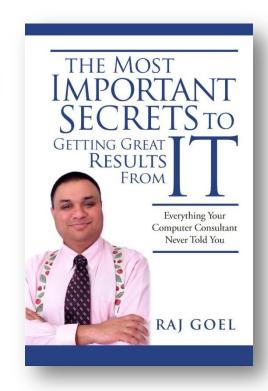


# Sustainable Defense: How to STOP Chasing Security and Win the battle

Raj Goel, CISSP

Chief Technology Officer
Brainlink International, Inc.

raj@brainlink.com / 917-685-7731





### **Agenda**

- Challenges
- Let's Do The Math
- Recommendations

#### brainlink

You run your business and leave the IT audits to us.

## Symantec – 2006 code theft, problems in 2012

Symantec has backtracked on its previous assurances about a recent source code theft, admitting its network was breached and code for a larger number of products than previously thought was swiped.

We believe that source code for the 2006-era versions of the following products was exposed: Norton Antivirus Corporate Edition; Norton Internet Security; Norton SystemWorks (Norton Utilities and Norton GoBack); and pcAnywhere.

Customers of Symantec's pcAnywhere product may face a slightly increased security risk as a result of this exposure if they do not follow general best practices.

A hacker calling himself "Yama Tough", acting as a spokesperson for the group, claims the source code had been pulled from insecure Indian government servers, implying that Symantec was required to supply their source code to Indian authorities.

Famed Apple hacker Charlie Miller quipped: "How could Symantec have gotten hacked? Don't they use AV?"

- http://www.channelregister.co.uk/2012/01/18/symantec\_leak\_latest/



Check Point slams security so complex you never get around to turning it on

John Vecchi, head of global product marketing at Check Point, and a former senior exec as McAfee and Symantec, described the data loss prevention (DLP) market as the "most disappointing" segment of the security market and not just because it has failed to achieve widespread adoption.

"DLP has been on the market for years but very few firms have deployed and utilised the technology," Vecchi said.

"Some of these technologies are sophisticated and impressive but it can take 12 months to discover and a further 12 months to classify data. That leaves you with an implementation time of 24 months so that many firms who have bought the technology have not turned it on," Vecchi said.

- http://www.theregister.co.uk/2011/05/04/check\_point\_data\_loss\_prevention/



### **Vendors Exaggerate...**

"Dropbox employees aren't able to access user files".

BoingBoing.net, "Dropbox's new security policy implies that they lied about privacy from the start"

http://boingboing.net/2011/04/25/dropbox-cto-on-their.html

- "DROPBOX: We'll turn your files over to the government if they ask us to"
- **Business Insider**, http://www.businessinsider.com/dropbox-updates-security-terms-of-service-to-say-it-can-decrpyt-files-if-the-government-asks-it-to-2011-4



#### brainlink

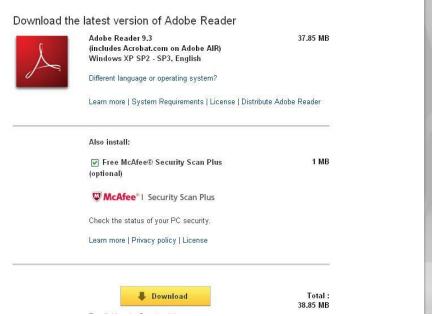
You run your business and leave the IT audits to us.



http://www.theregister.co.uk/2011/05/08/file\_hosting\_sites\_under\_attack/



#### **Adobe Flash Player**



#### Adobe Flash is the root of Browser Insecurity

"Chrome or IE8 on Windows 7 with no Flash installed. There probably isn't enough difference between the browsers to get worked up about. The main thing is not to install Flash!"

http://gizmodo.com/5483024/security-expert-flash-is-the-root-of-browser-insecurity-oh-and-ie8-isnt-so-bad



## Dell ships infected server motherboards

July 2010 – Dell blames "human error" for shipping thousands of infected Server motherboards – Poweredge 310, 410, 510, T410.

http://www.theregister.co.uk/2010/07/23/dell\_malware\_update/



## April 2008 – HP ships infected keys to Enterprise Customers using Proliant servers.

http://www.engadget.com/2008/04/07/hp-sends-server-customers-virus-infected-usb-keys/



## Walmart, Amazon, etc used as infection vectors

Jan 2009 – Hundreds of thousands (millions?) of picture frames sold by Walmart, SamsClub, Amazon ship from the factory with embedded malware.

**NOTE: Picture frame sales** 

2007 - 5 million

2008 - 7.4 million

2009 - 9.8 million

http://articles.sfgate.com/2009-01-02/business/17196259\_1\_frames-digital-photo-wal/



### Mercedes Benz updates car software remotely

This new system upgrades on the fly, he said, the first such in-car application to do so. "It's seamless to the customer," Link said. "I have a friend who was excited about his system upgrade, which required him to plug in his stick and leave his car running for 45 minutes. Who wants to do that? In a process called 'reflashing,' the Mercedes system can turn on the car operating system (CU), download the new application, then cut itself off. It doesn't require you to do anything at all."

The implications of this go far beyond transparent upgrade of your streaming music system. Consider that the average car has 70 to 100 electronic control units (ECUs) and even econoboxes have lines of code in the tens of millions — the Mercedes S-Class has more than 20 million. According to Link, software-related recalls are a big problem for carmakers, costing \$75 to \$95 per car. Not only is it expensive, but it's a hassle for drivers—nobody likes bringing their car to the shop.

- http://www.txchnologist.com/2012/new-york-auto-show-upgrading-auto-software-in-a-flash



#### **Anti-Virus Scareware**



Which one is from a real company? Which one is fake?



### IBM bans Dropbox, Siri, iCloud

**IBM has banned employees from using Dropbox and Apple's iCloud** at work as it claws back permission to use third-party cloud services. The rethink has also resulted in a edict against the iPhone 4S's Siri voice recognition technology at Big Blue.

Jeanette Horan, IBM's chief information officer, told MIT's Technology Review that the restrictions had been applied following a review of IBM's Bring Your Own Device BYOD Policy, introduced in 2010. IBM still supplies BlackBerrys to about 40,000 of its 400,000 employees, but a further 80,000 others now access its intranet using rival smartphones and tablets, including kit they purchased themselves. The [BYOD - ed.] initiative has not yielded anticipated cost reductions even though it has created various security headaches.

An internal survey of **IBM workers discovered they were "blissfully unaware" about the security risks from popular apps**, according to Horan. **In some cases, staff forwarded internal corporate emails to webmail inboxes**, potentially pushing sensitive information beyond Big Blue's security perimeter.

- http://www.theregister.co.uk/2012/05/25/ibm\_bans\_dropbox\_siri/



You run your business and leave the IT audits to us.

## Feds, please return my personal files stored on Megaupload



#Megaupload was closed by the FBI... was I the only one who had it for work files? Just get me my files back!!!



#FBI #Megaupload I wanna my personal and legally files back!



#SOPA has claimed #megaupload...I had files up there...gone forever...and they were personal recordings! No copyright infringement!

Do the feds realize that nundreds of thousands, perhaps millions of people used the site to share research data, work documents, personal video collections and much more?

What will happen to these personal non-infringing files?

People are outraged on Twitter and are demanding access to their files immediately.

https://torrentfreak.com/feds-please-return-my-personal-files-megaupload-120120/



## FBI shuts down Megaupload, Cogent stock dives 23%

Shares of Cogent Communications Group Inc slumped 23 percent after the U.S. government shut down one of its customers and the Federal Bureau of Investigation (FBI) searched its offices.

- http://www.reuters.com/article/2012/01/20/us-cogent-shares-idUSTRE80J1ET20120120



You run your business and leave the IT audits to us.

## GMAIL does NOT meet FBI's security requirements – LA County police cannot use GMAIL

The Los Angeles City Council voted unanimously on Dec. 14 to cancel a move that would have put the Los Angeles Police Department (LAPD) and other criminal justice personnel on Google's cloud-based email system.

While the city's other employees will stay on Google's Gmail, city officials believe that the security requirements needed by law enforcement were not met by Google's cloud technology. The city's \$7.2 million contract with systems integrator CSC — signed in 2009 to move all 30,000 city employee email accounts from Novell GroupWise to Gmail — will be modified so that the LAPD and others that need heightened security will remain on in-house email.

According to the <u>Los Angeles Times</u>, Google will pay \$350,000 per year for those employees to use the Novell system.

- http://www.govtech.com/policy-management/Los-Angeles-Axes-Plans-to-Add-Police-Email-to-Google-Cloud.html



### **Recommended Reading**

Hackers transfer \$ 378,000 from Poughkeepsie to Ukraine http://www.finextra.com/News/fullstory.aspx?newsitemid=21055

ATM hackers steal \$ 9 Million in 1 day http://www.wired.com/threatlevel/2009/02/atm/

Banking Trojan steals \$ 438,000 http://news.cnet.com/8301-27080\_3-10363836-245.html

Bank Of America vs. Lopez http://www.americanbanker.com/usb\_issues/115\_4/-246231-1.html

Latanya Sweeney – What information is "Personally Identifiable" http://www.eff.org/deeplinks/2009/09/what-information-personally-identifiable

#### "Trends in Financial Crimes"

http://www.rajgoel.com/infosecurity-issue-7-%e2%80%93-trends-in-financial-crimes-2



### Recommended Reading

#### Googling your privacy away

http://www.rajgoel.com/infosecurity-issue-6-%e2%80%94-data-leak-googling-away-your-security-and-privacy

http://www.rajgoel.com/category/articles

#### Warshak vs USA

http://www.eff.org/cases/warshak-v-usa

#### **Snakeoil Security**

http://threatpost.com/en\_us/blogs/effect-snake-oil-security-090710



## ChronoPay – Russian Government + Criminals

"If your Windows PC has been hijacked by fake anti-virus software or "scareware" anytime in the past few years, chances are good that the attack was made possible by ChronoPay, Russia's largest processor of online payments.

ChronoPay employees created two companies in Cyprus that would later be used in processing rogue anti-virus payments: Yioliant Holdings; and the strangely named Flytech Classic Distribution Ltd. ChronoPay emails show that employees also paid for domains software-retail.com and creativity-soft.com, rogue anti-virus peddling domains that were registered in the names and addresses of Yioliant Holdings and Flytech, respectively. Finally, emails also show that ChronoPay paid for the virtual hosting and telephone support for these operations."

- http://krebsonsecurity.com/tag/chronopay/
  - http://krebsonsecurity.com/wp-content/uploads/2011/03/csoft.txt



## Spyware – Israel's TrojanGate

- "Executives of top telecom firms accused of spying on each other. A jealous exhusband suspected of monitoring his former in-laws. Private investigators implicated in computer-hacking-for-hire; one now involved in a possible attempted suicide. So much bad publicity, government officials worry it might impact the entire nation's economy.
- Published reports indicate mountains of documents have been stolen from dozens of top Israeli firms. <u>Some 100 servers loaded with stolen data have been</u> <u>seized.</u>"
- MSNBC, June 9, 2005 http://www.msnbc.msn.com/id/8145520/



Spyware – Japan's Winny P2P

- "in particular, a military agency was forced to admit that classified information from the Maritime Self Defence Force was uploaded by a computer with winny software installed on it.
- Following this, ANA (All Nippon Airlines) were also the victims of an embarrassing data leak, with passwords for security-access areas in 29 airports across Japan being leaked over the program. This follows a similar incident from JAL Airlines on 17th December 2005, after a virus originating from Winny affected the computer of a co-pilot.
- Arguably the biggest winny-related leak however, is that of the Okayama Prefectural Police Force, whose computer leaked data on around 1,500 investigations. This information included sensitive data; such as the names of sex crime victims, and is the largest amount of information held by Japanese police to have ever leaked online."
- WikiPedia <a href="http://en.wikipedia.org/wiki/Winny">http://en.wikipedia.org/wiki/Winny</a>



## German Government distributes Trojan

- Five German states have admitted using a controversial backdoor Trojan to spy on criminal suspects.
- Samples of the so-called R2D2 (AKA "0zapftis") Trojan came into the possession of the Chaos Computer Club (CCC), which published an analysis of the code last weekend.
- German federal law allows the use of malware to eavesdrop on Skype conversations. But the CCC analysis suggests that the specific Trojan it wrote about is capable of a far wider range of functions than this – including establishing a backdoor on compromised machines and keystroke logging.

http://www.theregister.co.uk/2011/10/12/bundestrojaner/

#### brainlink

You run your business and leave the IT audits to us.

## LinkedIn / Yahoo / eHarmony breaches

## 6.46 million LinkedIn passwords leaked online

Summary: More than 6.4 million hack. Though some login details of



A user on a Russian forum has cli from LinkedIn.

It looks as though some of the w cracked already. Other users hav seek help in cracking the encrypt

## Yahoo fixes flaw behind 450,000 account hack

**Summary:** Yahoo today announced it has fixed the security vulnerability responsible for 450,000 of its accounts being compromised. The company says it is still in the process of notifying affected users.



By Emil Protalinski for Zero Day | July 13, 2012 -- 18:39 GMT (11:39 PDT)

Follow @emilprotalinski

Earlier this week, the hacker group D33ds Company claimed responsibility for attacking a Yahoo service and exposing 450,000 plain text login credentials. Yahoo then confirmed that the accounts were compromised, though it emphasized less than 5 percent of the credentials were valid. Yahoo today closed the saga by fixing the flaw in question.





#### brainlink

You run your business and leave the IT audits to us.

## Microsoft used LinkedIn & Yahoo passwords to test their database

### One in five hacked logins match Microsoft Accounts

**Summary:** About 20 percent of compromised credentials, exposed via hacks on other service providers, match Microsoft Account logins due to password reuse



By Tom Espiner | July 16, 2012 -- 16:33 GMT (09:33 PDT)

Follow @tomespiner

Around 20 percent of the logins found on lists of compromised credentials match those of Microsoft Accounts due to consumers using the same login details across more than one service, the company has said.

The lists are circulated by organisations and hackers in the wake of attacks on third-party service providers.

People re-use passwords and login details across services from different providers, Microsoft Account group manager Eric Doerr noted in a blog post on Sunday. That reuse means that if one set of logins is compromised, other accounts are at risk.

"These attacks shine a spotlight on the core issue — people reuse passwords between different websites," said Doer, speaking after the Yahoo breach last week that exposed 400,000 user details. "On average, we see successful password matches of around 20 percent of matching usernames."



### Let's do the math



**Lose Data, Lose Customers** The Ponemon Institute surveyed 14 different companies. The average data loss was 100,000 records. The most costly aspect by far was the loss of existing customers. Here is the breakdown:

DIRECT COSTS	INDIRECT COSTS	LOST CUSTOMER COSTS	TOTAL COSTS			
Detection & Escalation  DIRECT COSTS   INDIRECT COSTS   LOST CUSTOMER COSTS   TOTAL COSTS						
\$19,000	\$488,000	N/A	\$507,000			
463,000	51,000	N/A	514,000			
Notification						
547,000	193,000	N/A	740,000			
5,000	N/A	N/A	5,000			
913,000	105,000	N/A	1,018,000			
48,000	N/A	N/A	48,000			
3,000	N/A	N/A	3,000			
Ex-Post Response						
4,000	3,000	N/A	7,000			
1,000	1,000	N/A	2,000			
287,000	479,000	N/A	766,000			
27,000	N/A	N/A	27,000			
289,000	14,000	N/A	303,000			
1,288,000	N/A	N/A	1,288,000			
810,000	N/A	N/A	810,000			
286,000	13,000	N/A	299,000			
Lost Business						
N/A	N/A	6,728,000	6,728,000			
N/A	N/A	730,000	730,000			
\$4,990,000	\$1,347,000	\$7,458,000	\$13,795,000			
\$50	\$14	\$75	\$138 SOURCE: PGP CO			
	\$19,000 463,000 547,000 5,000 913,000 48,000 3,000 4,000 1,000 287,000 27,000 289,000 1,288,000 810,000 286,000 N/A N/A	\$19,000 \$488,000 463,000 \$1,000  547,000 193,000 5,000 N/A 913,000 105,000 48,000 N/A 3,000 N/A  4,000 3,000 1,000 1,000 287,000 479,000 27,000 N/A 289,000 14,000 1,288,000 N/A 810,000 N/A 810,000 N/A \$4,000 N/A \$4,000 N/A \$4,000 N/A \$1,000 N/A	\$19,000 \$488,000 N/A 463,000 \$1,000 N/A  547,000 193,000 N/A 5,000 N/A N/A 913,000 105,000 N/A 48,000 N/A N/A 3,000 N/A N/A  4,000 3,000 N/A 1,000 1,000 N/A 287,000 479,000 N/A 287,000 N/A N/A 289,000 14,000 N/A 1,288,000 N/A N/A 810,000 N/A N/A N/A			

The Cost of Carelessness 12/5/2005 - http://www.cioinsight.com/article2/0,1540,1906158,00.asp



#### The Cost of Breaches 2005-2010

Year	<b>Direct Cost</b>	<b>Indirect Cost</b>	<b>Lost Customer Cost</b>	<b>Total Costs</b>
2005	50	14	74	138
2006	50	14	118	182
2007	50	14	133	197
2008	50	14	138	202
2009	50	14	140	204
2010	50	14	150	214

#### Other findings:

Not 1<sup>st</sup> time for majority of companies – 84% repeat offenders

1<sup>st</sup> timers cost: \$ 243/record, Experienced Victims: \$ 192/record

Churn Rates: Average 3.6% / Healthcare 6.5% / Financial Services 5.5%

Healthcare cost: \$ 282/record / Retail: \$ 131/record

88% breaches due to insider negligence, 44% due to external parties

Source: <a href="http://www.networkworld.com/news/2009/020209-data-breach.html">http://www.symantec.com/about/news/release/article.jsp?prid=20110308\_01</a>



### **Recommended Solutions**

#### brainlink

You run your business and leave the IT audits to us.

## NYTimes – Leave your laptop, cell at home when travelling abroad

When Kenneth G. Lieberthal, a China expert at the Brookings Institution, travels to that country, he follows a routine that seems straight from a spy film. He leaves his cellphone and laptop at home and instead brings "loaner" devices, which he erases before he leaves the United States and wipes clean the minute he returns. In China, he disables Bluetooth and Wi-Fi, never lets his phone out of his sight and, in meetings, not only turns off his phone but also removes the battery, for fear his microphone could be turned on remotely. He connects to the Internet only through an encrypted, password-protected channel, and copies and pastes his password from a USB thumb drive. He never types in a password directly, because, he said, "the Chinese are very good at installing key-logging software on your laptop.

- http://www.nytimes.com/2012/02/11/technology/electronic-security-a-worry-in-an-age-of-digital-espionage.html?pagewanted=all



#### brainlink

You run your business and leave the IT audits to us.

### Implement the SANS Top 20

- 1: Inventory of Authorized and Unauthorized Devices
- 2: Inventory of Authorized and Unauthorized Software
- > 3: Secure Configurations for Hardware and Software on Laptops, Workstations, and Servers
- 4: Continuous Vulnerability Assessment and Remediation
- 5: Malware Defenses
- 6: Application Software Security
- 7: Wireless Device Control
- 8: Data Recovery Capability
- 9: Security Skills Assessment and Appropriate Training to Fill Gaps
- 10: Secure Configurations for Network Devices such as Firewalls, Routers, and Switches
- 11: Limitation and Control of Network Ports, Protocols, and Services
- 12: Controlled Use of Administrative Privileges
- 13: Boundary Defense
- 14: Maintenance, Monitoring, and Analysis of Security Audit Logs
- 15: Controlled Access Based on the Need to Know
- 16: Account Monitoring and Control
- 17: Data Loss Prevention
- 18: Incident Response Capability
- 19: Secure Network Engineering
- 20: Penetration Tests and Red Team Exercises

http://www.sans.org/critical-security-controls/



## Implement the AusCERT Top 4

The top four mitigations are:

- patching third party applications;
- patching operating systems;
- minimising administrative privileges;
- application whitelisting.

http://www.dsd.gov.au/infosec/top-mitigations/top35mitigationstrategies-list.htm

http://www.dsd.gov.au/publications/Top\_35\_Mitigations.pdf



## Does this stuff actually work?



#### **Anesthesiologists reduce malpractice premiums 37%**

"Anesthesiologists pay less for malpractice insurance today, in constant dollars, than they did 20 years ago.

That's mainly because some anesthesiologists chose a path many doctors in other specialties did not. Rather than pushing for laws that would protect them against patient lawsuits, these anesthesiologists focused on improving patient safety.

Their theory: Less harm to patients would mean fewer lawsuits. "

- Deaths dropped from 1 / 5,000 to 1 / 200,000 300,000
- Malpractice claims dropped 46% (from \$ 332,280 in 1970 to \$ 179,010 in 1990's!

Premiums dropped 37% from \$ 36,620 to \$ 20,572.

- http://online.wsj.com/article/0,,SB111931728319164845,00.html?mod=home%5Fpage%5Fone%5Fus



## Air Force demanded, and purchased, SECURE Desktops

**2006** – After years of attacks, and dealing with a hodge-podge of desktop and server configurations, The US Air Force develops the **Secure Desktop Configuration** standard. All vendors are required to sell computers to the USAF (and later DOD, other government agencies) with standardized, locked down configurations of:

- Windows
- MS Office
- Adobe Reader
- Norton AV
- •Etc

US Dept Of Energy requires Oracle to deliver it's databases in a secure configuration developed by the **Center for Internet Security (www.cisecurity.org)** 



## Summary

- Laws aren't static.
- Court cases determine how laws are implemented.
- Revisions to the laws and newer laws expand the compliance landscape.
- FTC and Attorney Generals are expanding the compliance landscape.
- Encrypt, encrypt, encrypt
- Plan to HAVE a breach; and train your staff for it.



### **Next Steps**

If you have any questions about this presentation, or any other topic, feel free to contact me.

Professionally, I'm available to speak at Bar Associations (CLE), CPA Societies (CPE), and Conferences.

If you'd like to educate the kids, interns & college students in your life about the dangers of social media, share this video with them:

http://www.brainlink.com/free-stuff/webinars/what-to-teach-your-kids-employees-and-interns-about-social-media/



#### **Self-Promo**

#### Across the USA, I personally provide

- COMMON SENSE BASED IT Security and Privacy Breach law compliance audits (HIPAA/HITECH, PCI-DSS, REDFLAG)
- Information Security Audits
- IT Consulting for Healthcare

If you like what you're hearing, hire me!

www.RajGoel.com



#### **Contact Information**

#### Raj Goel, CISSP

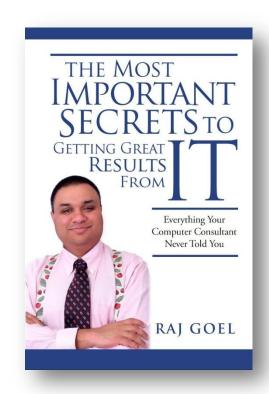
Chief Technology Officer
Brainlink International, Inc.

C: 917-685-7731

raj@brainlink.com

www.RajGoel.com

www.linkedin.com/in/rajgoel



Author of "The Most Important Secrets To Getting Great Results From IT" http://www.amazon.com/gp/product/0984424814