CPIM

Center For Public Investment Management

THE SEAL OF THE TREASURER OF THE STATE OF OHIO

WITH GOD ALL THINGS ARE POSSIBLE

A PROGRAM BROUGHT TO YOU BY:

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Treasurer of Ohio

CASH MANAGEMENT 240

Financial Fraud – A Case Study

2014 CPIM Academy

ACH Fraud:
A Cautionary Tale

Muskingum County Library System

information
DESTINATION
THE MUSKINGUM COUNTY LIBRARY SYSTEM

Muskingum County Library System

- Background information:
  - Medium size library serving all of Muskingum County. Annual budget of about $4.5 million with 6 locations.
  - 2 Accounting staff members – 1 full-time and 1 part-time.
  - In December of 2012, the Library signed a 3 year depository agreement with a small local community bank for active funds.

What Happened?

- Tuesday, March 19, 2013, the Library ran payroll and uploaded direct deposit to its bank.
- Monday, March 25, 2013, the Library was notified by its bank via phone that the library had some fraudulent activity on its account.
- 3 ACH transactions that were not initiated by the Library on March 21, March 22 and March 25 totaling **$144,743**.
- The bank immediately took steps to "recall" those transactions.

Library’s Response

- Library IT staff disconnected both Accounting PCs from the internet and called its Technology Consultant.
- Based on the Tech Consultant’s advice, Library IT staff erased and re-formatted both Accounting PCs.
- Zanesville Police were called and a report was filed.
- The Library closed its existing bank accounts and opened new ones with new log on information.
- The Library notified staff of a possible security breach and contacted the Board of Trustees.

End Result

- Auditor of State's Office was involved and information was shared with the FBI via AOS.
- The Library's insurance carrier was notified and a claim made.
- By April 25th, 2013, **$54,910** was recovered.
- As of the beginning of 2014, the Library was in negotiations with the bank regarding the remaining loss of **$89,833**.

Mistakes Made

- The Library's ACH Originator Agreement required it to notify the bank of direct deposit uploads. When the staff was trained by the Bank, they were told to disregard that requirement .
- IT staff should have not erased and reformatted hard drives.
- The Library should have pushed harder with local law enforcement.

What the Library Is Doing Differently

- Now required by Bank to follow the ACH Originator Agreement.
- Designated one stand-alone PC that is only used for online banking.
- Requested online access from only 1 IP address.
- Purchased a cybercrime policy.
- Revising its Banking RFP to include a section regarding online banking security minimums.

Digital Financial Security

Common Misperceptions

Common Misperception:
“I’m secure.”

Reality: NO computer attached to the internet is completely secure.

Common Misperception:
“If I had more money I could make us secure.”

Reality: Federal Agencies, as well as Fortune 100 companies have fallen victim to cyber-crime, and they have nearly unlimited budgets.

Goal: Become sufficiently secure that your data isn’t worth the effort to compromise your security.

The next couple of slides show that even unlimited recourses do NOT result in security.

In the last 10 years, who has been compromised?

Central Intelligence Agency:

- *CIA website – June 2011*

Congress:

- *U.S. Senate – June 2011*
- *Senator Bill Nelson's office – March 2009*
- *Representative Wolf and Foreign Affairs Committee offices – August 2006*

Department of Agriculture:

- *USDA DC headquarters – June 2006*

Department of Commerce:

- *Economic Development Administration – February 2012*
- *Website breach – December 2009*
- *Commerce Secretary – December 2007*
- *Bureau of Industry and Security – October*

Department of Defense:

- *F-35 development – February 2012*
- *Unmanned aerial vehicle – December 2011*
- *DOD – July 2011*
- *National Guard – December 2010*
- *Army – April 2010*
- *Unmanned aerial vehicle feeds – December 2009*
- *US Central Command – November 2008*
- *Secretary of Defense's email – June 2007*
- *National Defense University – May 2007*
- *Naval War College – November 2006*

Department of Education:

- *August 2006*

Department of Energy:

- *Nuclear Security Administration – October 2011*

DOE/National Laboratories:

- *Pacific Northwest National Labs – July 2011*
- *Thomas Jefferson National Labs – July*
- *Oak Ridge National Labs – April 2011 and October 2007*

Department of Homeland Security:

- *DHS website – February 2012*
- *Homeland Security Information Network – May 2009*
- *DHS – September 2007*
- *DHS – June 2007*
- *DHS Headquarters*

Department of Interior:

- *May 2010*
- *DOI Audit – November 2009*
- *DOI – February 2002*

Department of Justice:

- *DOJ website – January 2012*

DOJ/Federal Bureau of Investigation:

- *FBI conference call – February*
- *FBI website – January 2012 and June 2011*

Department of State:

- *Bureau of East Asian Affairs – June 2006*

Department of Transportation:

- *National Highway Traffic Safety Administration – June 2010*
- *DOT website – July 2009*

DOT/Federal Aviation Administration:

- *FAA – May 2009*

Department of Treasury:

- *Treasury Dept website – July 2009*

Department of Veterans Affairs:

- *4,000 records exposed between March and December of 2011*
- *26.5M records were stolen in May 2009.*

Federal Deposit Insurance Corporation:

- *From August 2008 to July 2009*

Federal Trade Commission:

- *FTC online security website – January 2012*
- *FTC website – July 2009*

National Aeronautics and Space Administration:

- NASA – 2011 and 2010
- *NASA satellite – November 2011*
- *NASA's Jet Propulsion Laboratory website – May 2011*
- *Goddard Earth Observation System – May 2011*
- *International Space Station – March 2011*
- *Jet Propulsion Laboratory – 2009*
- *NASA headquarters – December 2006*
- *NASA – 2004*
- *Ames Research Center – 2004*

National Archives:

- *In April 2009, a hard drive containing SSNs of over 100,000*

Office of Personnel Management:

- *USAjobs – January 2009*

Social Security Administration:

- *36,000 people SSN were released by the SSA between May 2007 and April 2010.*

U.S. Copyright:

- *Copyright office – January 2012*

What Value Does Your Entity Have to a Hacker?

- Financial information and banking access
- Customer's personal information
- Direct connections to other government organizations
- Vendor information
- Employees' personal information
- Reputation

Becoming more secure does NOT cost a lot of money!

No Cost Must Do’s

- ***Develop a relationship with your bank***
  - Most entities use local banks. Leverage that relationship by meeting with the bank president quarterly. This will become an invaluable relationship if something happens.
- ***Implement Debit Block***
  - Debit block prevents withdrawals from your accounts without your knowledge. You must push payments, rather than individuals or organizations pulling payments.
- ***Check your accounts DAILY***
  - Review all your accounts daily. Alert the bank if any transactions were not authorized. Pay special attention to any withdrawal under $1.00, specifically the withdrawal of $.01. This is a “validity test” of your account. Someone has access to your account and is testing the ability to withdrawal funds. They will be back to with withdrawal a lot more. Notify the bank and put a hold on the account immediately.

No Cost Must Do's

- ***Turn on Auto-Updates for Windows computers***
  - Microsoft puts out security updates on the second Tuesday of every month (Patch Tuesday).
  - Make sure all Windows computers are set to automatically install the security updates. Also, security patches are released throughout the month depending on the severity of the vulnerability.
  - Have the computers set to check on a daily basis after hours.
- ***Use a firewall***
  - While enterprise firewalls can cost >$20,000 each and many can't afford that investment, Windows offers a free firewall for the Windows desktops. Turn on this feature.
  - A firewall allows only particular types of web traffic to your computer (websites, FTP, Telnet.)

Little Cost Must Do's

- ***Dual factor (two factor) authentication***
  - Dual factor authentication is defined as something you know and something you have. Usually this is a username and password and a key fob that displays a number that must be entered into the banking website within 60 seconds of display. Work with your bank to implement this.
- ***Anti-virus on all computers***
  - All Windows computers need to have antivirus with updated signature files. This is your best protection against inadvertently downloading viruses/malware/spyware while surfing the internet.
- ***Separate network into all general public and administration computers***
  - The general public accessing websites and bringing in their own media is the highest risk for infection. Minimize the risk by separating those computers from employee computers.

Policy & Procedure Changes to Implement

- ***Do not use general computers***
  - The general public computers are the location a virus will infiltrate your entity. **Don't use those computers!!**
- ***No wireless access for banking transactions***
  - Wireless is unsecure, even if you have "encryption protocols" enabled. It takes less then a minute to break most of this "encryption." If you are doing banking, use administrative computers that are wired.
- ***Use different passwords***
  - Do not use the same password for all your different access.
  - Your Facebook password needs to be different than your banking password. Password sentences, or phrases are better than a complex password. "Oct. 31st is my favorite day" is better than "31Oct!!day."
  - And, no password is secure if written on a sticky note attached to the monitor. ☺

Policy & Procedure Changes to Implement

- ***Use administrative computers for work only***
  - Use Administrative Computers only for work. Going to non-business sites/blogs increases the risk of getting a virus.
- ***Limit number of computers authorized to do banking***
  - Give your bank the IP address of the computer(s) authorized to do banking. All other transactions should be rejected. When implementing this, develop a business solution if your entity's network is down.
- ***Develop a rebuild schedule for all desktops***
  - Viruses/malware/spyware typically "go to sleep" immediately after being installed. The more often you can rebuild the desktops the more likely you can remove the infection before it "wakes up." Remember to re-install antivirus software and apply all security patches.

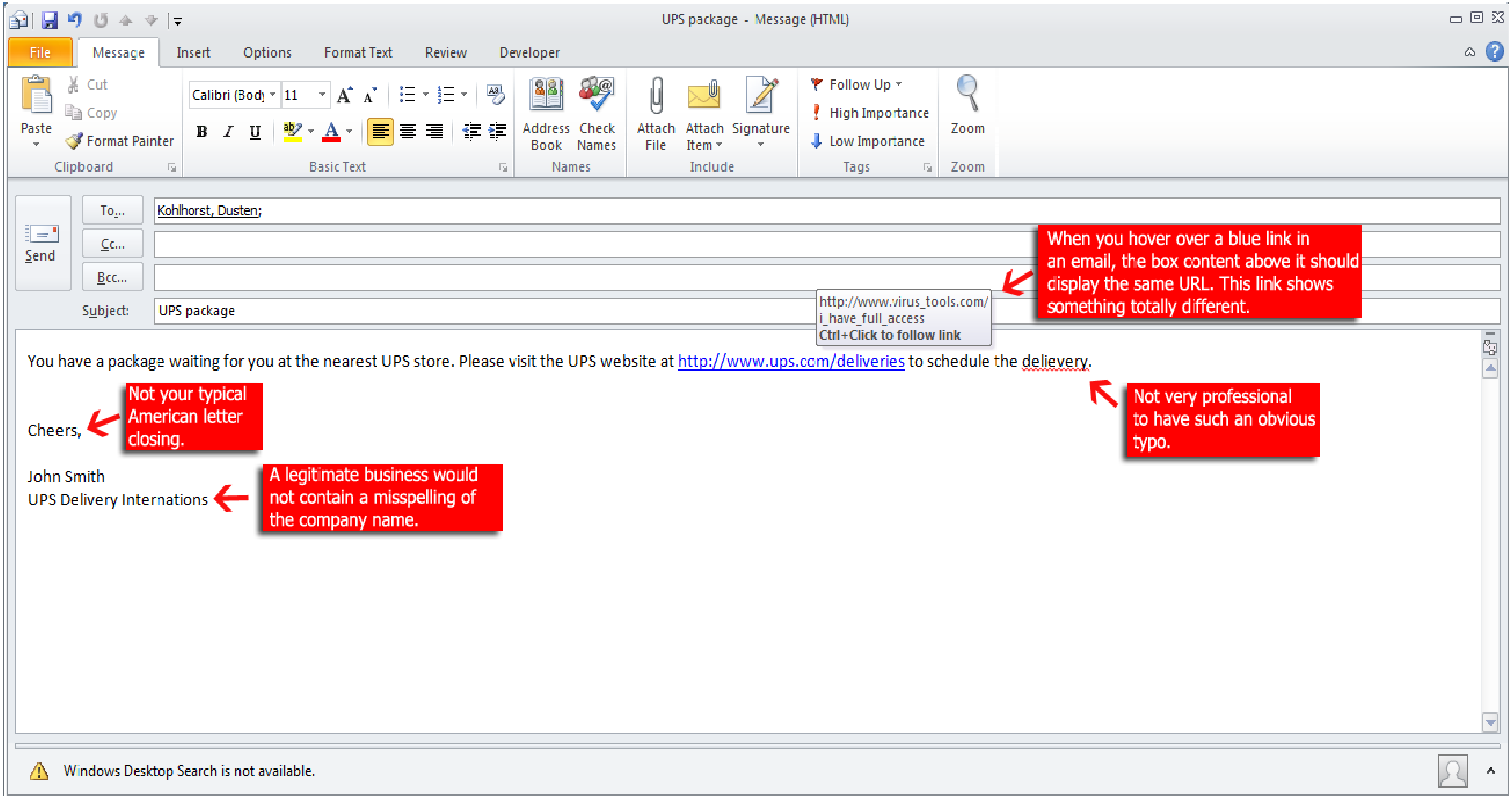
Final Policy & Procedure Change

- While there are many things to consider, here are a few basic rules that should be followed:
  - Turn off the infected computer(s), and do NOT format it. The computer may have forensic data that law enforcement can use.
  - Contact the bank and let them know the situation. Suspend the account until you are comfortable no unauthorized transactions are going to take place.
  - Contact local law enforcement and Ohio Highway Patrol.
  - Be able to conduct banking business without using computers. In the event of a compromise the designated banking computers may be the ones infected. You need to be able to conduct business while these devices are being inspected.
  - Notify any other banks you have accounts with even if they are not effected. Those accounts may be compromised too.

Develop policies BEFORE a security breach occurs!

Do Not Click on Links Inside Emails

Clicking on links inside an email can give COMPLETE control of your computer to a hacker. They can have the ability to watch everything you are doing and send them a file of everything you've typed. If you get an email with imbedded links, lookup the organization's phone number and give them a call.



To... Kohlhorst, Dusten;

Subject: UPS package

http://www.virus_tools.com/i_have_full_access
Ctrl+Click to follow link

When you hover over a blue link in an email, the box content above it should display the same URL. This link shows something totally different.

You have a package waiting for you at the nearest UPS store. Please visit the UPS website at http://www.ups.com/deliveries to schedule the delievery.

Not very professional to have such an obvious typo.

Cheers,

Not your typical American letter closing.

John Smith
UPS Delivery Internations

A legitimate business would not contain a misspelling of the company name.

Security Resource

David Brown
State Chief Information Security Officer
Office of Information Security & Privacy
(614) 644-9391
State.CISCO@OIT.ohio.gov

- Intrusion Prevention
- Incident Handling & Forensics
- Vulnerability Assessment & Penetration Testing
- Information Security Training & Awareness

Ohio Homeland Security

Homeland Fusion Center

877-OHS-INTEL

www.privacy.ohio.gov

Ohio Strategic Analysis & Information Center

www.homelandsecurity.ohio.gov/saic.stm

Multi-State Information Sharing & Analysis Center

http://msisac.cisecurity.org

OHIO HOMELAND SECURITY

MS-ISAC MULTI-STATE Information Sharing & Analysis Center