



Cybersecurity and Social Engineering

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CYSE 2015





What is Social Engineering?

- Social Engineering is a type of cyberattack that employs psychology to manipulate someone into doing something that compromises the security of the victim or the victim's network.
- Also referred to as the hacking of humans
- Social Engineering attacks have many endgames.
 - Want the victim to reveal their sensitive information.
 - Trick the victim to download malware.
 - Control the victim's device
 - Could be part of a larger cyber attack



What kind of cyberattacks use Social Engineering?

- Phishing
 - A message from an attacker pretending to be a trusted party or authority figure
 - Bulk phishing - generic message hoping to trick a few individuals out of thousands or even millions of targets
 - Spear phishing - typically a more personalized message hoping to trick a specific person of high value
- Baiting
 - Aims to convince the victim to give up information by offering something of value
 - Nigerian Prince Scam - A foreign royal needs X dollars to reach safety and will repay you back tenfold.
 - Free software with hidden malware - download pirated movies, games, or music while also downloading a virus
 - USB Drop - attackers will drop a malware-laced USB drive in a public location hoping someone finds it and plugs it in



What kind of cyberattacks use Social Engineering?



Tailgating

Following and waiting for someone to leave a signed-in device unattended so the attacker can access it.



Quid Pro Quo

The attacker offers a prize or reward in exchange for private information.



Watering Hole

Attacks add malicious code into an actual trusted website



The Psychology of Social Engineering

- Pretending to be a trusted entity
 - The attacker will present themselves to be a legitimate brand, company, or person that the victim will trust
- Pretending to be a figure of authority
 - The attacker will pose as a government agent or a member of law enforcement to intimidate the victim into complying.



The Psychology of Social Engineering

- Creating a sense of urgency
 - The attacker will suggest there is an emergency, and the victim needs to give up information to fix everything.
- Preying on the victim's greed or helpful nature
 - The attacker will create a scenario with a positive outcome so that the victim overlooks what is going on.



Examples

Dear Sir,

I am prince [REDACTED] from Nigeria. Your help would be very appreciated. I want to transfer all of my fortune outside if Nigeria due to a frozen account, If you could be so kind and transfer small sum of 3 500 USD to my account, I would be able to unfreeze my account and transfer my money outside of Nigeria. To repay your kindness, I will send 1 000 000 USD to your account.

Please contact me to proceed

Prince [REDACTED]

Linked in



UPGRADE SUBSCRIBER

Customer Support

Dear LINKEDIN Customer,

We're currently upgrading our systems to bring enhanced features to your LINKEDIN Account experience. As a result, your account is temporarily unavailable.

Please Note: this upgrade your LINKEDIN Account to our new system.

Note: FAIL TO UPGRADE YOUR ACCOUNT, IT WILL BE AUTOMATICALLY CLOSED.

After this step, you are permitted to access your LINKEDIN Account

We've upgraded your protection on LINKEDIN and will continue to enhance your account security. To help us verify your account on our servers, please complete the following information requested . (1) E-mail : _____ (2) Password: _____ (3) Confirm Password: _____ After completing your account verification, your LINKEDIN account will not be interrupted and it will continue working as normal.

Sincerely,

Customer Service Team.
Copyright © 2015 LINKEDIN.

Reply to UPGRADE



What does **1 terabyte** of storage really mean?

60 piles of typed paper stacked as tall as the Eiffel Tower.

Harry Potter

All **127** hours of the Harry Potter audiobooks saved in MP3 format **134 times**.

1,462 feature-length movies in DivX format.



1% of total Internet traffic in 1993.

20 high definition Blu-ray films.



Google

The amount of data processed by Google every **4.32 seconds**.

Recent Attacks Using Social Engineering

- Google/Facebook Spear Phishing
 - Lithuanian-based criminal group stole over \$100 million from the two tech giants
 - 2013-2015
 - Pretended to be a legitimate manufacturer that worked with the companies and sent employees invoices that went to their fraudulent bank accounts
- Sony Breach
 - Attackers used LinkedIn to gather information on employees, then sent emails pretending to be employees' colleagues.
 - Stole over 100 terabytes of data



Defending Against Social Engineering

- Training
 - It is important to train people on the tactics and warning signs of a social engineering attack
 - An example phishing email could be sent out to test the effectiveness of training
- Cybersecurity Methods
 - Zero Trust Policy
 - Spam filters
 - Firewalls and Antivirus
 - Multi Factor Authentication



Conclusion



Social Engineering is a simple yet effective cyberattack method that uses psychology and human behavior to trick people in many ways.



can be defended through training and cybersecurity measures.



References

- Daly, A. (2021, September 1). 7 of the Biggest Phishing Scams of All Time. Inky. <https://www.inky.com/en/blog/7-of-the-biggest-phishing-scams-of-all-time-2021>
- Grigutytė, M., & Grigutytė, M. (2024, November 20). Nigerian Prince scam: what is it and how it works | NordVPN. NordVPN. <https://nordvpn.com/blog/nigerian-prince-scam/>
- IBM. (2024, October 1). What is social engineering? IBM. <https://www.ibm.com/topics/social-engineering>
- Rafter, D. (2024, July 30). 10 real phishing email examples. <https://us.norton.com/blog/online-scams/phishing-email-examples>
- Tessian. (2023, November 8). 15 Examples of real social engineering attacks. Tessian. <https://www.tessian.com/blog/examples-of-social-engineering-attacks/>
- What is social engineering in cybersecurity? (2024, November 1). Cisco. <https://www.cisco.com/c/en/us/products/security/what-is-social-engineering.html#~how-social-engineering-works>