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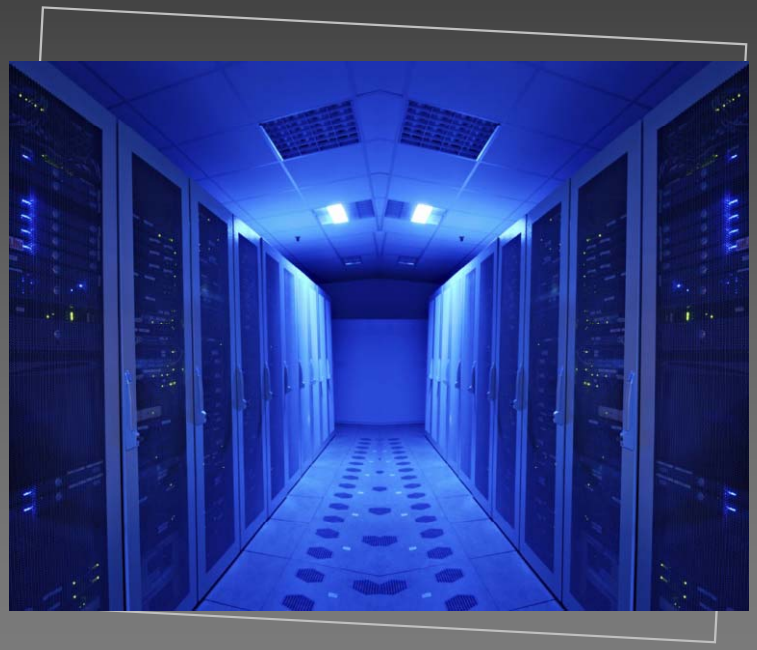

Cyber Warfare

The Reality Is We Are All Under Attack

Presented to: Maryland Education Enterprise Consortium
Presented by: Matthew J. Lane, CIO

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About JANUS Associates

Focused on Information Security and Business Continuity consulting since 1988

- Founded 1988, the oldest IT Security consultancy in the nation
- Privately held, woman-owned small business
- 25 Years serving government and business
- Locations in Stamford, Boston, Baltimore, Hartford, Austin

TOP BUSINESS
DiversityBusiness.com

SC MAGAZINE
GLOBAL AWARDS
COMMENDED

BiometriTech
Product Of The Year

Connecticut Quality Improvement Award

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JANUS Areas Of Expertise

- Risk Management
- Information Security & Privacy
- Risk/Vulnerability Assessments
- Cloud Assessment and Security Services
- Smart Grid Assessment and Security Services
- Information Assurance
- Business Continuity and Disaster Recovery Planning
- Regulatory Compliance
- Security Awareness & Training
- 3rd Party Vendor Assessments
- Policy and Procedures
- Computer Forensics

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JANUS Clients (partial)

ABC Television
Aetna Life & Casualty
Altura Energy (Occidental Petroleum)
Amnesty International
Anne Arundel Community College
Amoco
AT&T
Bath Iron Works
BlackRock Financial
Bausch & Lomb
Boston University
Cal State University at Sacramento
Centers for Medicare/Medicaid Services
Charles Schwab & Co
Citibank
City of New York
Comm. of Massachusetts
Comm. College of Baltimore County
Enoch Pratt Free Library - SailorNet
ESPN

Exxon Mobil
Federal Deposit Ins. Corp. (FDIC)
Federal Reserve Board of Gov
Gov't Accountability Office (GAO)
IBM
ITT Hartford
Incyte Genomics
Lockheed Martin
Metropolitan Life
Merrill Lynch
Microsoft
New York Power Authority
Oppenheimer Funds
Oregon State Lottery
Pacific Gas & Electric
Port Authority of NY & NJ
Prince George's Community College
Social Security Administration
State of Florida

State of Maryland
State of New York
State of North Carolina
State of Texas
State of Wisconsin
State of Virginia
State of Wyoming
UCAL – Berkeley
Univ. of Massachusetts
University of Maryland
University College
Univ. of Texas
University of Wisconsin
Texas A&M
US Customs
US Naval Academy
Valley National Bank
VISA International
VW Credit Corp.
Wal-Mart

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Food For Thought

"When we look back at the higher education data breaches in 2012, we can see that the hackers are clearly getting smarter at stealing data. The reported breaches remain on the low side, yet the stolen data is over three times what we saw in 2011." Campus Technology Magazine, March 2013

"In recent years, literally hundreds of universities and millions of data records have been compromised due to what security analysts say are poor security practices." J. Vijayan – Computerworld, September 24, 2013

Earlier this year, Educause, a non-profit community for IT professionals focused on the higher education vertical warned that a data breach affecting its 1,800 college and 300 corporate members had occurred.

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Definitions

- **Hacker**
  - Made innovative modifications to electronics
  - Modified Software
  - Broke into Phone Systems
  - Circumvents Computer Security

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Definitions

- Hacker
- **Hacktivist**
  - Political Motivation
  - Social Motivation
  - Non-violent
  - Independent

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Definitions

- Hacker
- Hacktivist
- **Cyber Terrorist**
  - Political Motivation
  - May be Violent
  - May be state sponsored

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Definitions

- Hacker
- Hacktivist
- Cyber Terrorist
- **Cyber Criminal**
  - Financially Motivated
  - Ties to Organized Crime
  - Majority in Eastern Europe

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Definitions

- Hacker
- Hacktivist
- Cyber Terrorist
- Cyber Criminal
- **Cyber Warrior**
  - State Sponsored
  - Traditional war activities

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What is a Cyber War?

- A political mechanism to force another group of people to change and act differently

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What is a Cyber War?

- A political mechanism to force another group of people to change and act differently
- **An organized, prolonged, military conflict between sovereign entities**

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What is a Cyber War?

- A political mechanism to force another group of people to change and act differently
- an organized, prolonged, military conflict between sovereign entities
- **It effects violence, aggression, and mortality**

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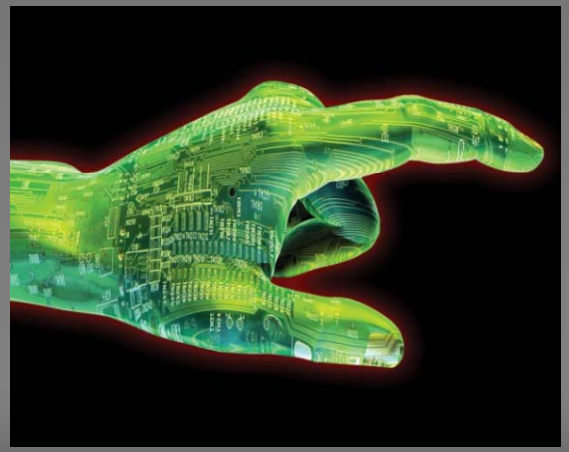
What Are Cyber Warriors After?

In the past the bad guys were after financial gain.

Today they are after everything

- Log On Information (User ID's & Passwords)
- Credit Card Information
- Intellectual Property
- Corporate Confidential Information
- Documents, Spreadsheets, Email, Images
- Access to Manufacturing Process Control



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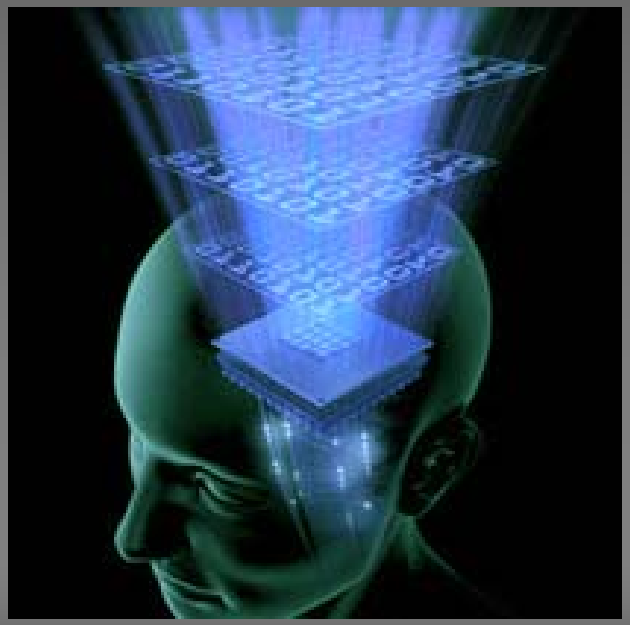
The Components of Cyber Warfare

- Reconnaissance



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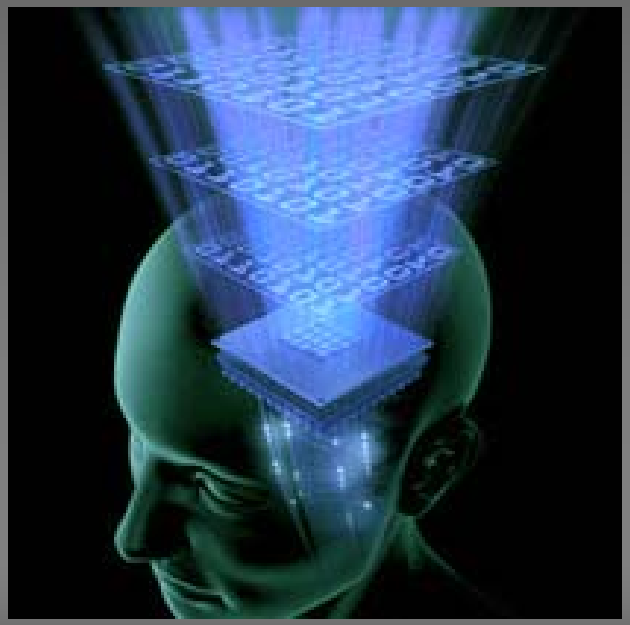
The Components of Cyber Warfare

- Reconnaissance
- **Espionage**



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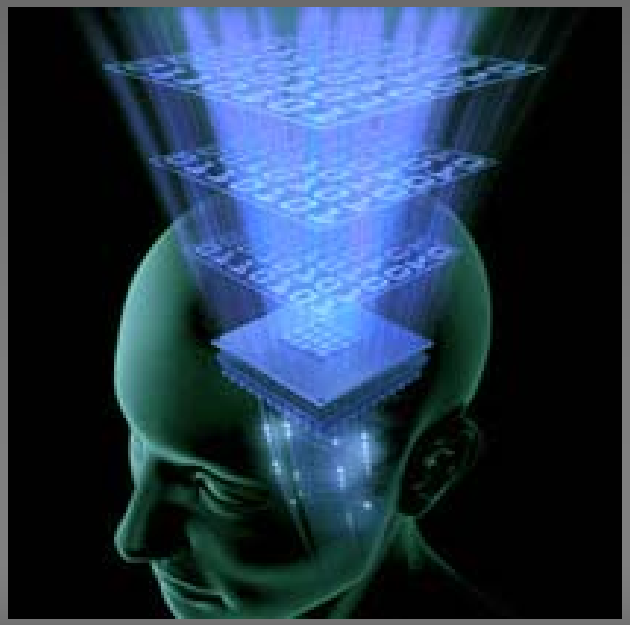
The Components of Cyber Warfare

- Reconnaissance
- Espionage
- **Arms Proliferation**



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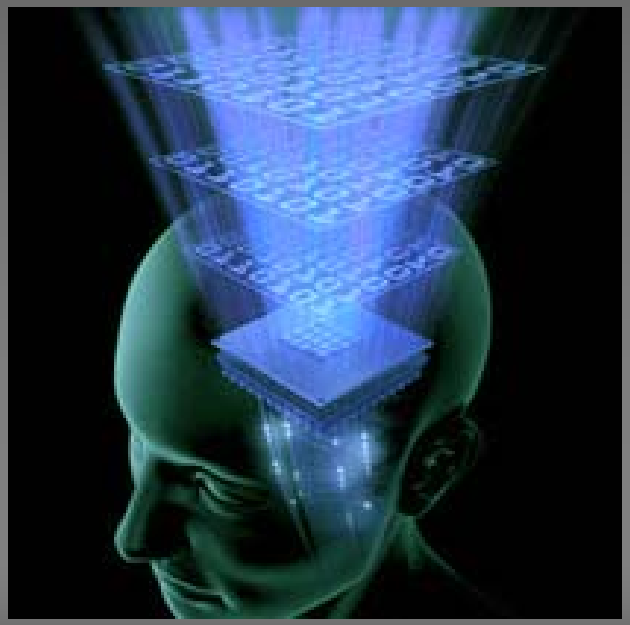
The Components of Cyber Warfare

- Reconnaissance
- Espionage
- Arms Proliferation
- **Aggression**



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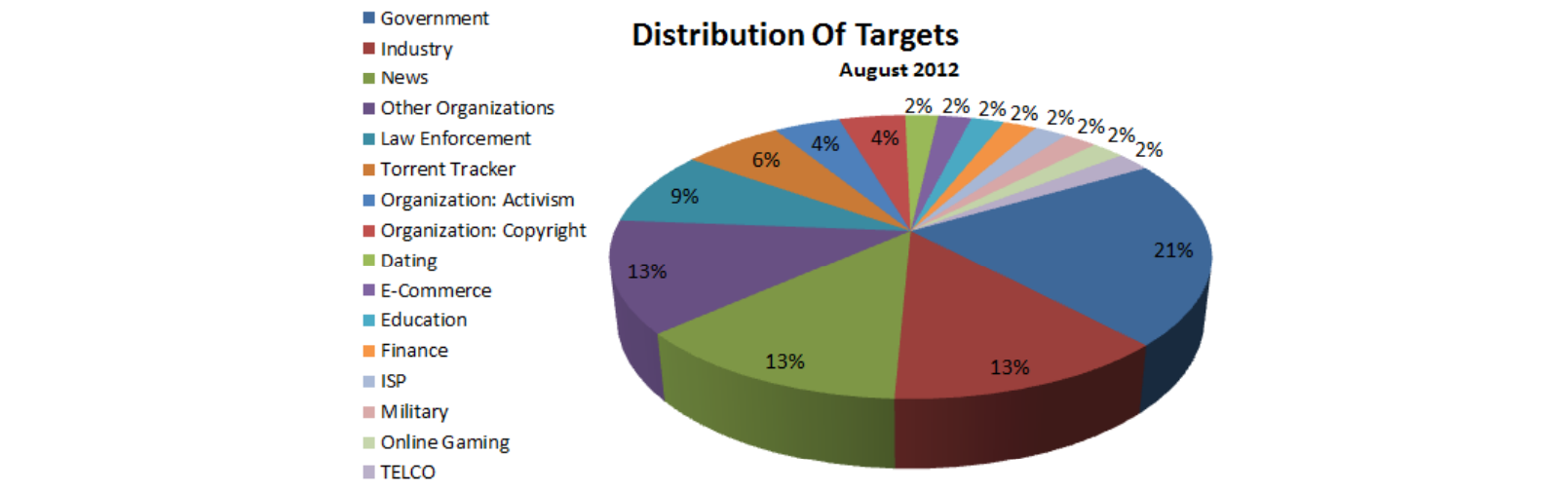
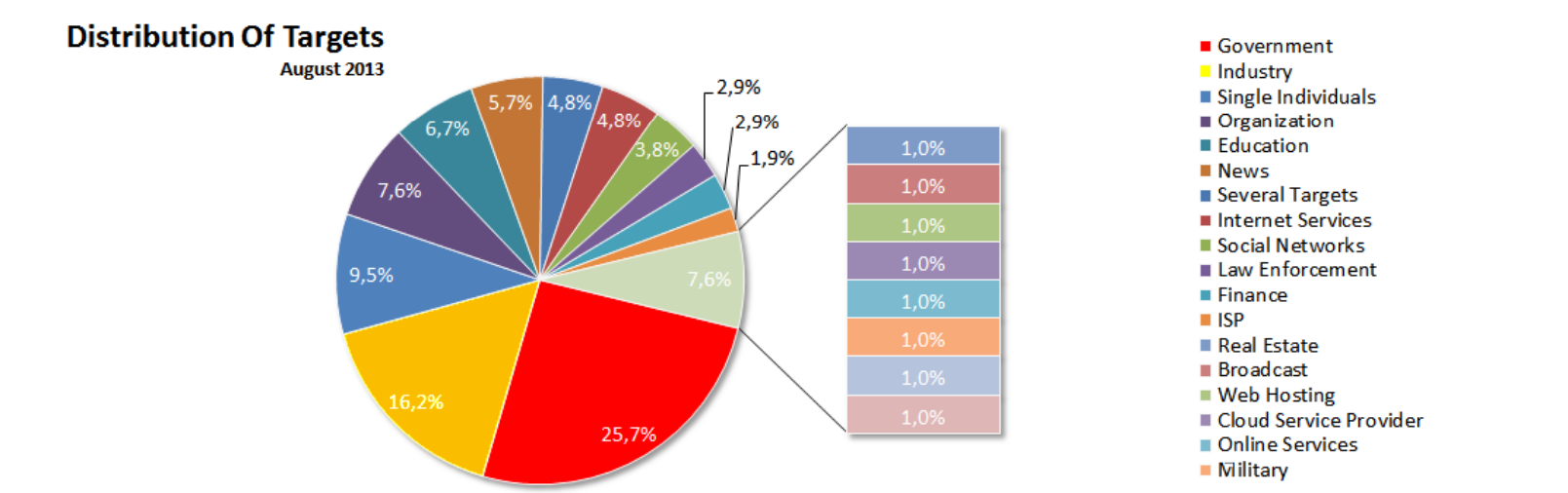
Cyber Warfare Distribution of Targets





* Source: hackmageddon.com

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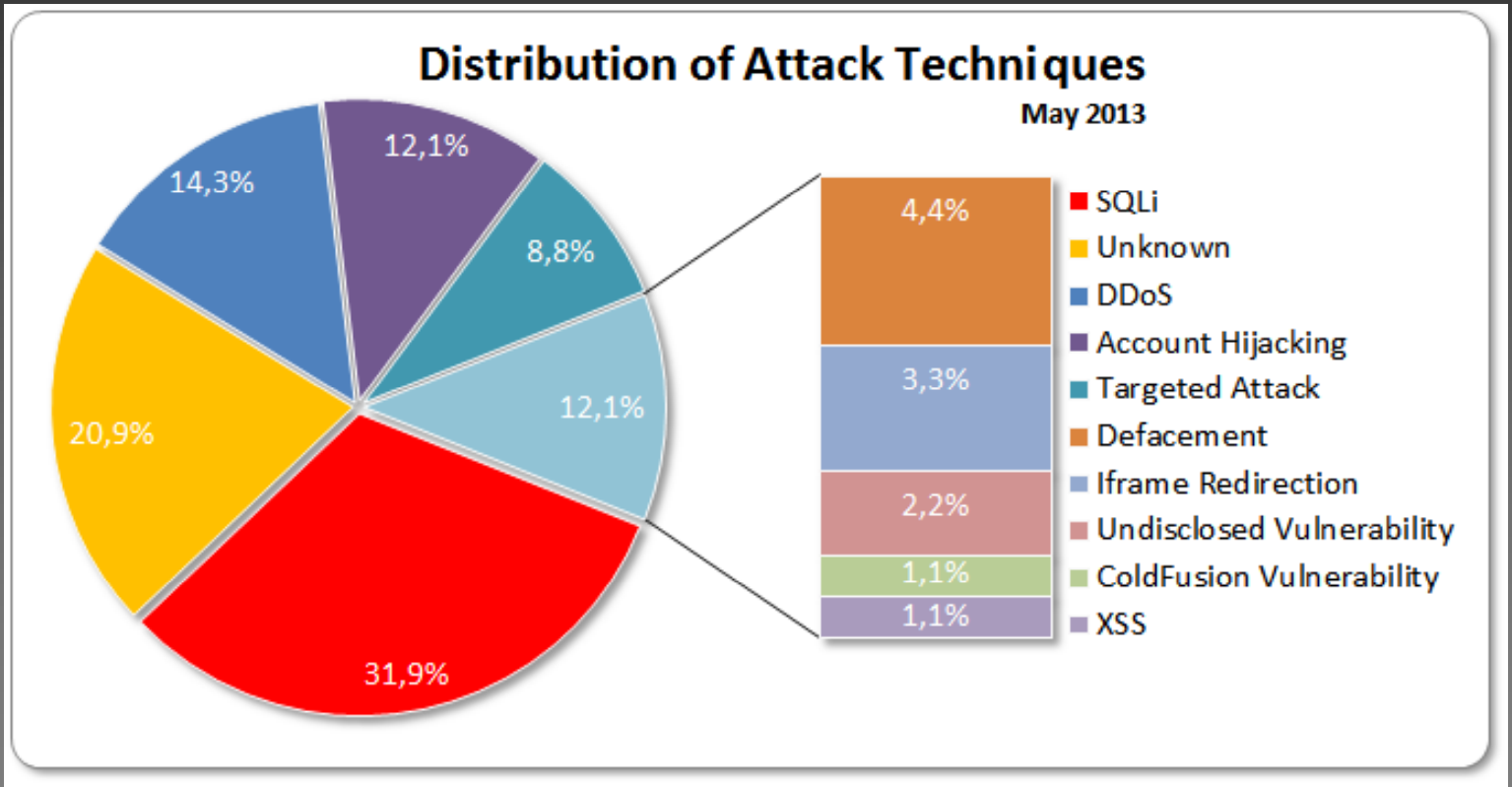
Cyber Warfare Distribution of Attack Techniques



* Source: hackmageddon.com

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So Easy: A Six Year Old Can Do It!

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Properly Responding To A Cyber Attack

- First Step – Plan in Advance
  - Update Your Plan on a Regular Basis
  - Do a Table Exercise and Test Your Plan
- Notify the Proper Authorities
- Isolate and Protect Compromised System
- Document Everything
- Discuss on a Need to Know Basis

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How NOT To Respond To A Cyber Attack

- **Hack-Back-Attack**

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How NOT To Respond To A Cyber Attack

- Hack-Back-Attack
- **Escalate to traditional warfare**

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How NOT To Respond To A Cyber Attack

- Hack-Back-Attack
- Escalate to traditional warfare
- **Buy more bandwidth**

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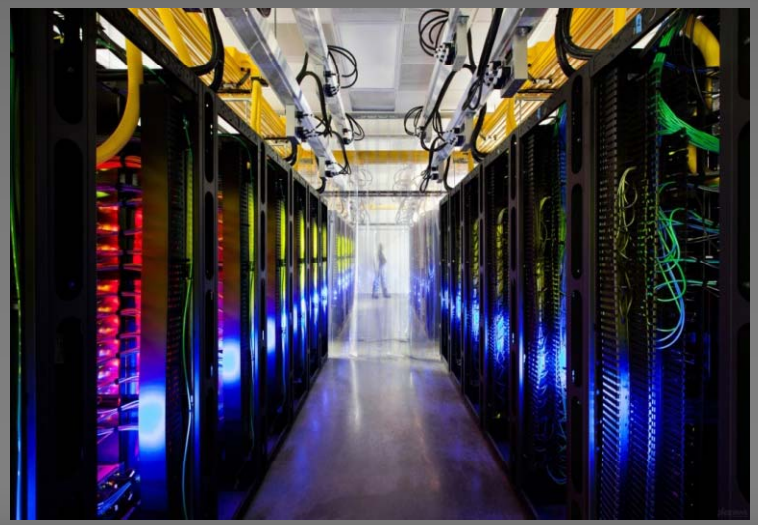
How NOT To Respond To A Cyber Attack

- Hack-Back-Attack
- Escalate to traditional warfare
- Buy more bandwidth
- **Move to the Cloud**



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How To Tell If Your Safeguards Are Effective

- Internal Testing

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How To Tell If Your Safeguards Are Effective

- Internal Testing
- **3rd Party Testing**

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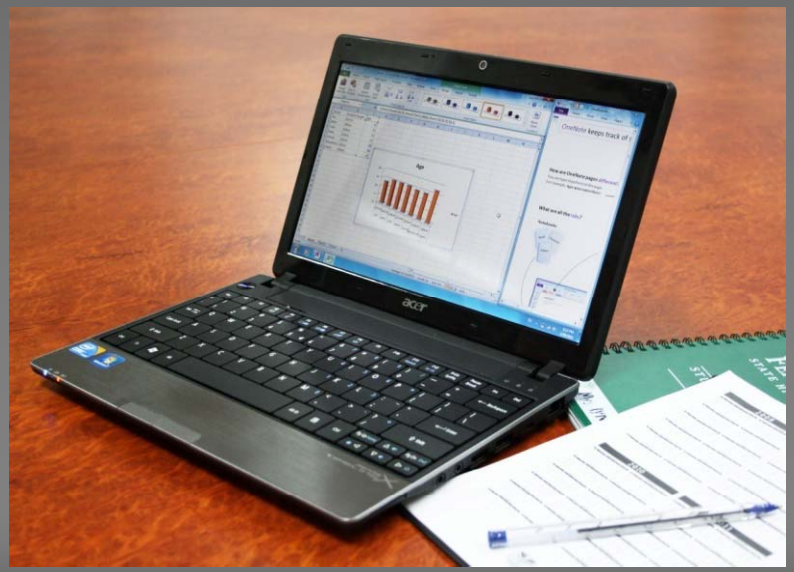
How To Tell If Your Safeguards Are Effective

- Internal Testing
- 3rd Party Testing
- **Cost Benefits**



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How To Tell If Your Safeguards Are Effective

- Internal Testing
- 3rd Party Testing
- Cost Benefits
- **What Should be Tested?**

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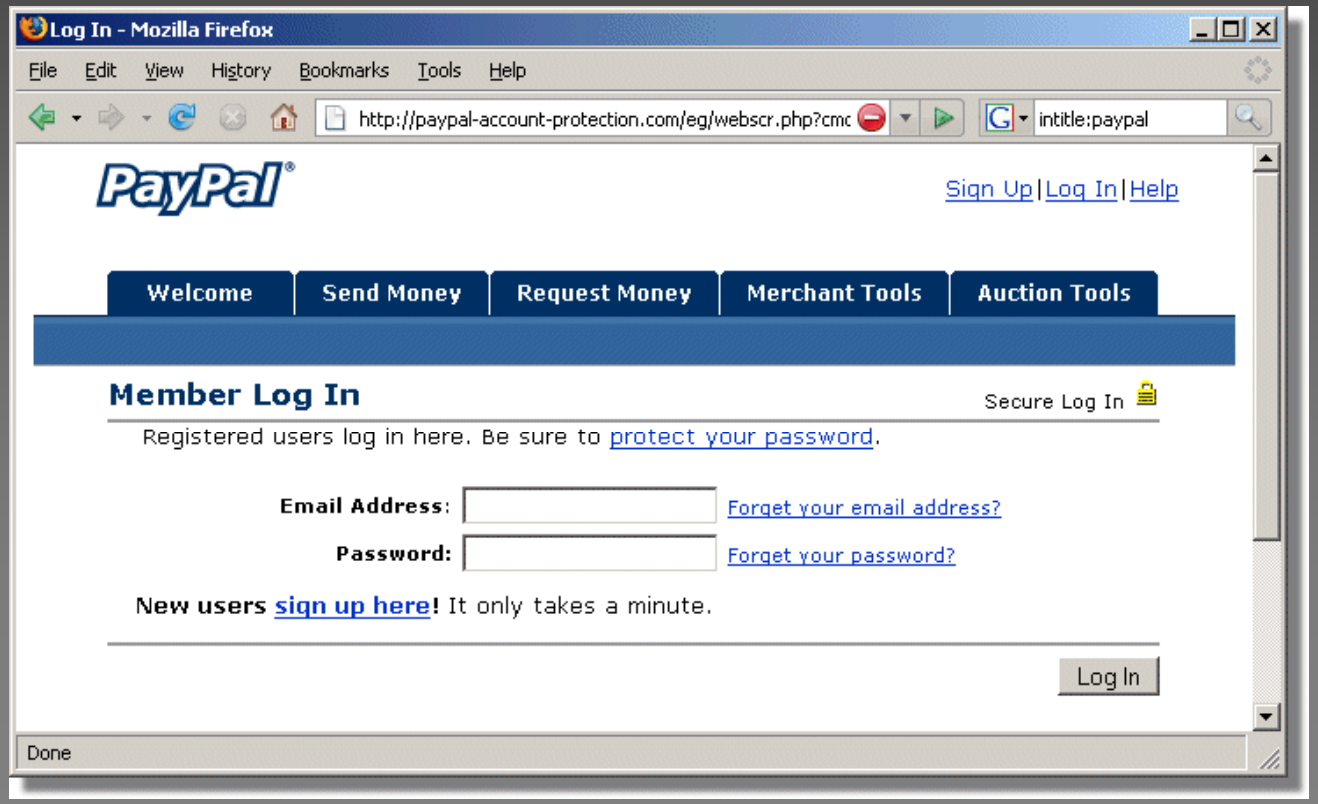
Test Sample: Spear Phishing

- Purchase a similar looking domain



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Test Sample: Spear Phishing

- Purchase a similar looking domain
- **Set up an email for the domain**

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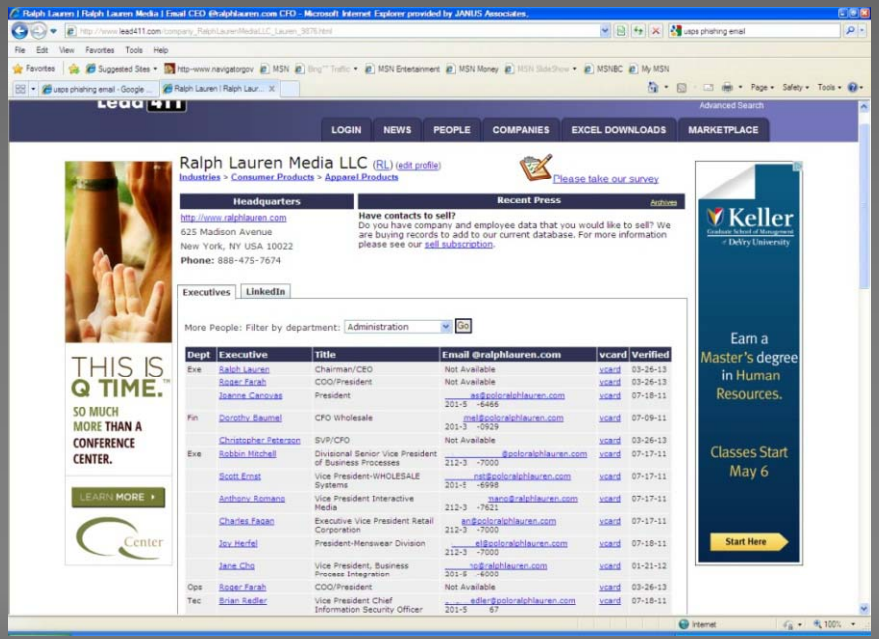
Test Sample: Spear Phishing

- Purchase a similar looking domain
- Set up an email for the domain
- **Identify suspect classes of users**



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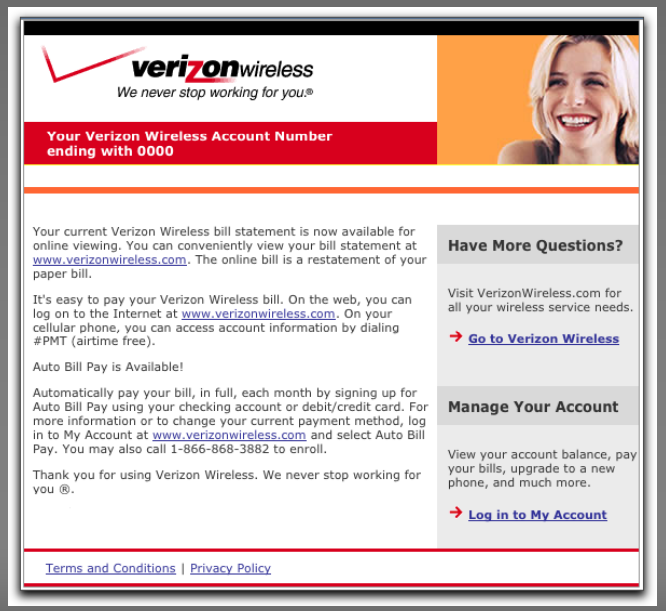
Test Sample: Spear Phishing

- Purchase a similar looking domain
- Set up an email for the domain
- Identify suspect classes of users
- **Craft e-mail messages to each class of user**



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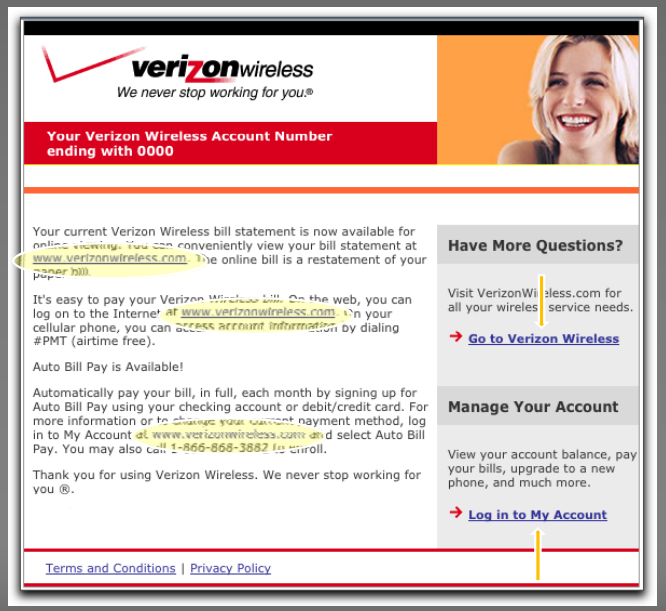
Test Sample: Spear Phishing

- Purchase a similar looking domain
- Set up an email for the domain
- Identify suspect classes of users
- Craft e-mail messages to each class of user
- **Create Click Based attacks**



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Test Sample: Spear Phishing

- Purchase a similar looking domain
- Set up an email for the domain
- Identify suspect classes of users
- Craft e-mail messages to each class of user
- Create Click Based attacks
- **Create attachment based attacks**

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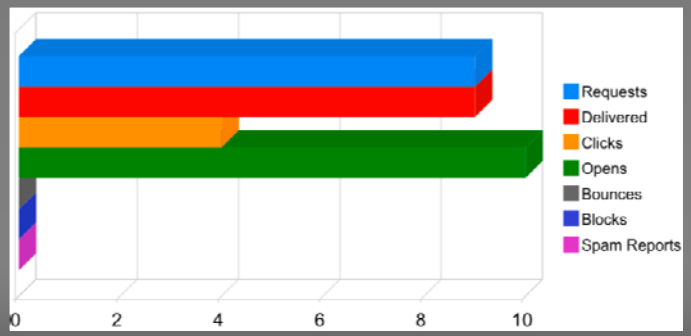
Test Sample: Spear Phishing

- Purchase a similar looking domain
- Set up e-mail for the domain
- Identify suspect classes of users
- Craft e-mail messages to each class of user
- Create Click Based attacks
- Create attachment based attacks
- **Generate statistics to improve process**



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Questions and Answers

Free Offer: 42 page data breach incident response template

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