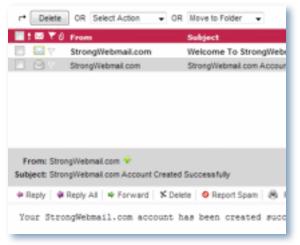


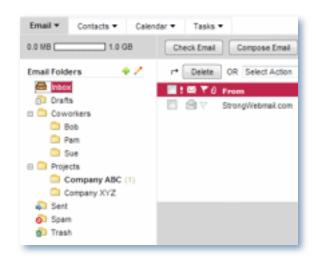
"The most secure email accounts on the planet"



To get into a StrongWebmail account, the account owner must receive a verification call on their phone. This means that even if your password is stolen, the thief can't access your email because they don't have access to your telephone.







http://www.strongwebmail.com/



Break into my email: get \$10,000. Here is my username and password.

May 21, 2009

Break into my email: get \$10,000. Here is my username and password.

Username: CEO@StrongWebmail.com

Password: Mustang85

Strong Webmail.com is offering \$10,000 to the first person that breaks into our CEO's Strong Webmail email account. And to make things easier, Strong Webmail is giving the username and password away!

http://www.strongwebmail.com/news/secure-web-mail/break-into-my-email-get-10000-here-is-my-username-and-password/

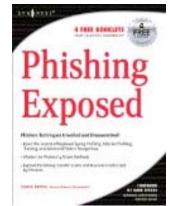


Lance James

Aviv Raff

Mike Bailey











http://twitpwn.com/



http://www.asscert.com/

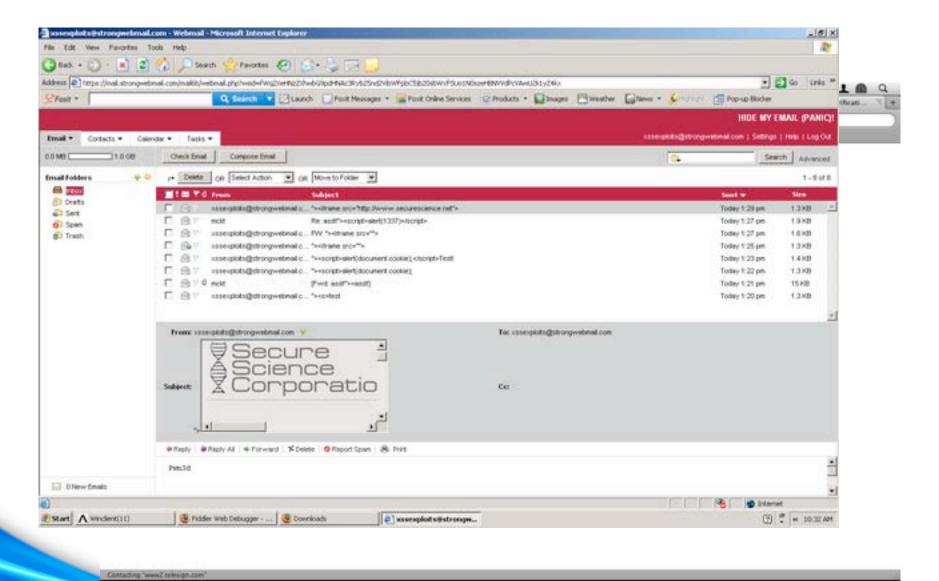


The easiest route

- 1) Registered an account and identified multiple XSS issues in a matter of minutes (Rackspace WebMail software).
- 2) Sent <u>ceo@strongwebmail.com</u> an email laced with specially crafted JavaScript malware
- 3) Emailed support@strongwebmail.com stating they won the contest and sent details to the CEO encouraging them to check the account.
- 4) Within minutes the email were opened, which initiated several Ajax requests to the server, pilfering the inbox, and sending the data to a remote logging script.

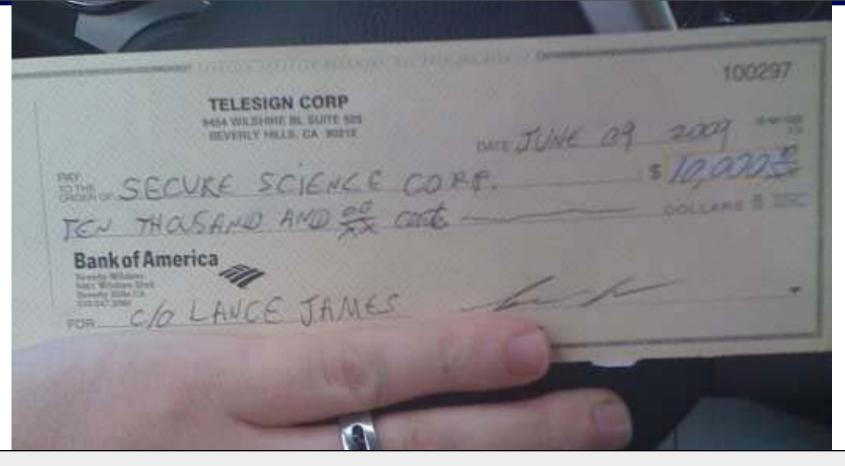


The easiest route



http://skeptikal.org/2009/06/strongwebmail-contest-won.html http://www.fireblog.com/exclusive-interview-with-strongwebmails-10000-hacker/





StrongWebmail said it was "not deterred" by the contest's quick conclusion and would be launching a new competition once this bug was fixed. "We won't rest until we have created the most secure e-mail in the world," the company said.



Twitter Hacker

Hacker Croll initiates a password recovery for a Twitter employee's Gmail account. Reset email to secondary account: ******@h******.com.



Guesses secondary Hotmail account, deactivated, but is able to re-register the account. Resends the reset email and bingo.



Pilfers inbox for passwords to other Web services, sets the Gmail password to the original so employee would not notice.



Used the same password to compromise employee's email on Google Apps, steal hundreds of internal documents, and access Twitter's domains at GoDaddy. Sent to TechCrunch.



Personal AT&T, MobileMe, Amazon, iTunes and other accounts accessed using username/passwords and password recovery systems.



"I'm sorry" - Hacker Croll

http://www.techcrunch.com/2009/07/19/the-anatomy-of-the-twitter-attack/



Promo codes for cheapskates

- X% and \$X off sales
- Free Shipping
- 2 for 1 Specials
- Add-Ons & Upgrades





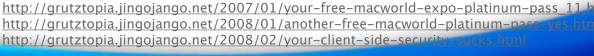
MacWorld Hacker VIP

Client-Side Hacking Back to Back Free MacWorld Platinum Pass (\$1,695)









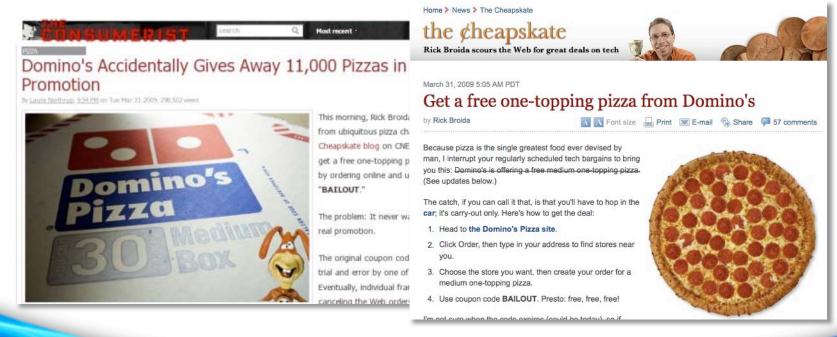
Free Pizza Tastes Better

March 31, 2009...

- 1. Go to the Domino's Pizza site.
- 2. Order a medium one-topping pizza.
- 3. Enter coupon code "BAILOUT" FREE!



Still have to go pick it up!



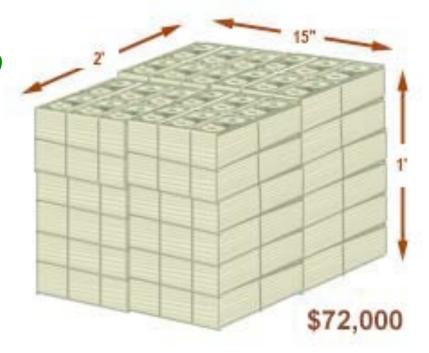


http://consumerist.com/5193012/dominos-accidentally-gives-away-11000-pizzas-in-bailout-promotion http://news.cnet.com/8301-13845_3-10207986-58.html

Share the Knowledge

11,000 X \$7.00 = \$77,000 (per pizza)

"Spoke to a Domino's rep, who told me the free-pizza code was created internally for a promotion that was never actually green-lit."



Scams that Scale

They make money, a little or a lot.

Generally not considered hacking.

Can do them over and over again.

Cookie-Stuffing

Instead of using affiliate links the "traditional" way:

```
<a href="http://AffiliateNetwork/p?
program=50&affiliate_id=100/">really cool product!</a>
```

Force affiliate requests with "Cookie Stuffing":

```
<iframe src="http://AffiliateNetwork/p?program=50&affiliate_id=100/"
width="0" height="0"></iframe>
```

Remove pesky referer by placing code on SSL pages:

"Clients SHOULD NOT include a Referer header field in a (non-secure) HTTP request if the referring page was transferred with a secure protocol." - RFC 2616

Affiliate networks will get suspicious of all these requests with no referers



Referer Manipulation

High traffic site, owned by the SEO and unknown by Affiliate network. IFRAME the site with "clean" referer.

```
<iframe src="http://niceseo/" width="0"
height="0"></iframe>
```

Clean site, also owned by SEO, serves up cookiestuffing code only to requests with referer of the black-hat website.

```
<iframe src="http://AffiliateNetwork/p?
program=50&affiliate_id=100/" width="0"
height="0"></iframe>
```

To the affiliate Affiliate network everything looks 100% legit when investigating. They will never see cookie-stuffing code. Mind the impression ratio!







Manufacturing Links

Identify websites with a high PR or traffic, with site: search features, whose link results do not have "nofollow", URLs block by robots.txt, and do not redirect.



"Powered by Google", but others may work as well. Use a link farm to link to search results pages so they get indexed.

<a href="http://www.weather.com/search/websearch?
Keywords=site:mysite.com+keyword&start=0&num=10&twx=on&type=web">
keyword pair



Remote Firefox Vulnerabilities ha.ckers.org web application ...

I actually sat in a hacker con and watched the Errata Security guys sniff everyone's traffic ... It's super super easy if you know what you are looking for. ...

ha.ckers.org/blog/20070530/remote-firefox-vulnerabilities/ - 20k - Cached - Similar pages

ha.ckers.org web application security lab

... double hashed because people think they're being super clever, etc...... <
DIV STYLE="background-image: uri(http://router/path.to.hack)">blah</DIV> ... ha.ckers.org/ - 45k - Cached - Similar pages

Token Authentication Gone Phishing ha.ckers.org web application ...

Hacker proof? No. Yes, time based makes it harder, and I think it's ... You may have a super-duper algorithm or communication protocol that ... ha ckers.org/blog/20060817/token-authentication-gone-phishing/ - 21k - Cached - Similar pages

SES SEO News ha.ckers.org web application security lab

... there that might point the hacker to a more useful location to attack. ...
It just happens that both super good guys and super bad guys ...
ha.ckers.org/blog/20060809/ses-seo-news/ - 8k - Cached - Similar pages

Looking glasses - hacking layers 2-3 via web applications hackers ...

So each super-massive-ISP sets up a script called a "looking glass" that is ... In this way you can hack the 2-3 OSI layers via the web ... ha.ckers.org/blog/20060620/looking-glasses-hacking-layers-2-3-via-web-applications/ - 9k - Cached - Similar pages

XSS Book ha.ckers.org web application security lab

But if I'm not super quick on the posts and answering email, The Javascript then pointed to PHP script on the hacker's server. ... hackers org/blog/20070128/xss-book/ - 25k - Cached - Similar pages Cheque No: Client No:

PEBRUARY 27, 2006 Jute:

**901,733.84

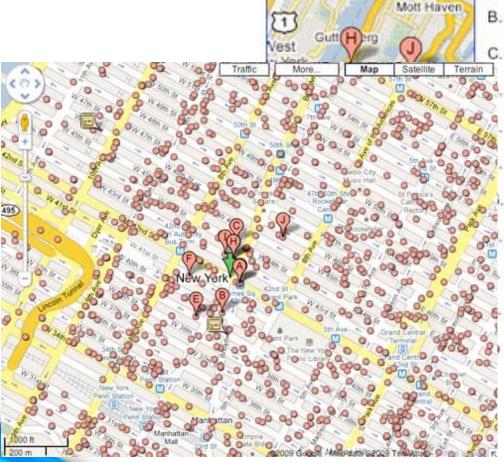
Or Order

IN DOLLAR

Willen Mul

Google Maps vs. Spammers

Local business results for emergency locksmith near New York, NY



- A. Locksmith NYC (866) 303-3232 Emergency Locksmith 24 Hour www.locksmith-911.com - (866) 620-2929 - More
- B. New York Locksmith / Emergency (866) 992-8787 New York www.locksmithservice.info (866) 992-8787 More
- C. LOCKSMITH 866-992-8787 NEW YORK Emergency Service www.locksmith-911.com - (866) 272-6287 - More
 - Locksmith NYC (866) 303-3232 Emergency Locksmith 24 Hour -
 - www.24hours-locksmith.com (866) 303-3232 1 review
 - LOCKSMITH 866-992-8787 NEW YORK Emergency Service -
 - www.locksmith-911.com (866) 697-6024 More
 - LOCKSMITH 866-992-8787 NEW YORK Emergency Service -
 - www.locksmith-911.com (866) 282-9705 More
 - Locksmith in NYC 866-303-3232 Emergency 24 Hours -
 - www.24hours-locksmith.com (866) 303-3232 More
 - Locksmith 866-992-8787 New York Emergency Service -
 - www.locksmith-911.com (877) 807-6812 More
 - LOCKSMITH 866-992-8787 NEW YORK Emergency Service -
 - www.locksmith-911.com (866) 738-0963 More
 - Locksmith 866-992-8787 New York Emergency Service -
 - www.locksmith-911.com (877) 878-6710 1 review

More results near New York, NY »



http://blumenthals.com/blog/2009/02/25/google-maps-vs-locksmiths-spammers-spammers-winning/http://thehollytree.blogspot.com/2008/02/scam-alert-phony-israeli-owned.html

Google Local Business Center



New! Now offering a reporting dashboard. Learn how people find your business.

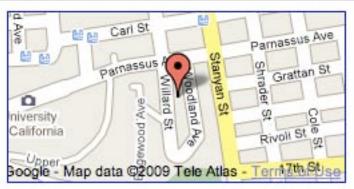


1 24 Hour 7 Day a Lock a Lockmsith

Write a review

1448 Willard St San Francisco, CA 94117-3721 (415) 375-7680

Get directions: To here - From here Add or edit your business



Help customers ring you on Google, it's tree.



Free listing

Local customers already search Google for the products and services you offer. Create a business listing to be sure they find you.



Free updates

Keep your address, phone number, hours of operation, and more up-to-date. Even create coupons and display photos and videos, all for free.

http://thehollytree.blogspot.com/2008/02/scam-alert-phony-israeli-owned.html



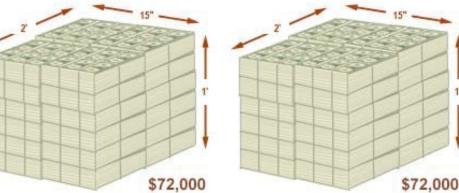
Google Earth Recon

Roofer Tom Berge used the aerial photographs of towns across the world to pinpoint museums, churches and schools across south London with lead roof tiles (darker colour).

Berge and his accomplices used ladders and abseiling ropes to strip the roofs and took the lead (\$164,980) in a stolen vehicle to be sold for scrap.

Sentenced to eight months in prison – suspended for two years – after confessing to over 30 offenses.





http://www.independent.co.uk/news/uk/crime/thief-googled-163100000-lead-roofs-1645734.html http://www.telegraph.co.uk/news/uknews/4995293/Google-Earth-used-by-thief-to-pinpoint-buildings valuable-lead-roofs.html



Returning other people's iPods

Nicholas Arthur Woodhams, 23 from Kalamazoo, Michigan set up shop online to repair iPods.



Abused Apple's Advance Replacement Program by guessing iPod serial numbers backed with Visa-branded gift cards (\$1 pre-auth).



Repeated the process 9,075 times, resold the "replacements" at heavily discounted prices (\$49), and denied any Apple credit charges.



Charged with trademark infringement, fraud, and money-laundering.



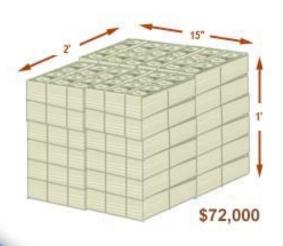


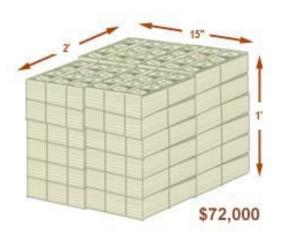
http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=9130136&intsrc=news_ts_head http://www.macworld.com/article/139522/23yearold_michigan_man_busted_for_ipod_fraud.html http://www.appleinsider.com/articles/08/06/26/apple_makes_example_of_ipod_repairman_in_lawsuit.html http://launderingmoney.blogspot.com/2009/03/money-laundering-charges-for-kalamazoo.html

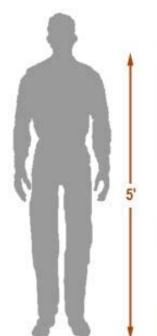
Scams that scale

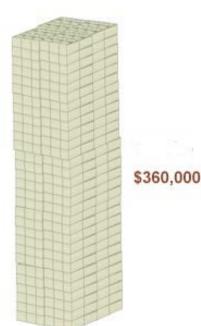
"Federal prosecutors have asked U.S. District Court Judge Robert Bell to let them seize real estate and personal property -- including a **2004 Audi** and a **2006 drag racer** -- as well as more than **\$571,000** in cash belonging to Woodhams, all alleged to be proceeds from his scam."











Jackpotting the iTunes Store

A group of U.K.-based DJs provided **19 songs**, to distributor Tunecore, who put them for sale on iTunes and Amazon.



Once online, the DJs opened accounts with **1,500 stolen** or cloned US and British credit cards to buy **\$825,000** worth of their albums **\$10** at a time over a couple month.



Apple and Amazon paid roughly \$300,000 in royalties, which boosted their chart rankings, resulting in even more sales and increased royalties for the DJs.



Apple received 'stop payment' orders from credit card companies, which led to the DJs' arrest on suspicion of conspiracy to commit fraud and money laundering.





http://www.metro.co.uk/news/article.html?DJs_arrested_in_ %A3200,000 iTunes scam&in article id=682928&in page id=34

Mythical Super Hacker

Anyone can do this stuff!

Skill does not affect return on investment.

Competitors got caught because they didn't try not to.

Will Hack for \$, £, ¥, €, R\$, Rs



Online Permit Management

In 2006, the Brazilian environment ministry did away with paper dockets and implemented an online program to issue permits documenting how much land a company could legally log and tracking the timber leaving the Amazon state of Para.



"We've pointed out before that this method of controlling the transport of timber was subject to fraud."

André Muggiati Campaigner Amazon office in Manaus Greenpeace International



Amazonian Rainforest Hack

Allegedly 107 logging companies hired hackers to compromise the system, falsifying online records to increase the timber transport allocations. Police arrested 30 ring leaders. 202 people are facing prosecution.

As a result, an estimated 1.7 million cubic meters of illegal timber have been smuggled out of the Amazon, enough to fill 780 Olympic-sized swimming pools.





http://www.greenpeace.org/international/news/hackers-help-destroy-the-amazo http://www.scientificamerican.com/blog/60-second-science/post.cfm?id=hackers-help-loggers-illegally-stri-2008-12-16



\$833,000,000

Same computer system is used in two other Brazilian states.

http://www.greenpeace.org/international/news/hackers-help-destroy-the-amazo http://www.scientificamerican.com/blog/60-second-science/post.cfm?id=hackers-help-loggers-illegally-stri-2008-12-16



Online Permit Managers



Hiring the Good Guys



KPMG audited 70 FAA Web applications and identified 763 high-risk vulnerabilities

"By exploiting these vulnerabilities, the public could gain unauthorized access to information stored on Web application computers. Further, through these vulnerabilities, internal FAA users (employees, contractors, industry partners, etc.) could gain unauthorized access to ATC systems because the Web applications often act as front-end interfaces (providing front-door access) to ATC systems."



http://news.cnet.com/8301-1009_3-10236028-83.html

http://www.darkreading.com/security/government/showArticle.jhtml

http://www.oig.dot.gov/StreamFile?file=/data/pdfdocs/ATC Web Report.pdf

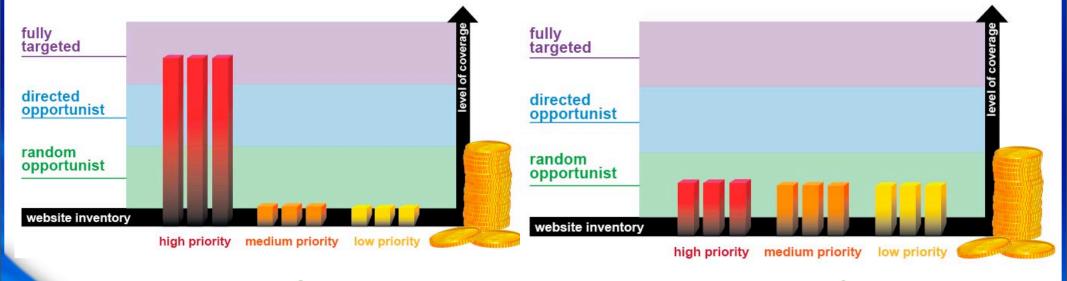


Security Religions

Measure Website Security, some say...

Focus on the most important assets, test comprehensively, and get to the rest later. Defend against the **Fully Targeted** (Super Hacker). While others...

Recommend a minimum baseline for all assets, then test more thoroughly when resources allow. Defend against the **Random Opportunists** (Bots and Worms).



Success requires **FLEXIBILITY** to perform both comprehensive and scaled out testing in accordance with the organizations tolerance for risk.

Attack Classification Misnomer

Dial is a measurement of target focus, NOT skill.

No shortage of weak websites.

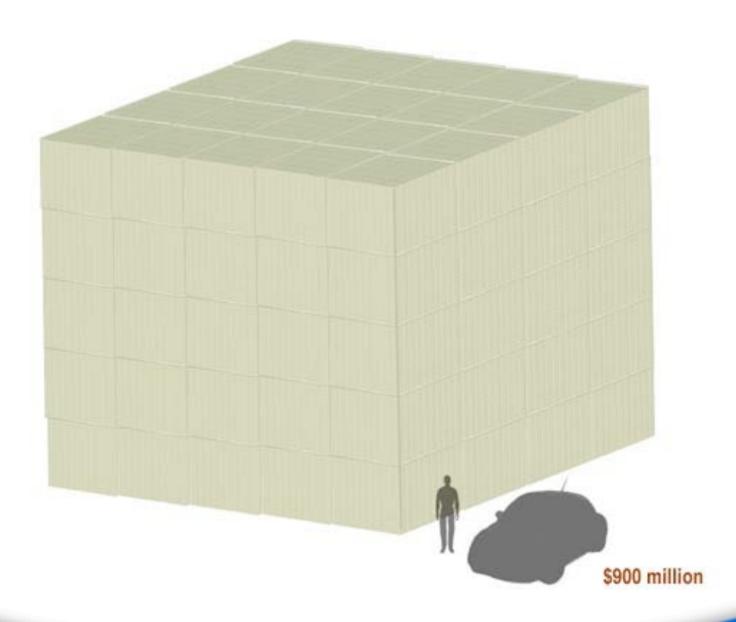
Forgetting to 'not get caught'?

Learning 'super hacker' skillz?

Plenty of money still to be made.



'Plan B' Problems





Questions?

Jeremiah Grossman

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Trey Ford

Blog: http://treyford.wordpress.com/

Twitter: http://twitter.com/treyford

trey.ford@whitehatsec.com

WhiteHat Security http://www.whitehatsec.com/





Link to slides also available

