Fraud and Security Presentation

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Agenda

- Evolving threat environment
- Fraud schemes and scams
- Security best practices

Evolving Threat Environment

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Current Threat Trends

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57% of business leaders feel their organization is **MORE SUSCEPTIBLE** to cybersecurity threats in 2018 than previous year

$12.5 Billion
Business Email Compromise

$2.4 Million
Average organization cost from malware attack

22% of corporate ransomware victims had to to fully cease business operations during event

59% of malicious email sent contained a banking Trojan surpassing ransomware for the first time since 2016

Companies are hit by ransomware every **40 seconds**

90 % Of businesses were targeted and received emails related to Business Email Compromise (BEC)

$12M Average organization cost from cyber fraud

136% increase in reported fraud losses related to Business Email Compromise

hxxps://www[.]ic3[.]gov/media/2018/180712.aspx
hxxps://threatconnect[.]com/wp-content/uploads/ThreatConnect-Building-a-Threat-Intelligence-Program.pdf
hxxps://www[.]Malwarebytes[.]com/pdf/infographics/Malwarebytes_The_State_Of_Ransomware_Among_SMBs.pdf
hxxps://www[.]Proofpoint[.]com/sites/default/files/pfpt-us-tr-q118-quarterly-threat-report.pdf
Ponemon Institute 2018 State of Endpoint Security Risk Report

Fraud Schemes and Scams

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Ransomware Event

Fast Food Restaurant Chain - $400MM Annual Revenue - 100 Locations

Sequence of Events:

- Individual employee workstation observed to be infected at 12:20 AM in HQ location.
- Malware spreads rapidly, by 7:00 AM remaining workstations across the organization and files on multiple servers are encrypted.
- Standalone workstation purchased to conduct bank business.
- External I.T. firm engaged.
- Root cause infection email spam.
- Initial Bitcoin Ransomware of $10,000 paid to perpetrators.
- Second request for additional $5 000 received and paid.
- Encryption keys received.
- Restoration initiated.

Impacts

- Paralyzed business operations and financial transactions.
- $15,000 paid to perpetrators.
- Malware consultation expense impact.
- 10 business days to restore impacted systems.

Business Email Compromise

CEO Scam / Masquerading

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Some Phishing schemes involve mimicking internal emails

- Perpetrators know key individuals and their roles in the company based on:
  information in social media sites, professional associations, company website, etc.
- Domain names may look similar to your company name but are intentionally misspelled
- Fraudulent message appears to be coming from senior executives within the company
- Urgency and confidentiality are key components of the email

From: Treasurer@mycompany.com
Sent: Tuesday, July 8, 2017 11:17a.m.
To: chris.smith@mycompany.com
Subject: FW: Wire Transfer

This is the third one. We are pulling the confirmation now and will send to you.

From: Treasurer@mycompany.com
Sent: Wednesday, June 11, 2017 11:30a.m.
To: chris.smith@mycompany.com
Subject: FW: Wire Transfer

FYI, this needs to get processed today. I checked with (insert name here) to get your help processing it along. I will assume we take care of any vendor forms after the fact. I can send an email directly to (insert name here) or let you drive from here. Let me know.

From: Treasurer@mycompany.com
Sent: Wednesday, June 11, 2017 9:59a.m.
To: chris.smith@mycompany.com
Subject: FW: Wire Transfer

Process a wire of $73,508.32 to the attached account information. Code it to admin expense. Let me know when this has been completed.

Thanks.

----------Forwarded message----------

From: CEO@rnycompany.com
Sent: Wednesday, June 11, 2017 6:45a.m.
To: Treasurer@mycompany.com
Subject: Wire Transfer

Insert name (Treasurer),

Per our conversation, I have attached the wiring instructions for the wire. Let me know when done.

Thanks. Insert name, (CEO)

If you receive an email such as this:

- Contact the sender by an alternative method to validate the instructions
- Follow your authentication procedures
- Validate that correspondence is legitimate
- Employ dual controls prior to making payment changes or processing payments

Look at the spelling of the words and names carefully

CEO@mycompany.com

CEO@rnycompany.com

Business Email Compromise

Vendor Email

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HealthCare Specialty Company - $50MM Annual Revenue - Southeast regional coverage

Sequence of Events:

- Company receives email messages from the "sales person" of their vendor
- Message indicates the vendor is updating their accounts receivable system and changing bank account information
- Company replies to email as well as calls the phone number listed in the email provided for the sales person
- Phone number did not belong to the sales person
- Email address did not belong to the sales person
- Company changed beneficiary account information in AP system
- Six figure payment sent to new beneficiary account
- Vendor notified company of non-receipt of outstanding bill
- Company realized prior emails and phone call was not to the vendor

From: Chris Treasurer [mailto:chris_treasurer@lrxl.cc]
Sent: Monday, March 21, 2016 10:30a.m.
To: Joe@mycompany.com
Subject: Updated Banking Information

Attention: Accounts Payable – Updated Banking Information

Joe,

We have recently completed an update to our Accounts Receivable processing. As such, please remit all payables to our updated account beginning today.

Bank: ABC123Bank

Account Number: 123456789012
Routing Number: 987654321

Email all payment confirmations to chris_treasurer@lrxl.cc

Can you email me when this change is complete?

Thank You
Chris Treasurer,
Treasurer, Other Company
212.555.1212

Impacts:

- Company changed account information in AP system without appropriate verification
- Six figure payment sent to fraudulent beneficiary account
- Vendor notified company of non receipt of outstanding bill
- Company realized emails and phone call were with imposter posing as the vendor

Business Email Compromise

Payroll Files Targeted

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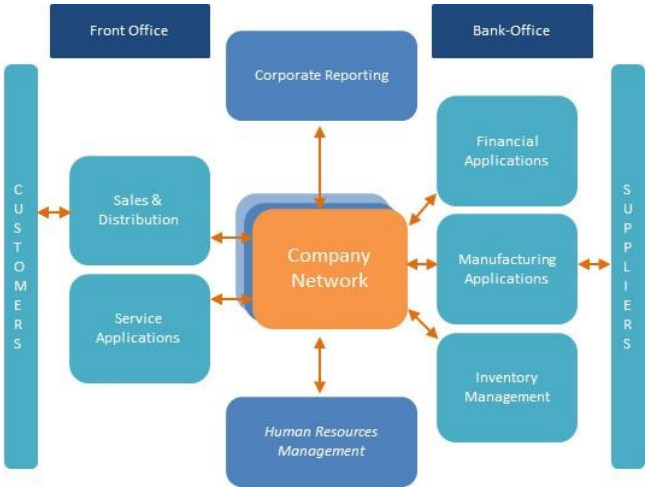
University - 5,000 + Students and Faculty - Southwest US

- Attackers sent phishing emails to employees of the university announcing benefits enrollment
- Attackers created a site which looked similar to university's prior year benefits research page
  - Site captured employee's Single Sign-on (SSO) ID and Password
- Attackers then logged-in to the university system
  - Determined which applications and functions were linked to the IDs that were harvested
  - Attacker able to explore the infrastructure and found access to the Payroll Platform
- Updated employee payroll account for Direct Deposit



Impacts

- Multiple employees did not receive their pay on Friday as funds were redirected to attackers accounts
- Payroll department conducted research on Monday and Tuesday
- Checks were presented to employees until employee payroll accounts could be restored
- ACH recall transactions were met with funds already removed from attackers' accounts
- University estimated loss plus research expense to be ~$70,000
- Employees needed to be issued new IDs and have access restored to university applications

Why Email Fraud Works

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Messages Appear Highly Credible To User

- ✓ Well researched using social media
- ✓ Messages exploit the natural human tendency to trust and be helpful
- ✓ Emails use the right names & correct titles
- ✓ User similar domain names
- ✓ Custom-written to avoid spam filters

Appear From Senior Executive And Request Immediate Action

- ✓ Almost always under threshold required for a second signature
- ✓ Sometimes sent when key executive is on vacation- making an external or unknown domain name seem legitimate
- ✓ Sent when there is a company transition in the news, so taking advantage of current state of change

Targeted Company Lacks Essential Authentication And Controls

- ✓ Such as signature or sign-off on key controls
- ✓ Recipient ignores key procedures for fear of raising the ire of the CEO or CFO
- ✓ Employees are duped into thinking that checking on transaction might slow things down and derail a key deal

Organizations May Lack Essential Security Safeguards To Protect

- ✓ Controls such as endpoint security
- ✓ Data Encryption
- ✓ Email gateway technology to identify suspicious email

Security Best Practices

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Best Practices for Business Email Compromise

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Never change beneficiary account information based solely on an email

Validate using other communication channels

Be alert to sudden changes in business practices

Develop procedures for non-standard requests

- Pick up the phone and call the individual – using the company directory or vendor information Another option is to have another associate create a new email from another PC to validate the instruction
- Validate instructions by having the sender provide the old payment instructions to include beneficiary and account along with the new payment instruction and account
- Ask for the number of an old invoice and the dollar amount
- Ask for the sender to send the new payment instructions from the company letterhead and validate the letterhead

Contact your vendors and partners -- are your payments up-to date?

Payment Fraud

Key elements

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Best Practice

Simple, practical business controls significantly reduce risk:

- ✓ Use a bookmark to access the bank's site
- ✓ Hover over a link before clicking on it to reveal the true address to which you will be sent
- ✓ Avoid opening attachments that you were not expecting
- ✓ Be wary of pop-up messages asking you to update your computer
- ✓ Spot behaviour anomalies in the payment requests received via email
- ✓ Always be suspicious of communication from people or organizations that you don't recognize
- ✓ Be particularly wary of emails that warn of some dire consequence unless you take action
- ✓ Scrutinize emails: Carefully review email headers, domain names in the "from" field of the email, and the "reply-to" field of emails

Enterprise Phishing Susceptibility Report
An Inside Look at Employee Behavior Pertaining to Highly-Effective Phishing Scenarios

Lines of Defense for Ransomware

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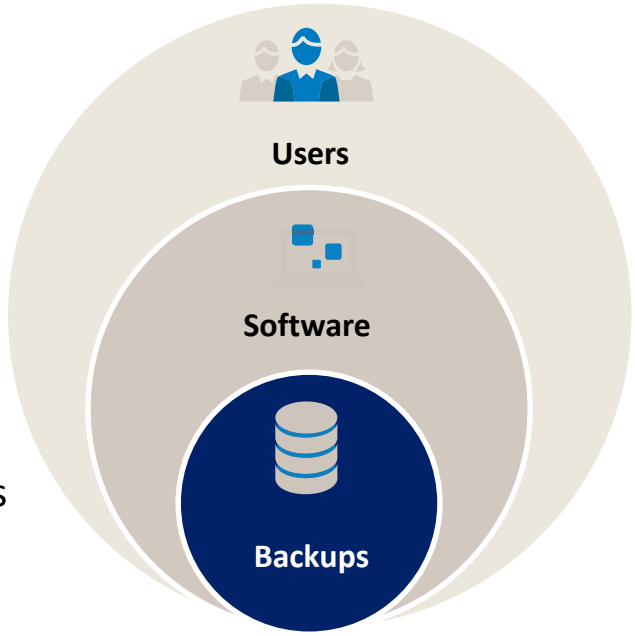
First Line of Defense: Users

- Security Awareness Training
- Simulated Phishing Attacks

Second Line of Defense: Software

- Firewall
- Antispam/anti-phishing
- Up-to-date antivirus software or advanced endpoint protection
- Software restriction policies on your network to prevent unauthorized applications from running
- Disciplined patch procedures



Third Line of Defense: Backups

- Backup Solution – software/hardware or both
- Ensure all data is backed up
- Ensure data is safe, redundant and accessible once backed up
- Regularly test the recovery function of backup/restore procedures

Mobile & Wireless

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Attacks against mobile devices and wireless networks continue to rise as employees and consumers use mobile devices and connect to public Wi-Fi

Enable device access security

Enable a passcode, fingerprint or other authentication feature on all mobile devices

Keep OS & apps updated

Recent mobile threats targeted devices with unpatched mobile OS & apps. Apply updates as soon as they are available

Use official app stores

Apps available via untrusted app stores have a higher risk of malware. Only download from official mobile device vendor and corporate app stores

Turn off Wi-Fi & Bluetooth if not in use

Unless needed for a specific purpose, limit access to your location – rogue apps may track you – disable image geo-tagging

Practice mobile & wireless security daily to help protect your information and assets

Global wireless carrier networks are more secure than public Wi-Fi. Connect through your carrier when available.

Connect through a wireless carrier

When public Wi-Fi is only option, verify name of site Wi-Fi network with staff or posted signage before connecting

Verify Wi-Fi name before connecting

When connecting a business device, always use your corporate VPN or other security tools to protect your data

Connect through corporate VPN

Passwords

When creating passwords:

- Be creative, complex and meaningful. Find inspiration in personal memories.
- Make your password methodology a secret.
- Start with a phrase or sentence and transform it.
- String a series of random words together to create a strong password.

Do any of your passwords:

- Honor your first or current pet by including their name?
- Follow any common pattern on your keyboard?
- Make it easy for your partner or family to remember?
- Change only one character across different uses?
- Something related to your favorite sports team?

If you answered **YES** to any of the questions above, you should revise your password methodology

2018 Top Passwords:

1. 123456
2. Password
3. 123456789
4. 12345678
5. 12345
6. 111111
7. 1234567
8. Sunshine
9. Qwerty
10. iloveyou

https://www.welivesecurity.com/2018/12/17/most-popular-passwords-2018-revealed

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