



Author, Speaker and TV Guru  
Raj Goel, CISSP  
Presents:

# Construction Industry Technology Briefing

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# Raj Goel, CISSP

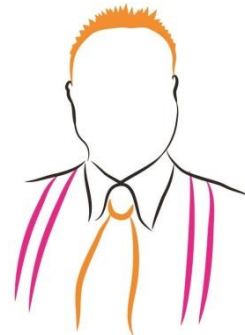
Raj Goel, CISSP, is an Oracle and Solaris expert and he has over 25 years of experience in software development, systems, networks, communications and security for the financial, banking, insurance, health care and pharmaceutical industries.

Raj is a regular speaker on HIPAA/HITECH, PCI-DSS Credit Card Security, Disaster Recovery, Information Security and other technology and business issues, addressing diverse audiences including technologists, policy-makers, front-line workers and corporate executives.

A internationally known expert, Raj has appeared in over 30 magazine and newspaper articles worldwide, including *Information Security Magazine*, *PenTest*, *CSOOnline*, *Entrepreneur Magazine*, *Business2.0* and *InformationWeek*, and on television including *CNNfn*, *Geraldo At Large*, *PBS* and *WPIX11*.

Raj has presented at:

- **ISC<sup>2</sup>** conferences
- **ASIS International** conferences
- **BrightTalk** conferences
- Medical Conferences
- Legal Conferences
- **GBATA 2012 & 2013** (keynote speaker)
- **The Hague, Netherlands NCSC.NL 2013** (plenary)
- **GBATA 2013 Helsinki** – Keynote
- **ICT Curacao** – Keynote
- **Datto Partners Conference** - Keynote



# Media Appearances



The New York Times

Entrepreneur

(ISC)<sup>2</sup>

SECURITY TRANSCENDS TECHNOLOGY™

BrightTALK™

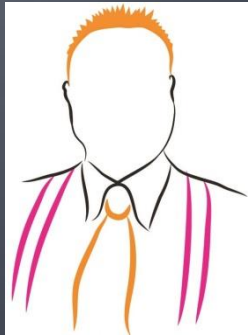


PenTest magazine



NEW YORK COUNTY  
NYCLA  
LAWYERS' ASSOCIATION

# Why BRAINLINK?

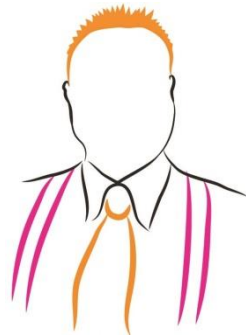


# HE AND HIS GUYS ARE VERY SHARP...



They have a holistic picture of what we're trying to achieve and Raj has a very good perception of what the businesses need. His advice has always been really practical and easy to implement. He's managed to get it done when he says he's going to do it. I've been really pleased with their work. **Our business was wiped out by a viral invasion prior to hiring Brainlink. They put us back in the business, got all the glitches out, got rid of the viruses, cleaned out all the computers, and saved us in a very big way from failure. It was really an impressive performance.**

**Mark Ellis, Partner  
Cornerstone Architects**

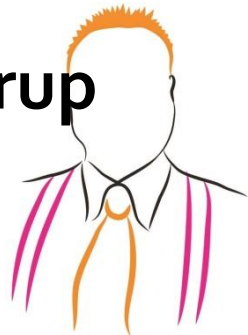


# THE BEST THING WE EVER DID WAS HIRE BRAINLINK...



There is no one else that I could or would trust with my technology needs. From my hosting and email to the upkeep of my network and the data that runs my company, Brainlink and Raj have always been there for me. Knowing that they are taking care of my information structure means I don't have to worry

**Kelly Fox, 5<sup>th</sup> Generation owner  
H Fox & Co. – Makers of Fox's U-Bet Syrup**

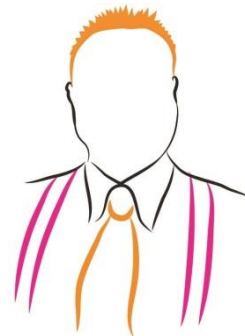


# BRAINLINK'S STAFF IS VERY RESPONSIVE AND PROFESSIONAL...



What I like best about Brainlink is that their ticketing system tracks issues and gives us the ability to spot trends or issues before they become major problems

**Chris Gallin, Partner**  
**4<sup>th</sup> Generation Owner**  
**John Gallin & Son**



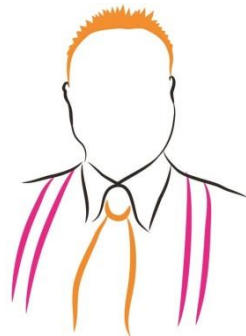


# THE PROACTIVE PLANNING MAKES MY LIFE A LOT EASIER...



I love the prompt response and the ticketing system. **Instead of wasting 10 phone calls calling our old vendor, now I get complete visibility in my email!** Having our internal IT staff plug into your ticketing system and follow that process has increased our productivity. I have fewer people in the field that are down or ignored. My staff gets back to work faster. The project plans, proactive budgets and forecasts make my life easier. **What sets Brainlink apart is that you guys are doing exactly what you said you were going to do.**

**Dan Williams, CFO**  
**E W Howell**  
**Industry: Construction**

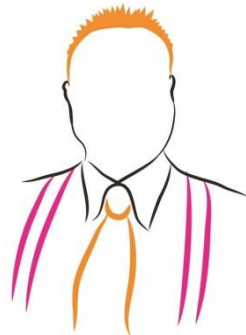




# How much is 3.6% of your revenue?

**Companies experience an average of 501 hours of network downtime every year, and the overall downtime costs an average of 3.6% of annual revenue.**

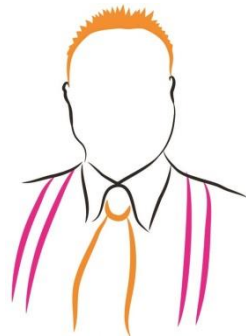
(Source: The Costs of Enterprise Downtime, Infonetics Research)



# Are You Part Of The 93%? Or 7%?

**93% of companies that lost their data center for 10 days or more due to a disaster filed for bankruptcy within one year of the disaster, and 50% filed for bankruptcy immediately.**

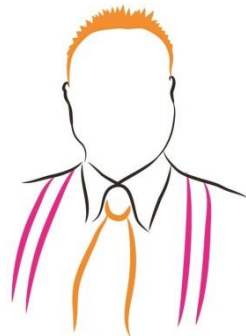
(Source: National Archives & Records Administration in Washington)



# 1 in 5. Care to place a bet?

**20% of small to medium businesses will suffer a major disaster causing loss of critical data every 5 years.**

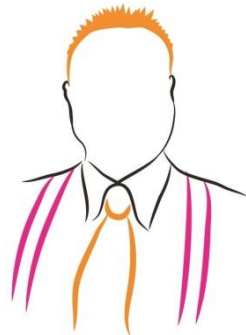
(Source: Richmond House Group)



## Target. Neiman Marcus. You?

**This year, 40% of businesses that manage their own network and use the Internet for more than e-mail will have their network accessed by a hacker, and more than 50% won't even know they were attacked.**

(Source: Gartner Group)

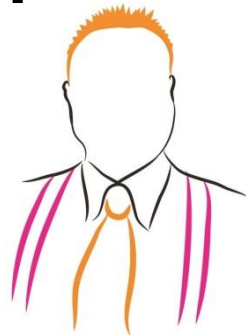


# What's Your Value Per Hour?

Of those companies participating in the Contingency Planning & Management Cost of Downtime Survey:

- **46%** said each hour of downtime would cost their companies **up to \$50,000,**
- **28%** : between **\$51,000 and \$250,000,**
- **18%** : between **\$251,000 and \$1 million**
- **8%** : **more than \$1 million per hour.**

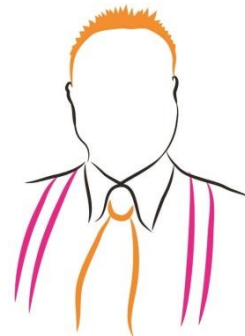
(Source: Cost of Downtime Survey Results)



# Got A Plan?

- 56% of enterprises in North America don't have a formal and comprehensive disaster recovery policy.
- 87% of businesses indicated that failure to recover data would be damaging to the business
- 23% said it would be "disastrous."

(Source: Cost of Downtime Survey Results, 2011)



# Murphy Does...

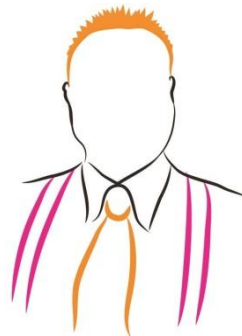


© Bob Gorrell, [www.GorrellArt.com](http://www.GorrellArt.com)

...and he executes better than you.

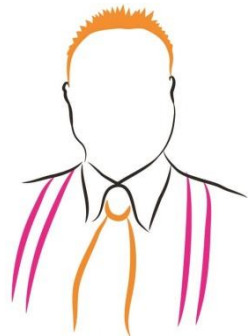
In the last 15 years, New York City has experienced:

- Multi-state power blackouts
- 9/11 World Trade Center Collapse
- Con-Ed steam pipe explosions
- Tornadoes & Cyclones
- Earthquakes
- Sandy
- Snowmagedon

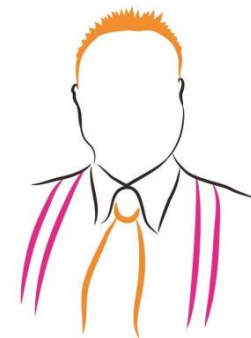
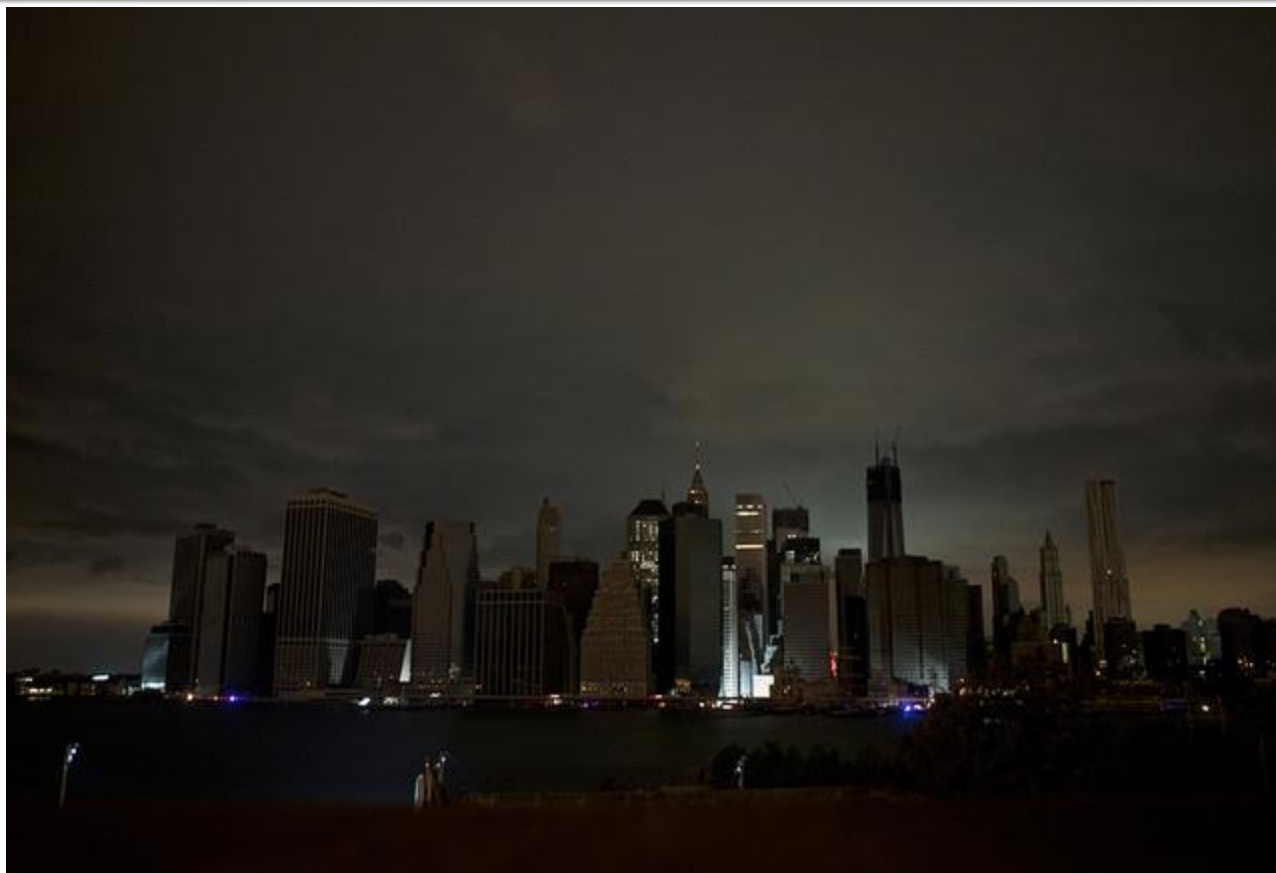




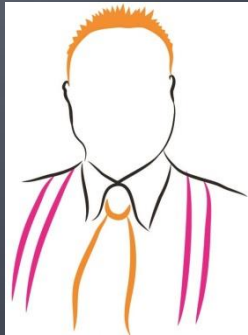
# NYC On A Normal Night



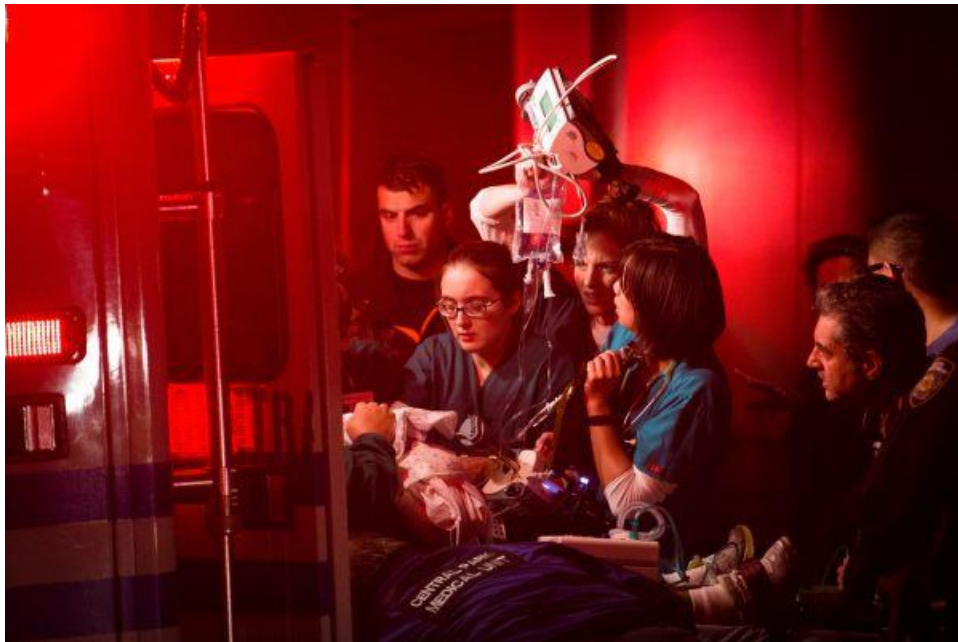
# NYC - Sandy



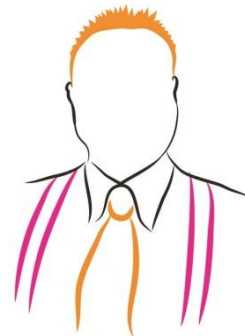
# What Can You Learn From Sandy?



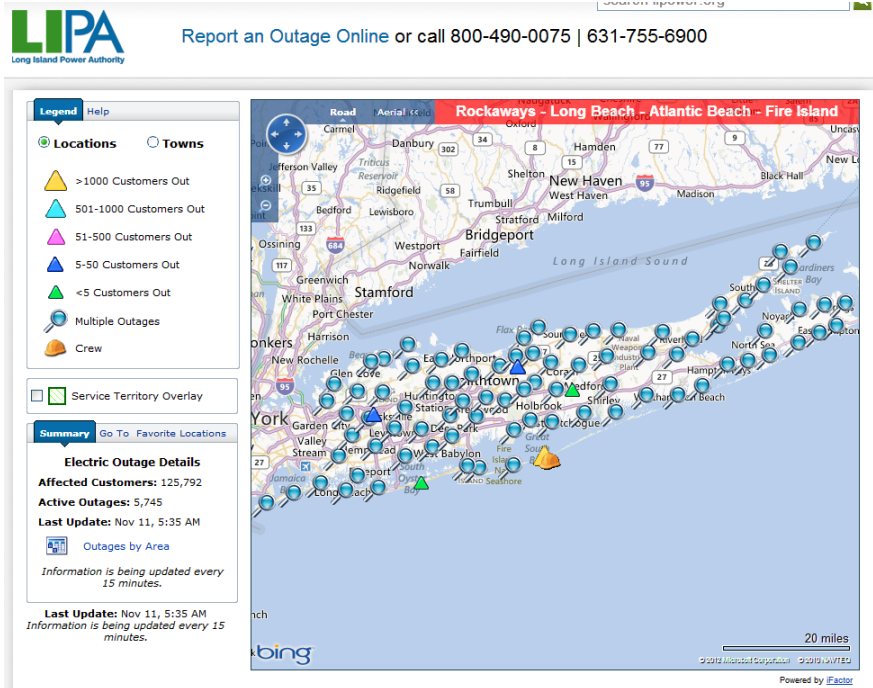
# 1) In a flood zone, don't put transformers or generators in the basement



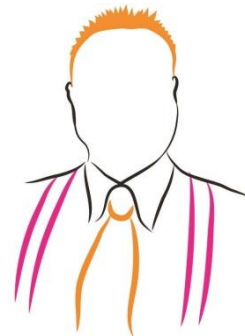
- If you live in a flood zone, putting transformers or generators in the basement isn't the smartest idea.
- Nurses and staff saved countless lives by carrying patients out of the hospital manually. NYU's BCP & DR plan was inadequate.



## 2) Utility outage maps are crucial



- Just like pizza, even bad ones are better than nothing.
- Even after LIPA & ConEd stopped updating their maps, knowing which areas were out, and which ones were functional allowed us to deal with employees better.



### 3) Redundant generators are awesome



...as long as you have redundant fuel as well.

- Peer 1's data center had generators on 2<sup>nd</sup> floor.
- Peer 1 had their own generator on 17<sup>th</sup> floor as backup.
- Basement flooded – building generators offline. Peer1 kept running...until diesel almost ran out.

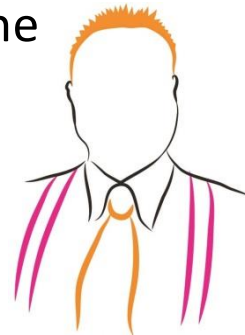




## 4) Cash is King

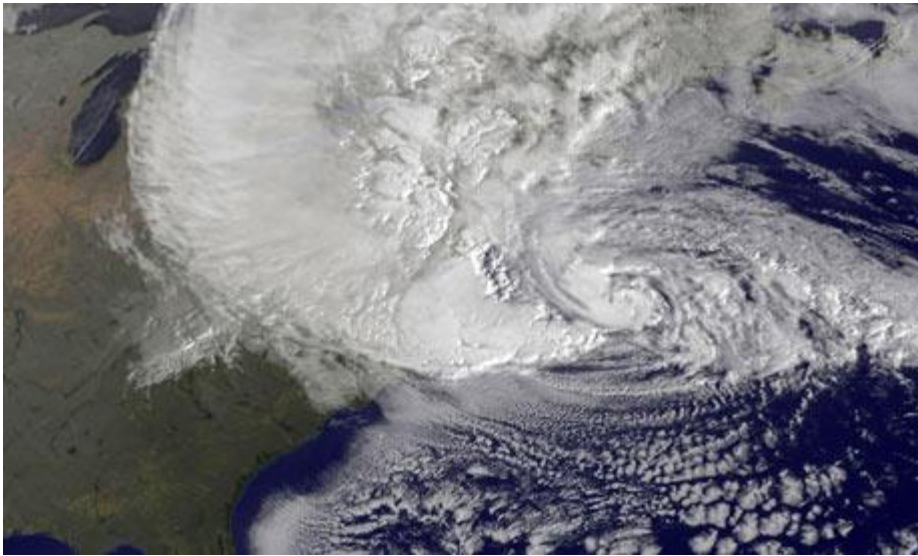


- Normal Hertz rate: \$300/wk
- Sandy rates: \$2000/wk
- Normal hotel rate: \$300/night
- Sandy rates: \$800/night
- Helicopter hired by photographer Iwan Baan required cash up front to charter the chopper.
- We had spare servers, drives, switches & firewalls set aside for clients BEFORE the storm.
  - Do you?





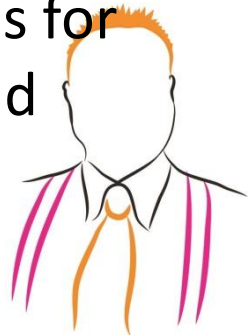
## 5) Geographical redundancy matters



- A large, multinational firm with thousands of employees globally hosted their exchange servers from NYC HQ. NYC lost power for a week.

- No one had emails...globally.

(CIO/COO had rejected previous recommendations for redundant data centers and offsite backups).



## 6) Leadership matters

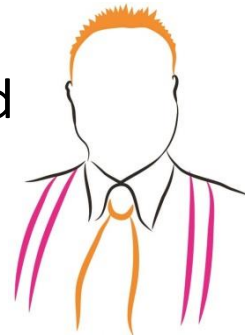


1) Shutting down the traffic tunnels and subway lines was the best decision NYC's government made.

2) Keeping cars and unnecessary vehicles off the street was a smart decision. This also made subsequent recovery faster.

3) Chris Christie calling mayors stupid for not evacuating when ordered to – SMART!

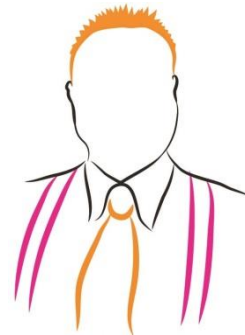
Saved thousands of lives and billions in losses.



# 7) People are your BEST assets



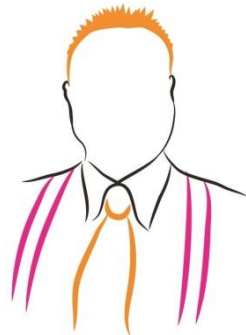
- Are your employee contact lists up to date?
- Do you have out-of-state next-of-kin info?
- Cellphones? IM/Skype IDs? Home phones? Spouse & children names, ages, contact info?
- Prescription & OTC medications on hand?



# How we dealt with Sandy

## Before the storm

1. We tested all client backups in the DR center
2. Ensured we have contact info for clients, client staff, family members
3. We published the DISASTER PREPAREDNESS TIPS page
  - <http://www.brainlink.com/2012/10/tropical-storm-sandy-disaster-preparedness-tips/>



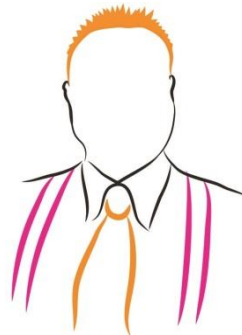
# How we dealt with Sandy

## During the storm

1. I published a daily blog updating clients (and others) with resources for recovery.

- <http://www.brainlink.com/2012/10/sandy-recovery-resources/>
- Free or low-cost office space, places to sleep or get hot food, hot showers, etc.

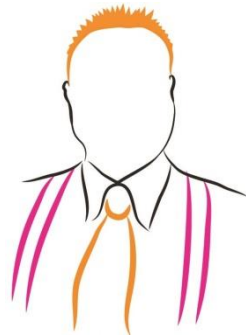
2. Called, texted, skype'd clients, employees, family members for 48 hours.



# How we dealt with Sandy

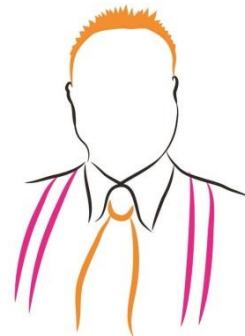
## After the storm

1. We visited every client
2. Replaced many UPSes and power strips
3. Reviewed DR & BCP Plans
4. Clients purchased redundant / backup circuits for single-homed clients
5. More clients adopted virtualization



# Most Common Challenges

- Inadequate Backups
- No Disaster Recovery Plans
- Viruses running wild
- Insufficient Supervision Of Job Sites
- Inadequate Handling Of Job Site Photos
- Insufficient Staff Supervision
- Outdated Technology
- Outdated Training
- Overwhelmed Employees
- Undocumented IT Practices



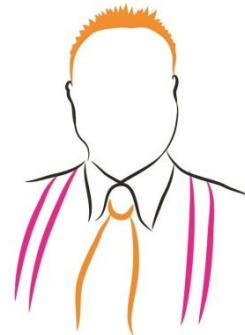


# Are You Prepared?

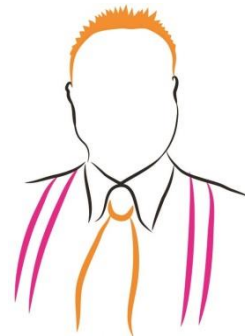


**Windows Server 2003  
expires April 2015**

- Exchange
- Timberline
- File & Print
- Backups



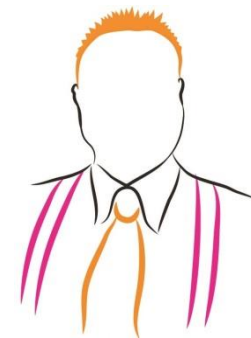
# Your Biggest Asset and your Biggest Liability



# Employees cause 87% of breaches

Trace Type	Data
File	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-adesk2012x64.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-a2012-64bits.rar xf-adesk2012x64.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-a2012-32bits.rar xf-adesk2012x32.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\AUTODESK.REVIT.ARCHITECTURE.V2012-ISO\rac2012\rac2012...
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\AUTODESK.REVIT.ARCHITECTURE.V2012-ISO\rac2012\rac2012...

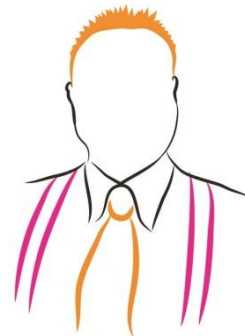
- Young employee downloaded pirated software.
- Banking trojans come along for the ride



# Watering hole attacks

3/15/2013	Deep Scan	Quarantined	[REDACTED]	192.168.1.200	Remote Agents	[REDACTED]
Trace Type		Data				
File	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\Downloads\Metal Roof Rail Bracket Install Manual pdf(1).exe					
File	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\Downloads\Metal Roof Rail Bracket Install Manual pdf.exe					
2/14/2013	Deep Scan	Quarantined	COR-AD2	192.168.1.200	Remote Agents	CORNERSTONE
Trace Type		Data				
File	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\Downloads\FastDownload.exe					

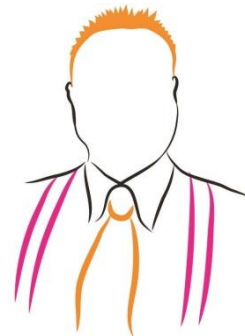
- Criminals infected a major supplier site
- PDFs were infected
- Nasty rootkit hidden in the files



# Playoffs or Projects?

Top Web Users		
User	Hits	Bytes
N/A	39669	771.16 MB
[REDACTED]	22513	6.04 GB
media.newyork.cbslocal.com		3.71 GB
cbsnewwork.files.wordpress.com		8.68 MB

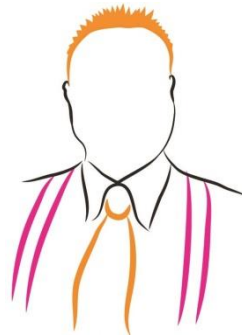
- During playoffs, a single employee consumed as much internet as everyone else combined.
- He spent the whole day watching baseball at work
- Next day, this report was in front of his manager.



# Increasing Productivity

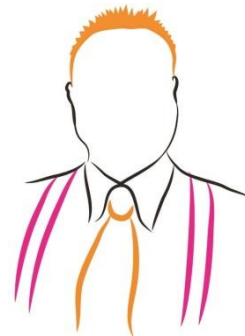
- Productivity is
  - 20% Technology
  - 30% Procedures & Processes
  - 50% People.

**We promise 30% increase in productivity**  
**...or your money back!**



# #1: Backup your Data

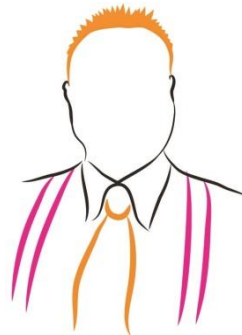
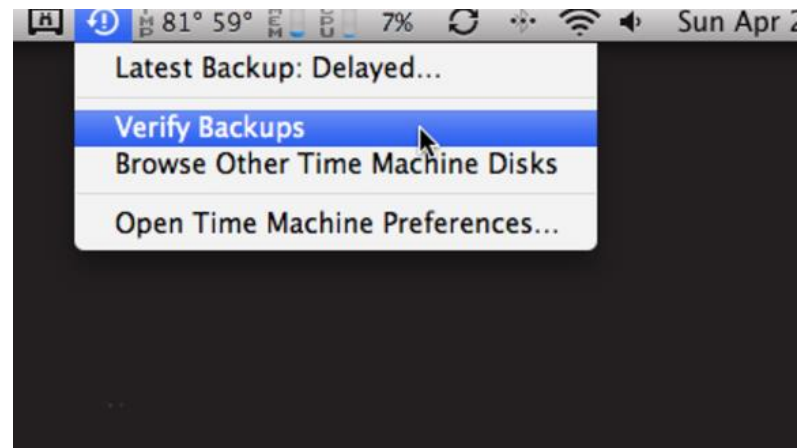
- Run at a MINIMUM Daily Backups of your Critical Data
- Automated Offsite Backups are Invaluable





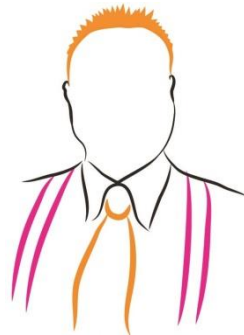
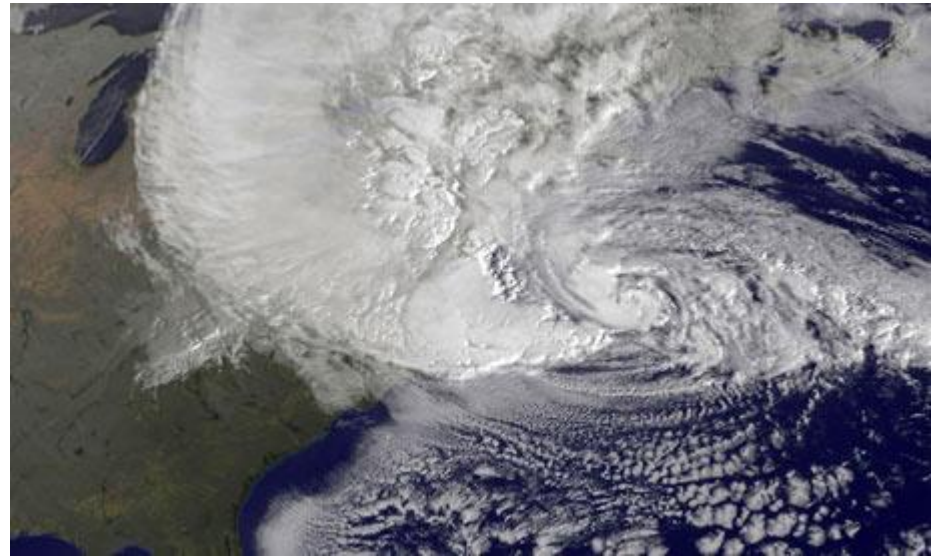
# #2: Test Your Backups

- Check/Test your data backups DAILY



# #3: Maintain Offsite Backups

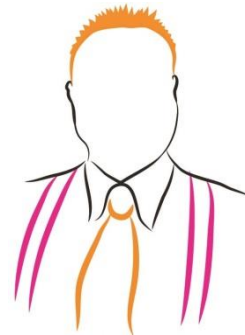
- Ensure all critical data is saved in multiple locations



# #4: Use A Managed AntiVirus

Trace Type	Data
File	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-adesk2012x64.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-a2012-64bits.rar xf-adesk2012x64.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\Crack\xf-a2012-32bits.rar xf-adesk2012x32.exe
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\AUTODESK.REVIT.ARCHITECTURE.V2012-ISO\rac2012\rac2012...
Archive	D:\RoamingProfiles\Desktop\ [REDACTED] My Documents\REVIT2012\AUTODESK.REVIT.ARCHITECTURE.V2012-ISO\rac2012\rac2012...

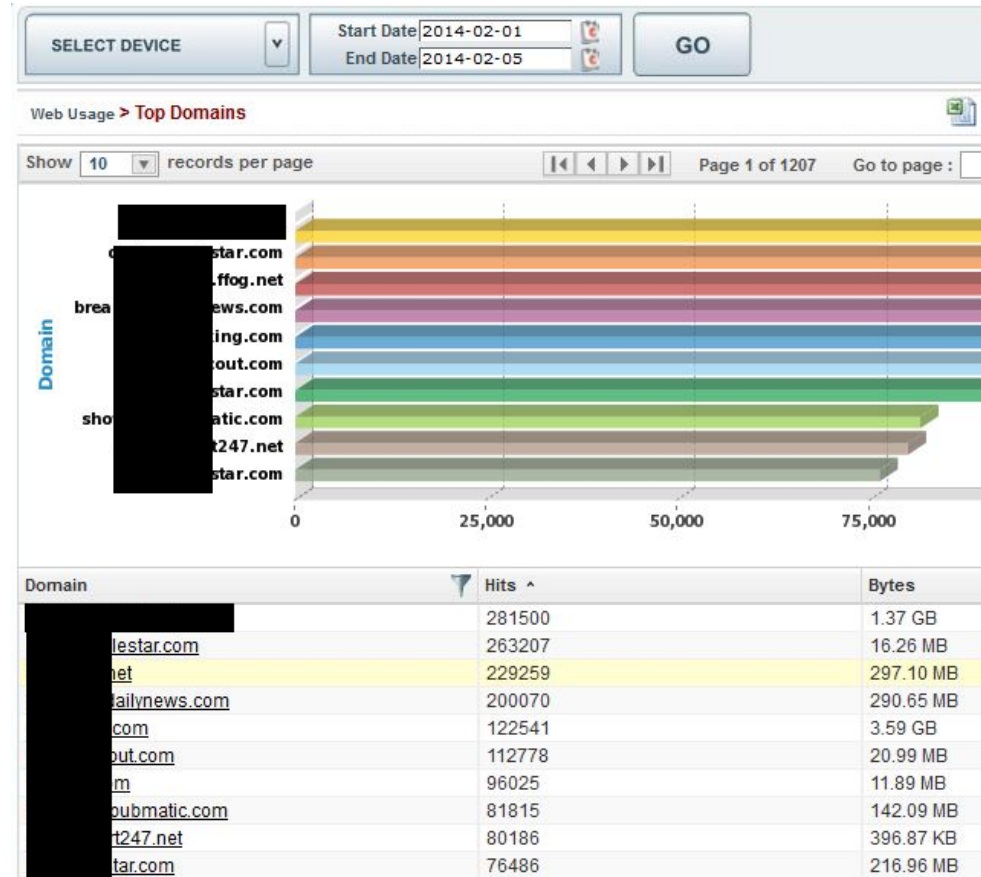
- **Use a current anti-virus**
  - If it's expired or it came with your PC, it's useless
  - If it was free...



# #5: Setup A Firewall That Provides Daily Reports

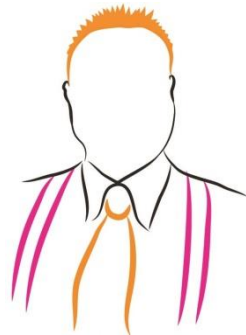
- **Daily Reporting Is CRITICAL For Encouraging Proper Behavior**

- Blocks viruses, drive-by downloads, tracks web surfing



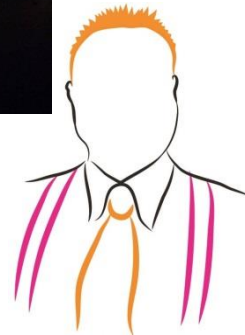
# #6: Increase Security

- **Password lock your iPhones, iPads, etc**
  - Hardware is replaceable. Your & your clients' privacy isn't.
- **Implement A Strong Password Policy**
- **Have your employees sign an Acceptable Use Policy**



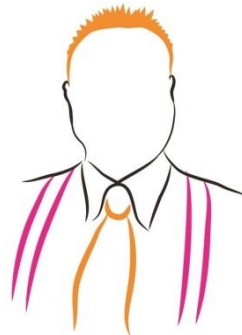
# #7: Implement A Disaster Recovery Plan

- **What are your plans if you lose power and Internet for:**
  - 1 day?
  - 10 days?
  - 30 days?
- **What's Your Average Daily Loss?**
- **Opportunity Costs?**



# Right Tools Are Required

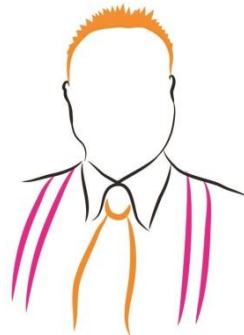
- **Give Your Staff The Tools They Need To Succeed**
  - Managed Support means they can call for tech support whenever they need it, without increasing your costs.





# Take More Vacations

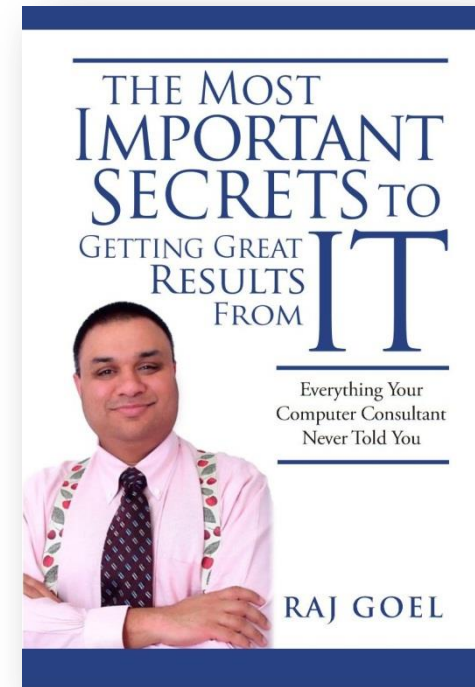
- A week or more of no phonecalls, emails, etc.
- Pure downtime == Mental Recharge.
- Cross-train your people
- Spot financial fraud





# Read

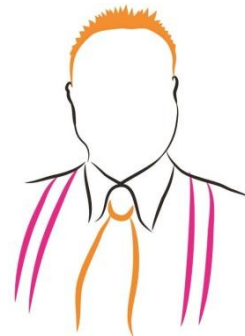
- Raj's Book
- Construction CFO/COO Report
- 4 Hour Work Week
- Get Things Done
- How To Win Friends And Influence People
- Art Of Public Speaking



# What's Next on YOUR Agenda?

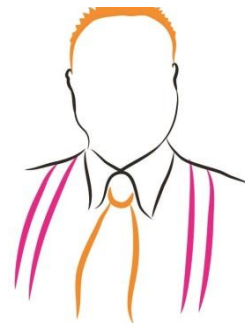
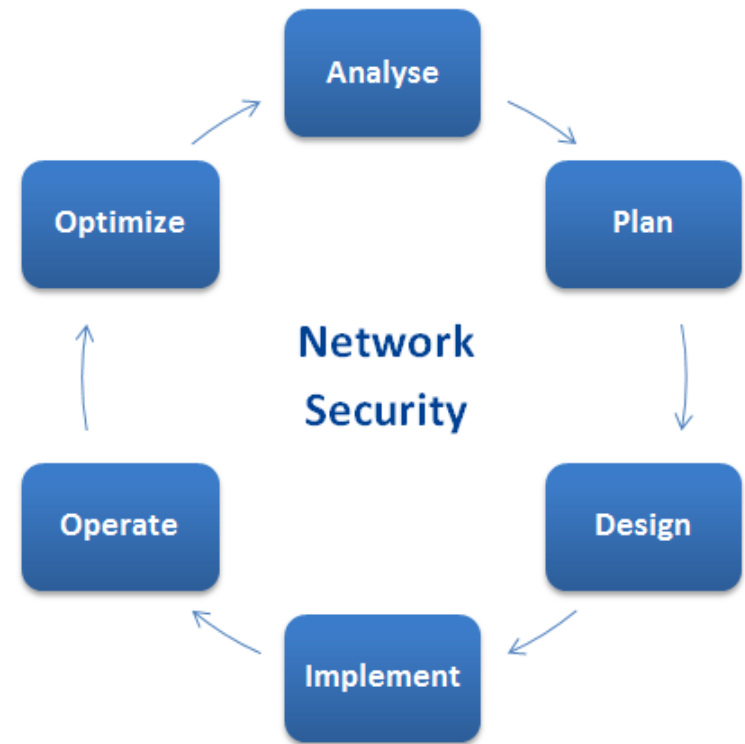
## *Free Hidden Risks Assessment*

1. Email [raj@brainlink.com](mailto:raj@brainlink.com)
2. We Will Schedule An On-Site Meeting
3. We Will Conduct The Assessment
4. Follow Up Meeting To Discuss Recommendations And Findings Of The Assessment



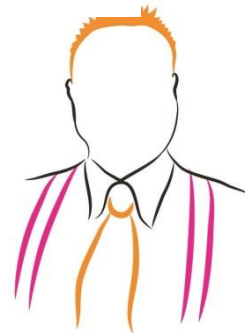
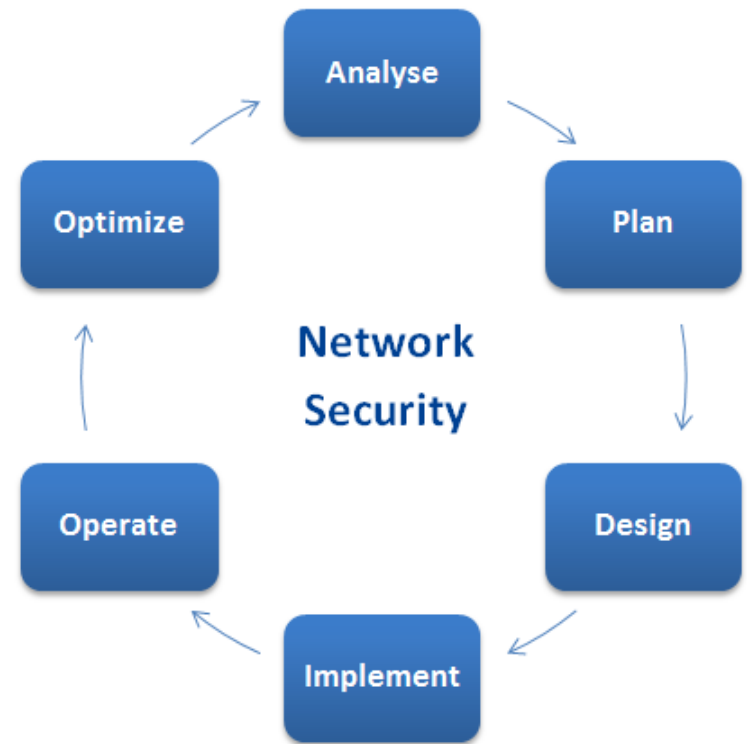
# Do it yourself or...

**You love the plan but decide to implement it on your own.** *If this is the case, we'll wish you the best of luck and ask that you keep in touch with us to let us know how you're doing*



# Hire An Expert...

You love the plan and ask us to get you protected **ASAP**. *If that's the case, we'll knock it out of the park ... and that's a promise.*



# Resources

What Construction Company  
CFOs and COOs MUST Know  
About Protecting Data

<http://www.brainlink.com/constructionseminar/>



If You Depend On  
Your Computer  
Network To Run  
Your Business, This Is  
One Report You  
**DON'T** Want To  
Overlook!

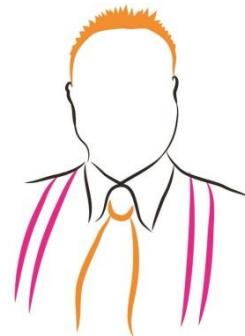
2014 Edition

RAJ GOEL, CISSP  
Owner

<http://www.brainlink.com/resources/newsletters/>

<http://www.rajgoel.com/media/>

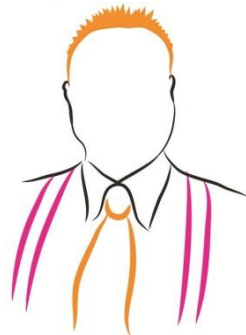
 **brainlink**  
You run your business and leave the IT to us



# About BRAINLINK

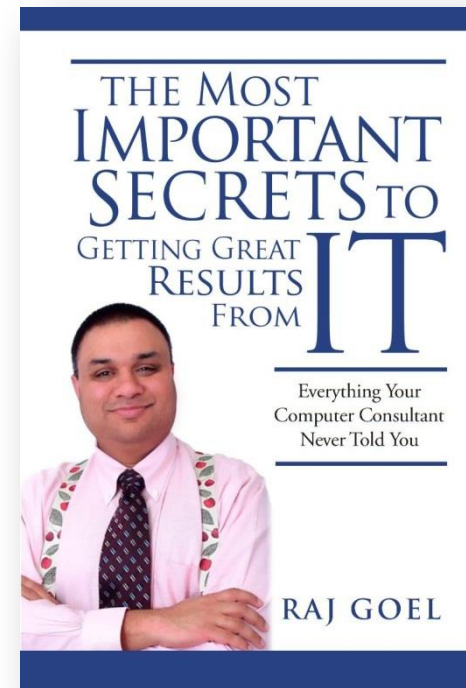
- ✓ Founded in 1994
- ✓ NYC Based
- ✓ Works Like An Extension of Your Firm
- ✓ Wide Range of Skills
- ✓ Fun To Work With
- ✓ Dedicated To Increasing Your Productivity & Profitability

**You Run Your Business And Leave The IT To Us.**



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- <http://www.amazon.com/gp/product/0984424814>

