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Cybersecurity Trends

2022 State of Cybersecurity

NAHEFFA
National Association of Health and Educational Facilities Finance Authorities

RICHEY MAY Technology Solutions

Presenter

Michael Nouguier, CISSP

Chief Information Security Officer

&

Director of Cybersecurity Services

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Agenda

- What is Cybersecurity
- 2022 Trends in Cybersecurity
- Anatomy of a Cyberattack
- Impacts of a Breach
- Training
- Best Practices
- Q&A

What is Cybersecurity?

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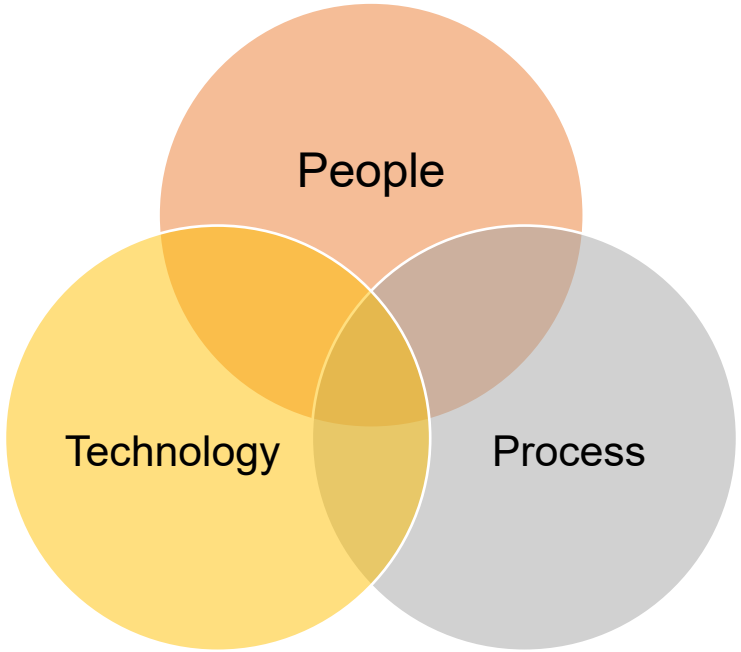
Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks by using a combination of People, Process and Technology together in an effort to ensure the Confidentiality, Integrity and Availability of information assets that allow your business to function.



Cybersecurity Trends

2022 Cybersecurity Trends

Ransomware

Popular because its effective

BEC

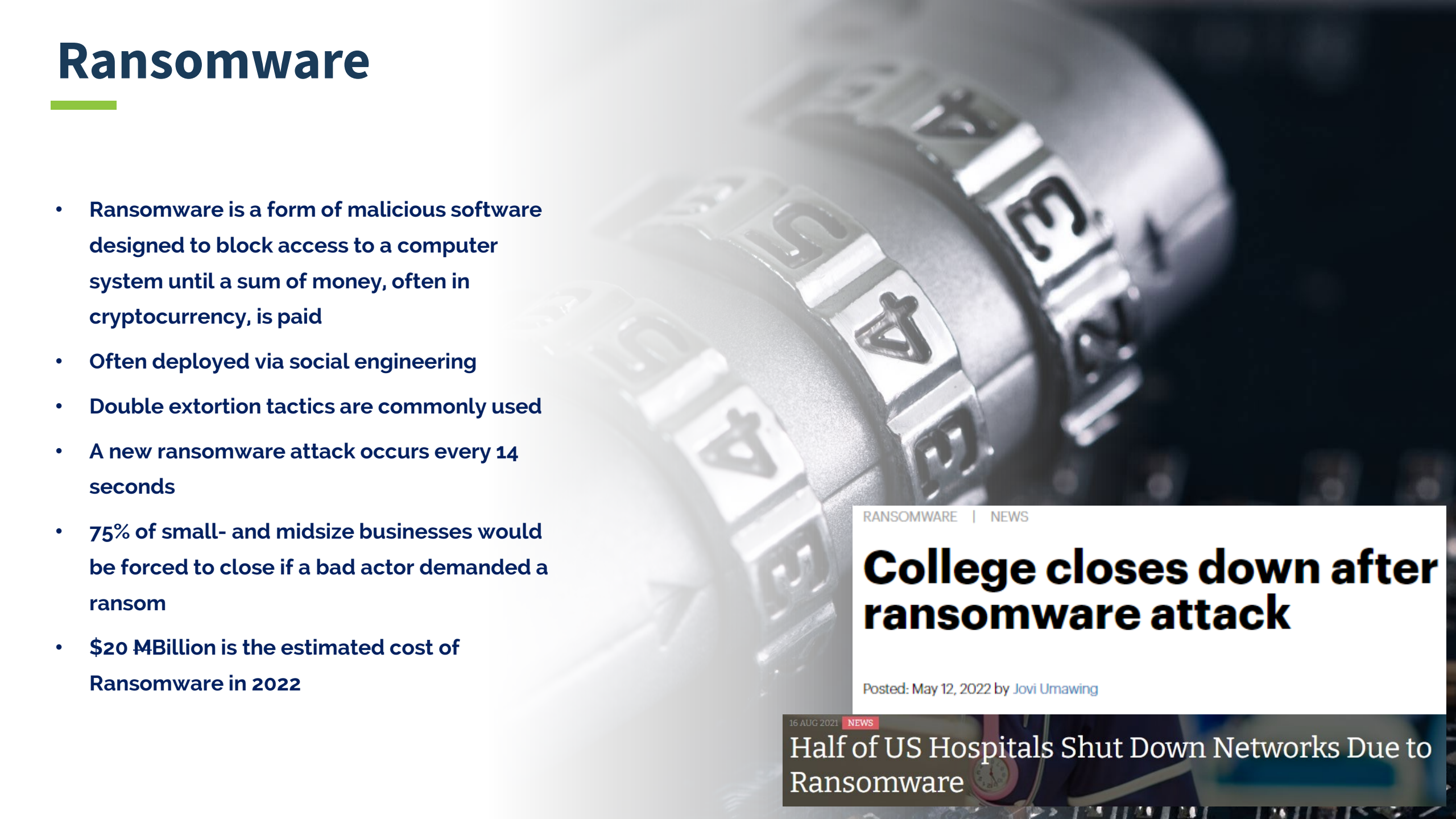
Business. Email. Compromise.

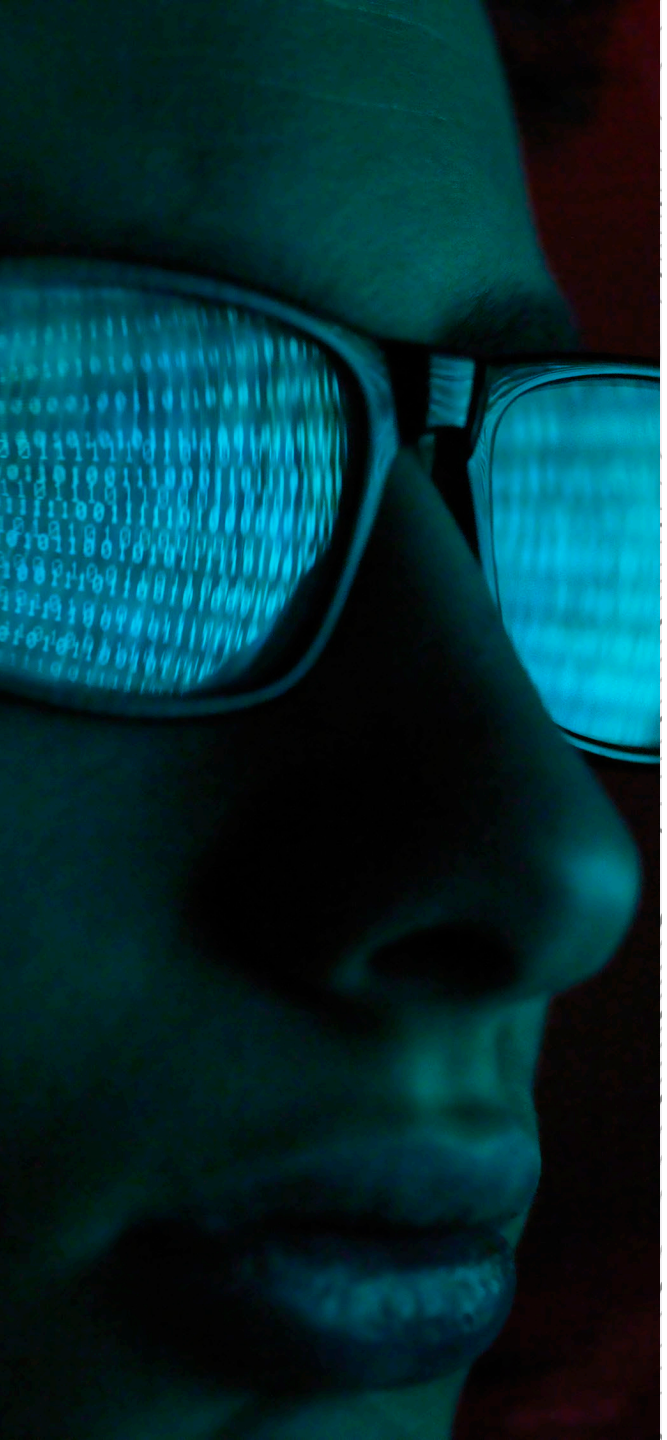
Cyber Insurance

The new Life Insurance

Ransomware

- Ransomware is a form of malicious software designed to block access to a computer system until a sum of money, often in cryptocurrency, is paid
- Often deployed via social engineering
- Double extortion tactics are commonly used
- A new ransomware attack occurs every 14 seconds
- 75% of small- and midsize businesses would be forced to close if a bad actor demanded a ransom
- $20 ~~M~~Billion is the estimated cost of Ransomware in 2022





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Business Email Compromise (BEC)

What is it?

- Business email compromise is a type of email cyber crime scam in which an attacker targets a business to defraud the company
- Typically, through the use of fake invoicing
- Social Engineering (phishing) is the common attack vector

Protections

- Security Awareness Training
- Consistent Phishing Tests
- Thoughtful Policies and Procedures
- Email/Identity Technologies
- Constant Vigilance

BEC Explained

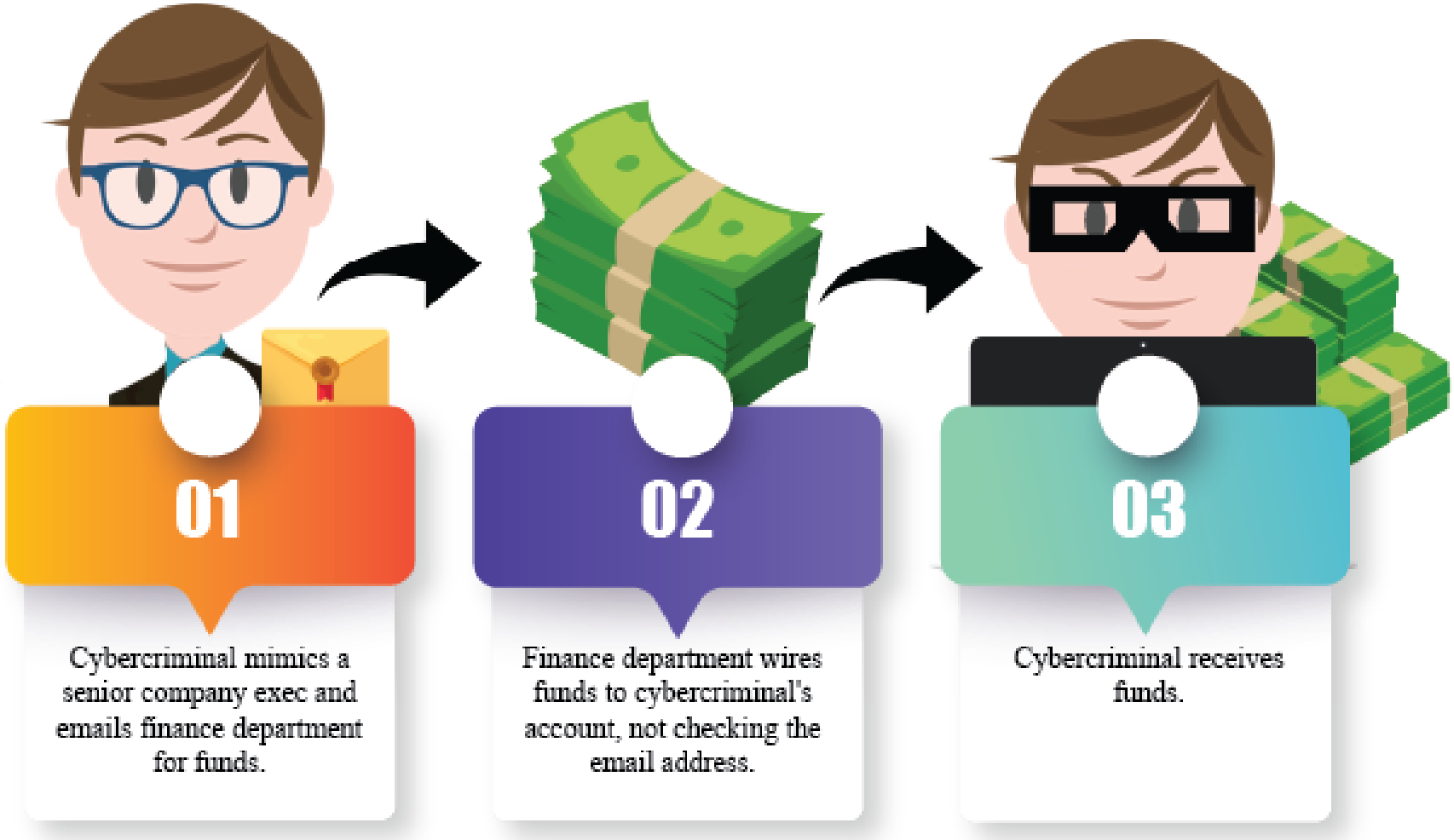

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Photo Credit https://Cybersecurityasean.com

Cyber Insurance

01 Increased Rates

Rates increased 110% in Q1 2022 – Marsh

Deductibles are on the rise

02 Denial

Cyber Insurance can be denied for lack of security maturity.

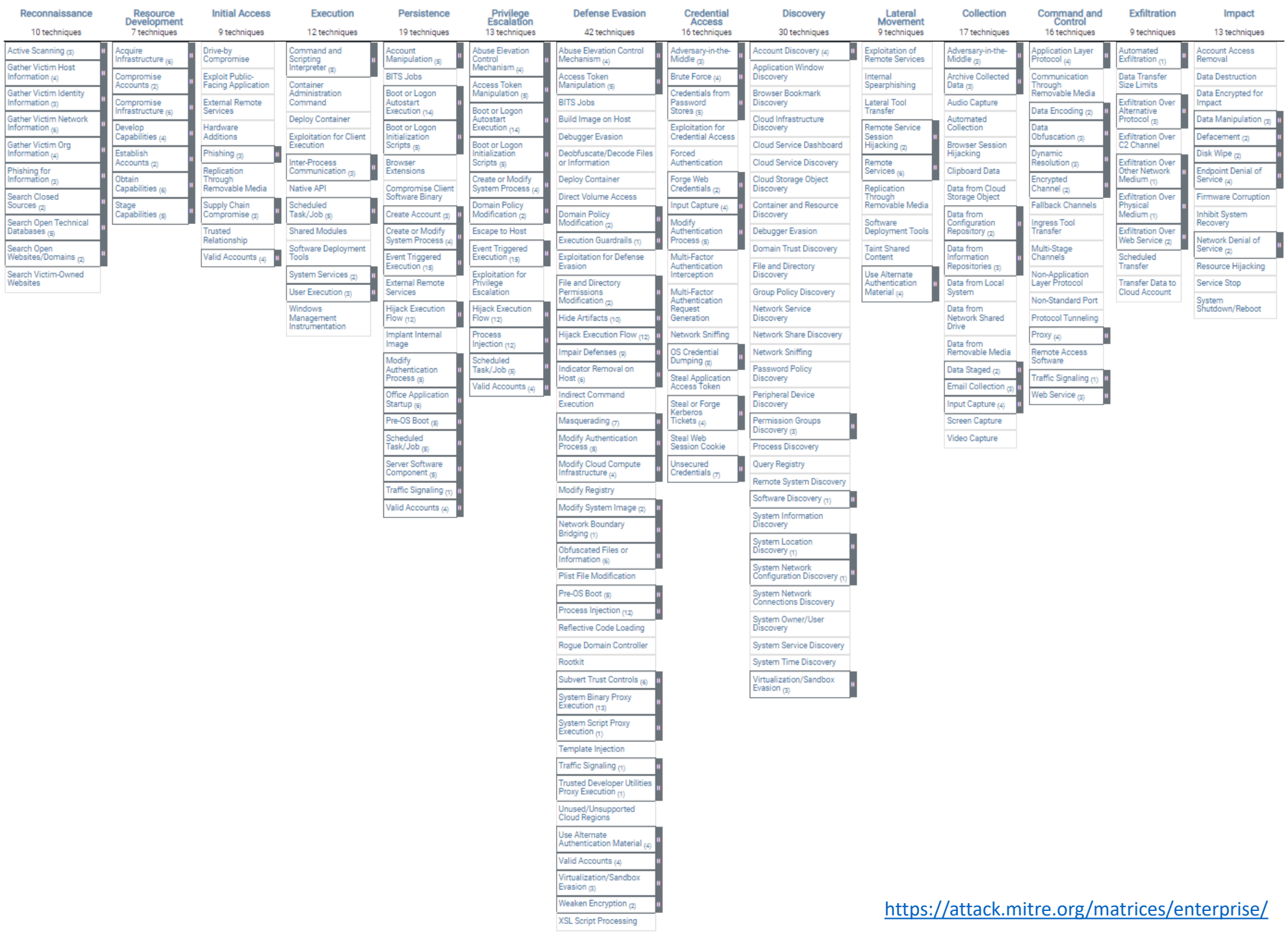
Insurance Underwriters are requiring Risk Self Assessments

03 Restrictive Coverage

Detail Review Policy, Exclusions, and Amendments carefully. Ransomware is often an extra rider.

Anatomy of a Cyberattack

Anatomy of a Cyberattack



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https://attack.mitre.org/matrices/enterprise/

Anatomy of a Cyberattack (Simplified)

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Impacts of a Breach

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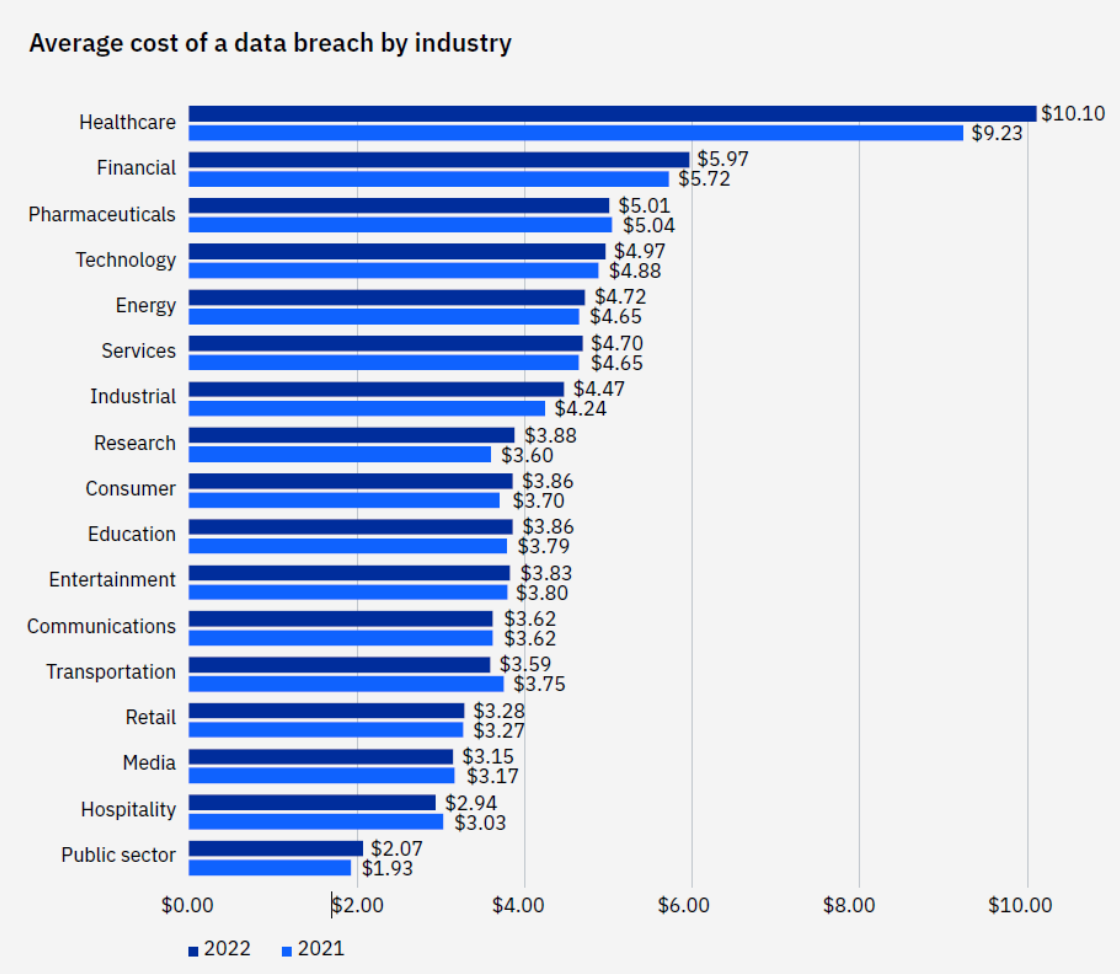
Impacts of a Cyberattack

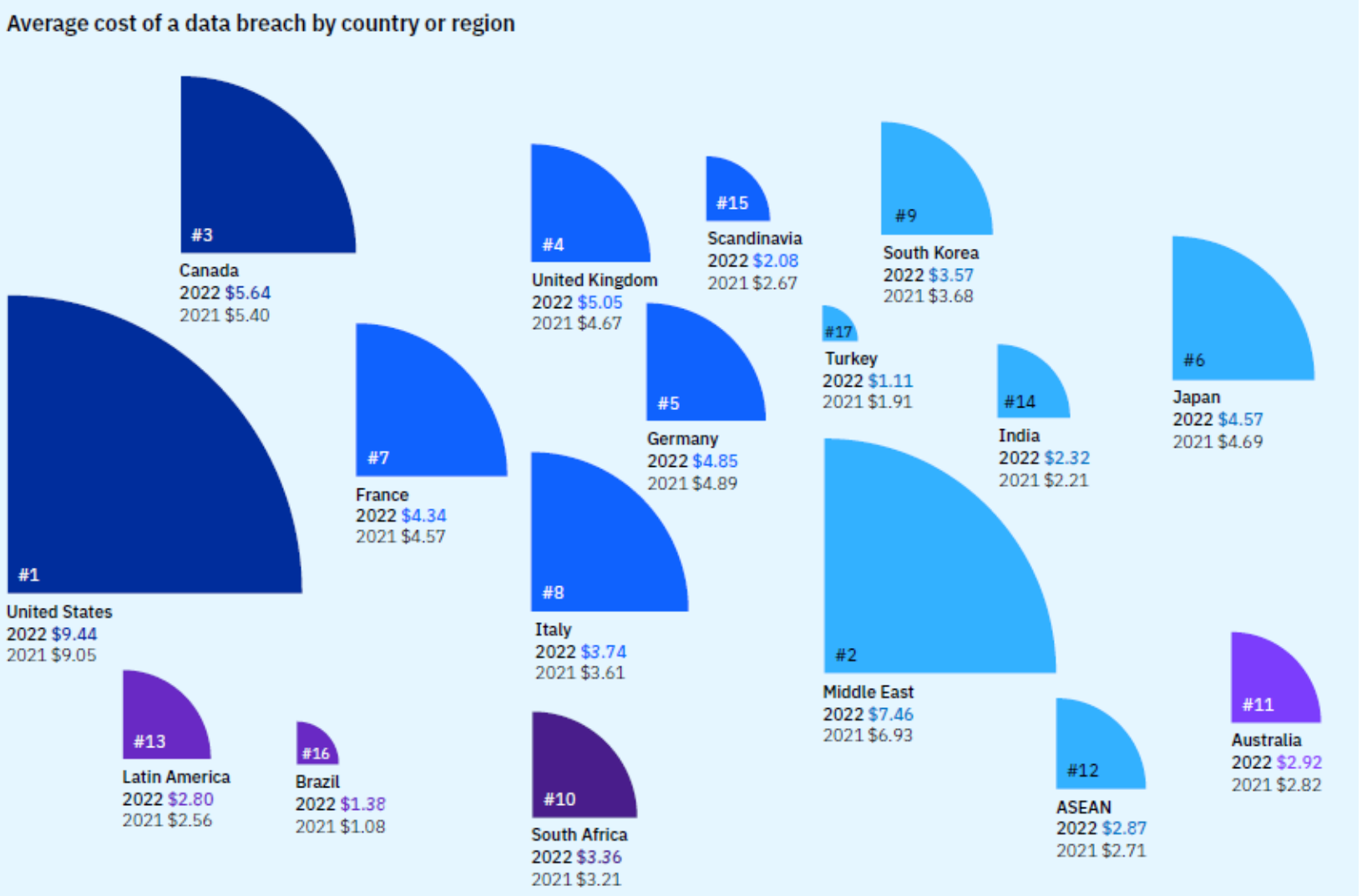
- Reputational Damage
- Business Interruption
- Legal and Regulatory Costs
- Technical Recovery Costs

Breach by Industry



Credit: IBM Cost of a Data Breach Report & Security Scorecard

Cost of a breach



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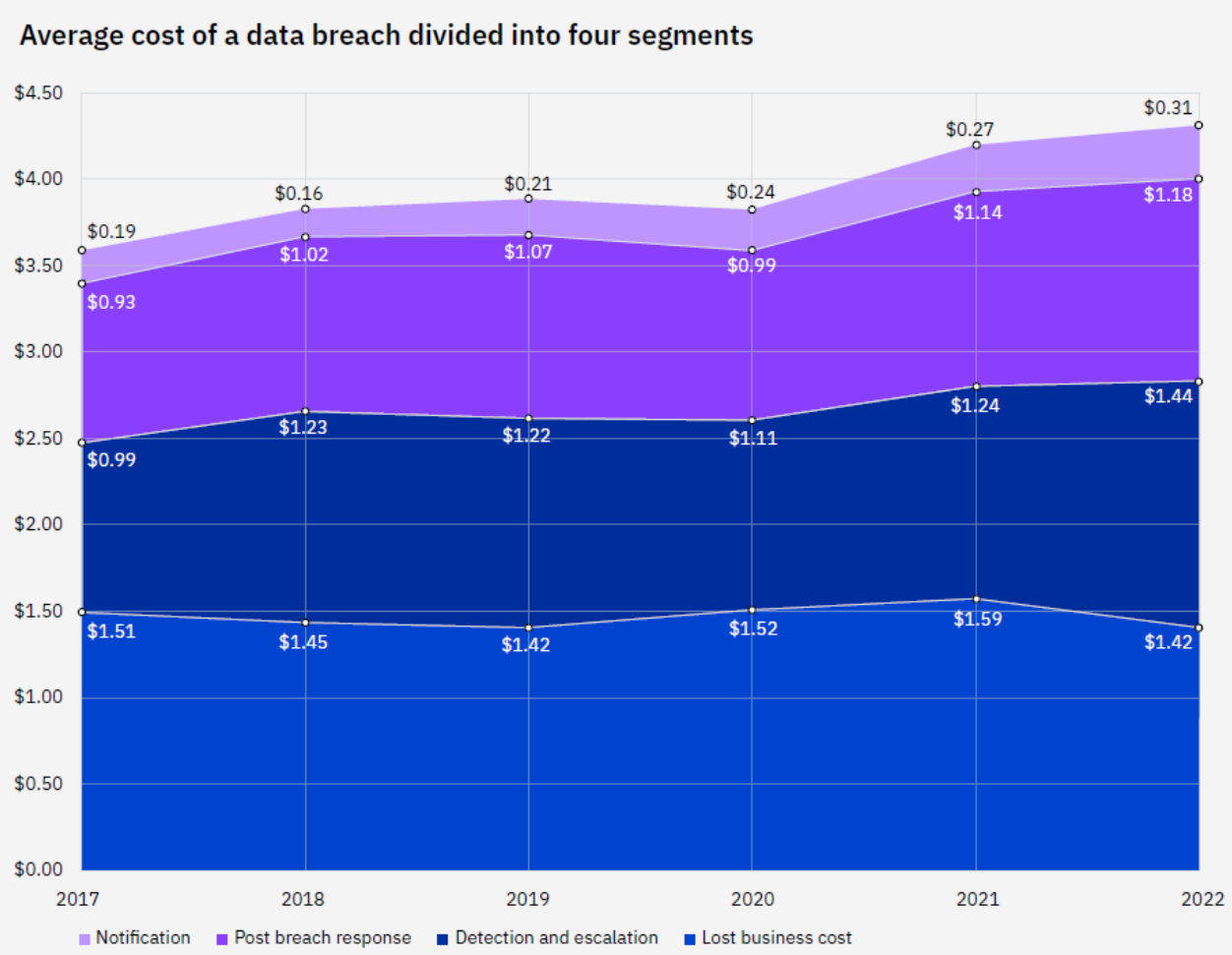
Cost per task



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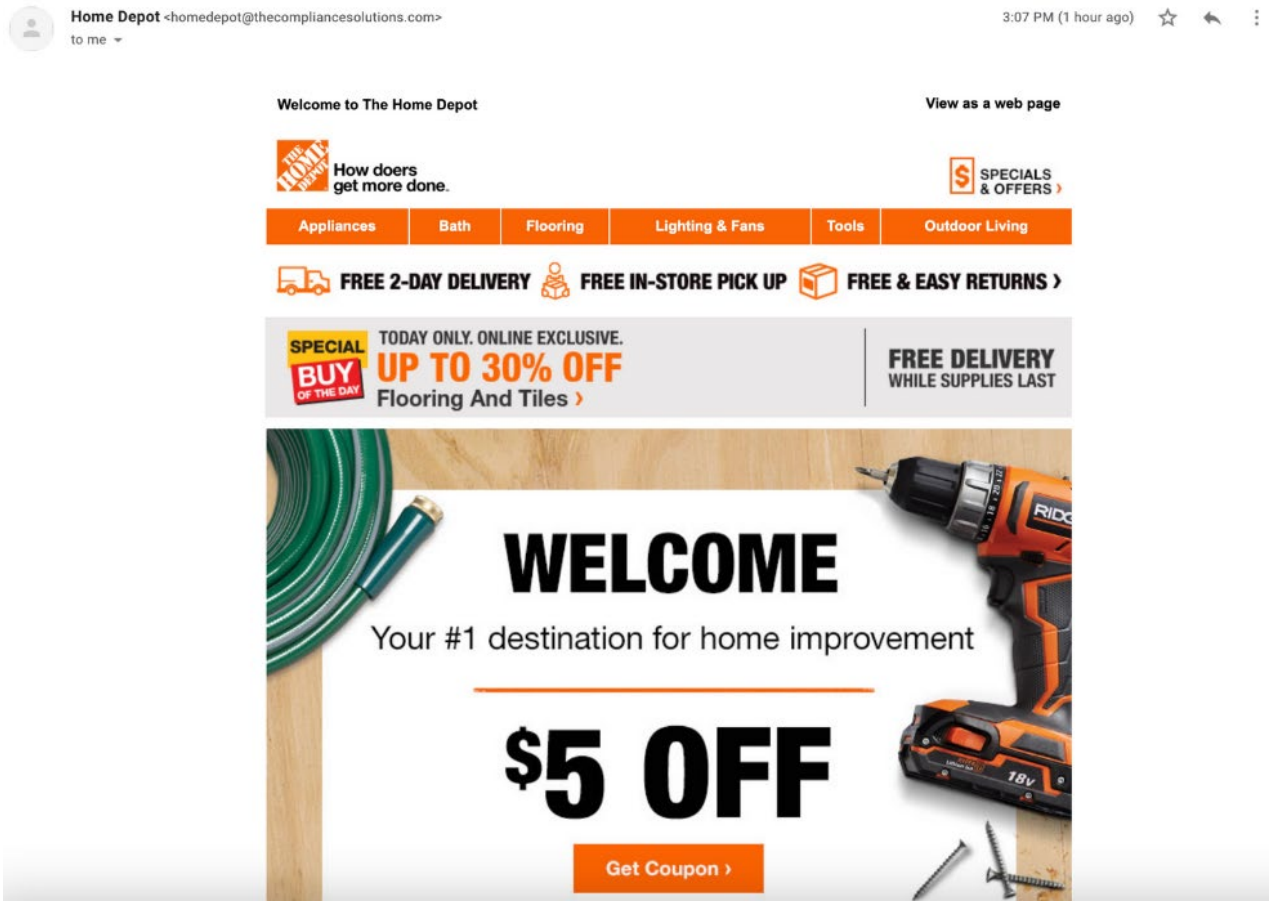
Phishing Examples

Phishing Email Example



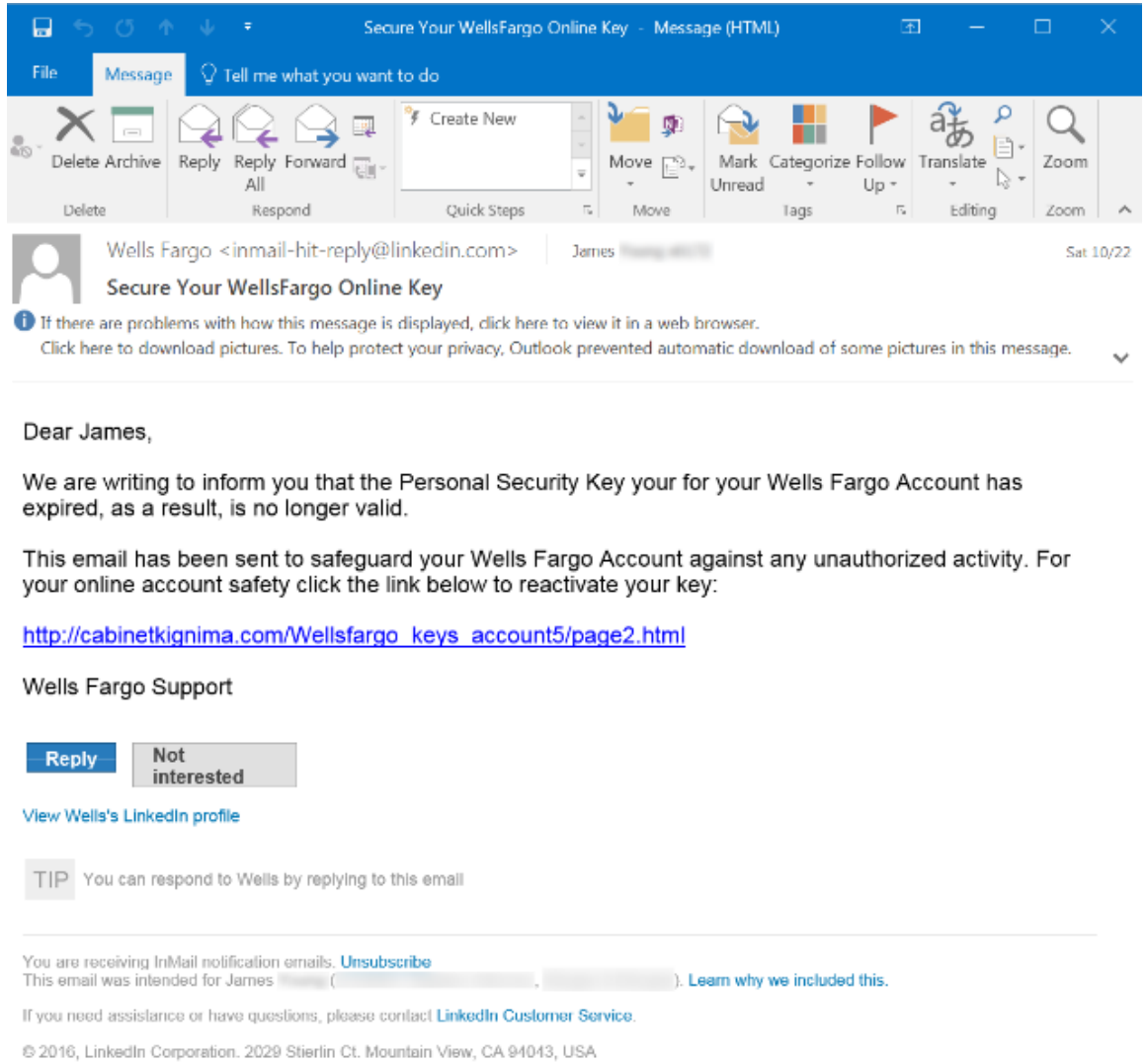


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Photo Credit: Phishing.org

Phishing Email Example

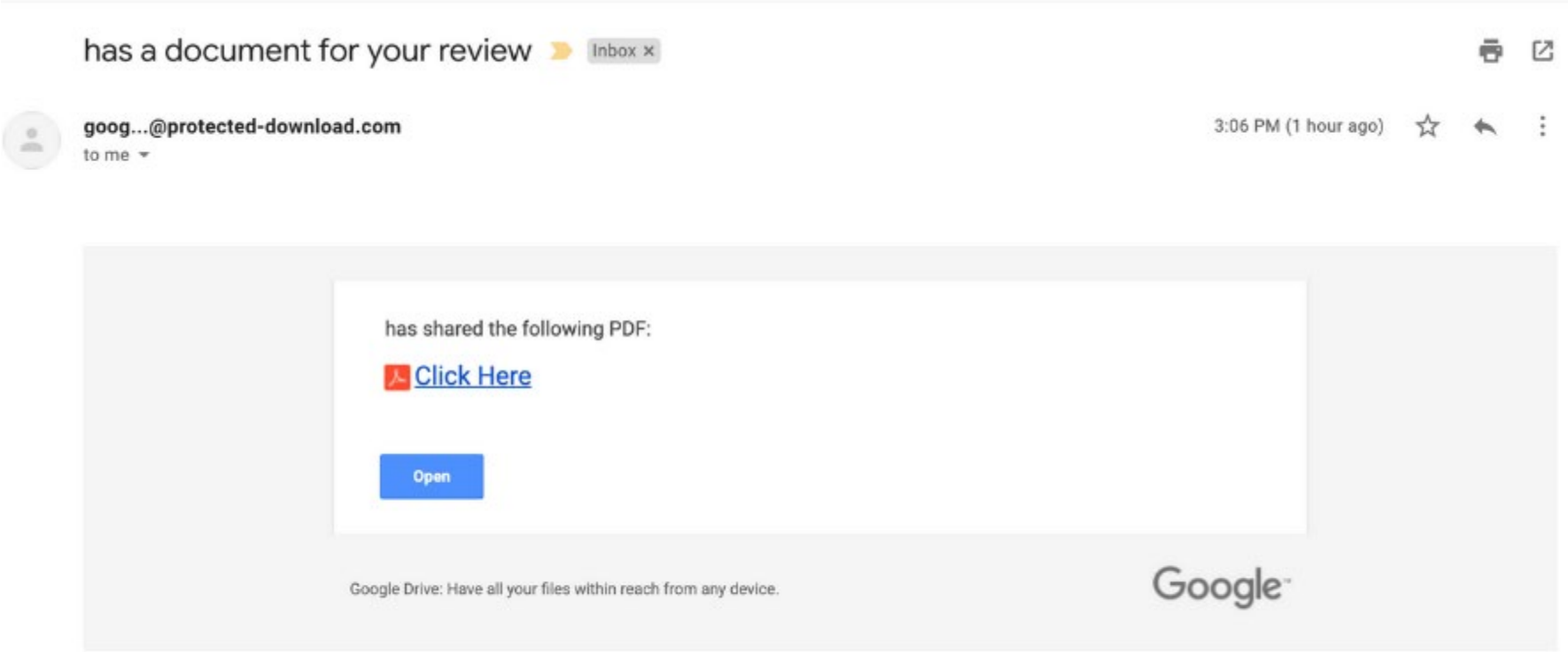

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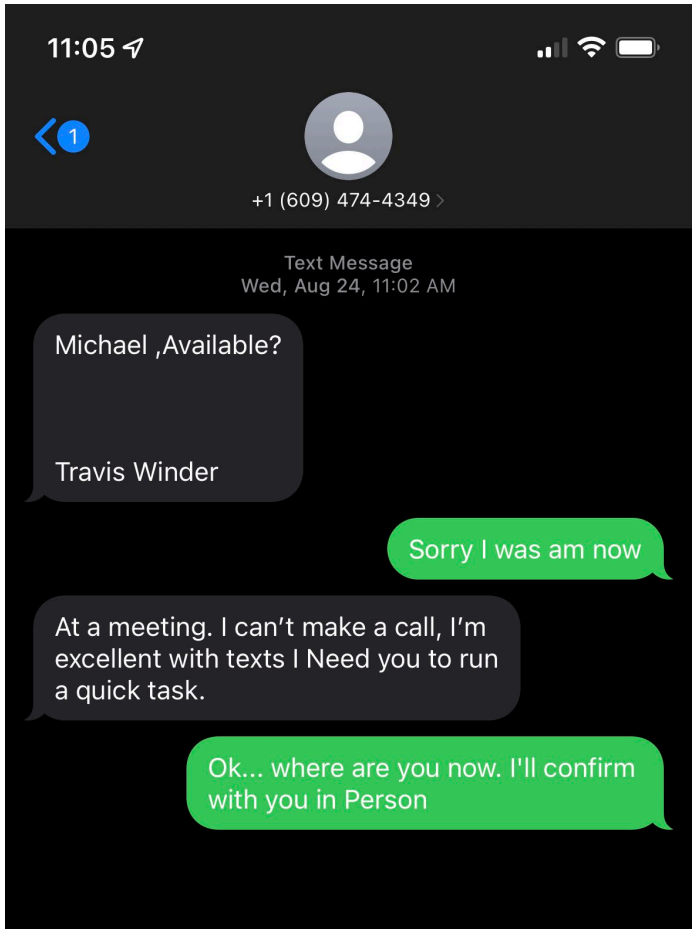
Photo Credit: Phishing.org

Phishing Example



NETFLIX

Reset your password

Hi {fname},

Let's reset your password so you can get back to watching.

RESET PASSWORD

If you did not ask to reset your password, click here to login and reset your password **immediately** to avoid unauthorized activity on your account.

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Photo Credit: Phishing.org

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Best Practices

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Define the Program

- Formalize and Document Cybersecurity Program
- Policies and Procedures
  - Acceptable Use Policy
  - Security Policy and Plan
  - Risk Management Policies and Procedures
- Leadership Buy In
- Security Steering Committee made up of Business Leaders
- Define Security Roles and Responsibilities

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Get Visibility

- You need to know what you have in order to protect it
- Document Hardware and Software
  - CMDB
  - Spiceworks & ManageEngine
- Scan and Document Vulnerabilities
- Remediate and Patch Consistently

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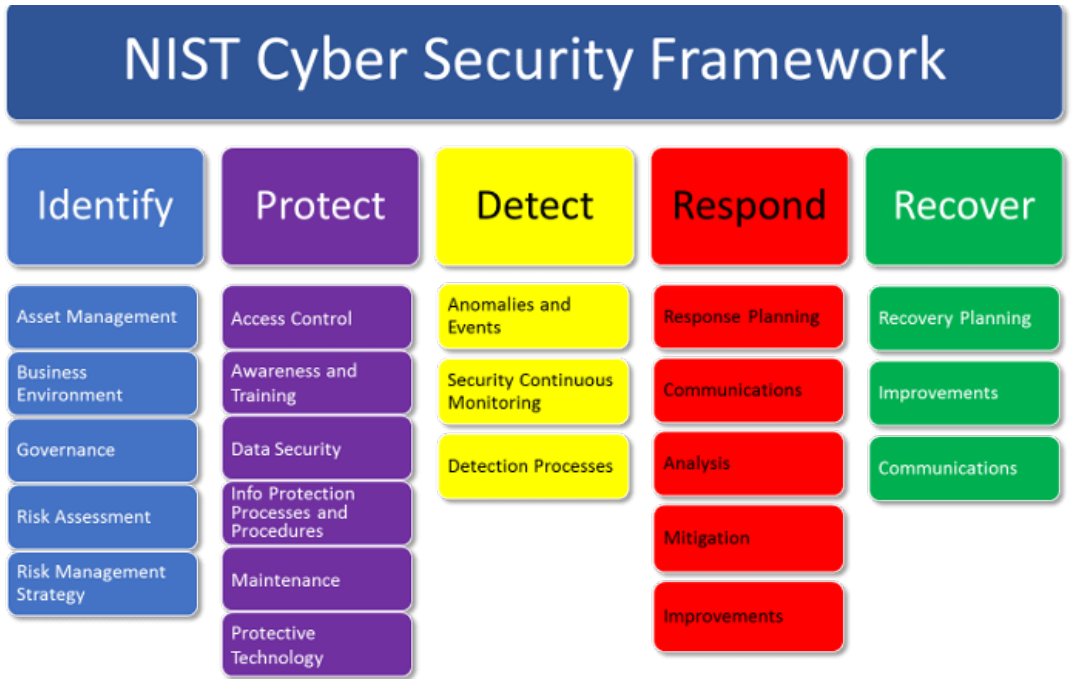
Assess

- Conduct a Maturity and Risk Self Assessment periodically
  - https://github.com/brianwifaneye/NIST-CSF
- Utilize a 3rd Party to assess your Risk and Maturity Annually



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Focus on Resiliency

- Disaster Recover
- Business Continuity
- Incident Response
- “Failing to Plan is Planning to Fail”
- Perform Table Top exercises

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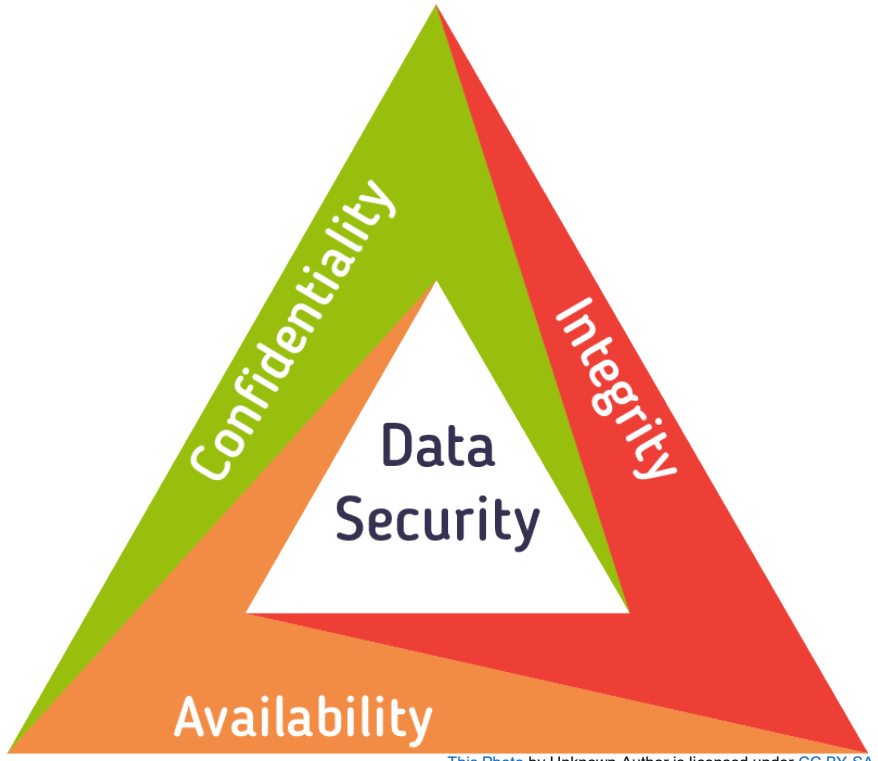
Data Security

- Data in Transit
- Data at Rest
- Data in Use
- Data Destruction
- CIA Triad



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Choose the Right Technology

- Endpoint Security/Anti-Virus
- Endpoint Detection and Response (EDR)
- Firewalls
- Logging/SIEM
- Identity and Access Management Solutions
- Vulnerability Management
- Asset Management

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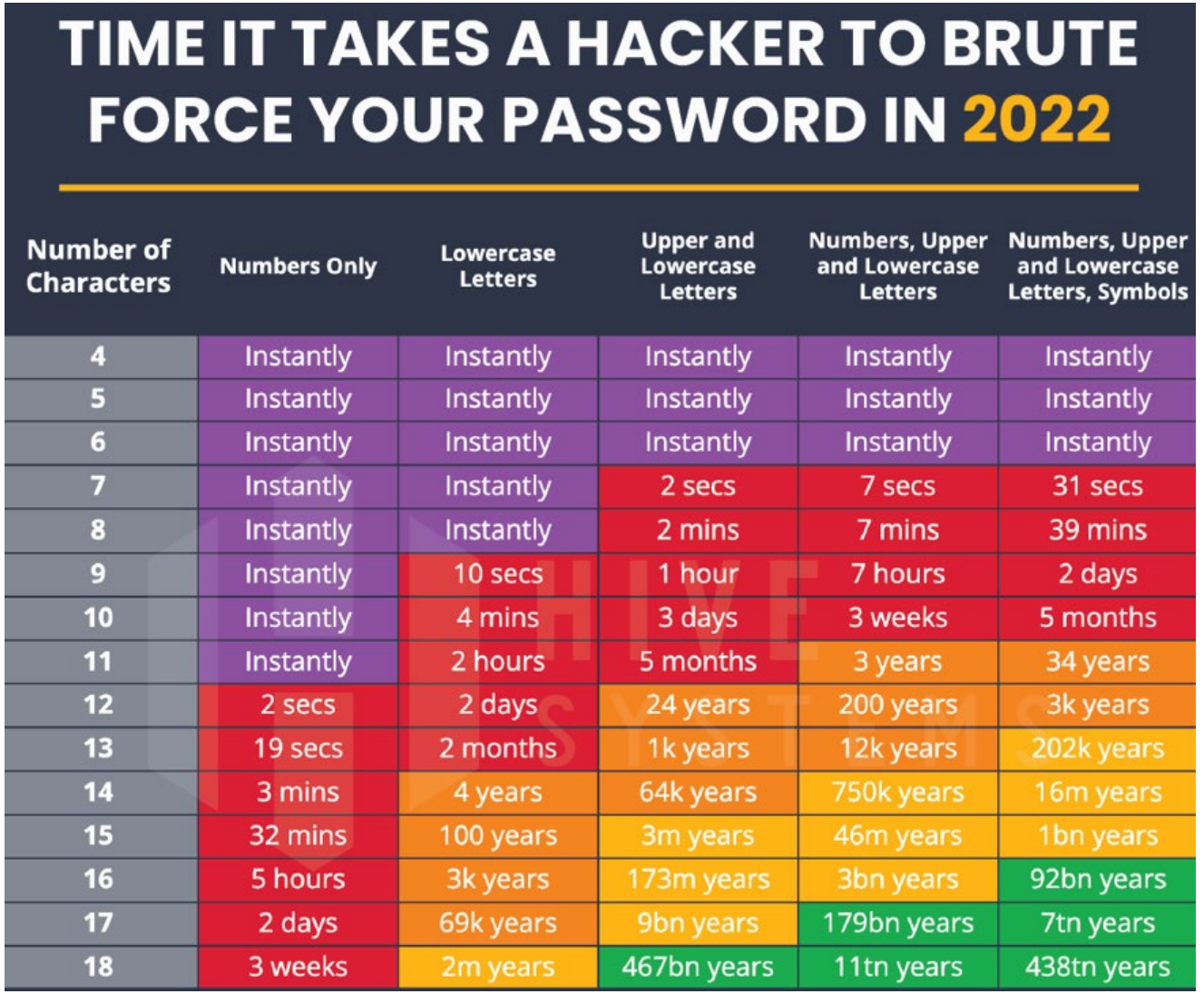
Access Control & Identity Management

- Principal of Least Privilege
  - Internal Users
  - Contractors
  - 3rd Parties
- Onboarding and Offboarding Policies and Procedures
- Multifactor Authentication is a Requirement
- Password management tools
  - LastPass
  - 1Password
  - Dashlane
- https://www.security.org/how-secure-is-my-password/
- https://haveibeenpwned.com/
- https://haveibeenpwned.com/Passwords

Password Complexity Requirements



TIME IT TAKES A HACKER TO BRUTE FORCE YOUR PASSWORD IN 2022

Number of Characters	Numbers Only	Lowercase Letters	Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters, Symbols
4	Instantly	Instantly	Instantly	Instantly	Instantly
5	Instantly	Instantly	Instantly	Instantly	Instantly
6	Instantly	Instantly	Instantly	Instantly	Instantly
7	Instantly	Instantly	2 secs	7 secs	31 secs
8	Instantly	Instantly	2 mins	7 mins	39 mins
9	Instantly	10 secs	1 hour	7 hours	2 days
10	Instantly	4 mins	3 days	3 weeks	5 months
11	Instantly	2 hours	5 months	3 years	34 years
12	2 secs	2 days	24 years	200 years	3k years
13	19 secs	2 months	1k years	12k years	202k years
14	3 mins	4 years	64k years	750k years	16m years
15	32 mins	100 years	3m years	46m years	1bn years
16	5 hours	3k years	173m years	3bn years	92bn years
17	2 days	69k years	9bn years	179bn years	7tn years
18	3 weeks	2m years	467bn years	11tn years	438tn years

Photo Credit: Hive Systems – hive.io

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Educate | Train | Learn

- Utilize Automated Security Awareness Training
- Educate and Market Security within the organization
  - Dialogue with organization to answer questions
- Validate the effectiveness of your training through phishing simulations
- Tools:
  - KnowBe4 -
    - https://www.knowbe4.com/free-it-security-tools
    - https://www.phishing.org/
  - Microsoft (Included in some licensing)

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Cheat Sheet Links

- Utilize the resources available to you below

- https://staysafeonline.org/
  - October is Cybersecurity Awareness Month - https://staysafeonline.org/programs/cybersecurity-awareness-month/
- https://www.ic3.gov/
- https://www.cisa.gov/uscert
- https://www.nist.gov/cyberframework
- https://www.cisecurity.org/controls/v8
- https://www.sans.org/information-security-policy/

Key Take Aways

- Cyberattacks are on the rise and the risk of a data breach is ever increasing
- Focus on Maturing your Cybersecurity Program through strategic planning and implementation of the right security controls
- Stay vigilant for social engineering attacks
- Cybersecurity is a Journey, Not a destination

Q&A

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Michael Nouguier

Chief Information Security Officer & Director of Cybersecurity Services

D 720.673.9338 | **T** 303.721.6131 | **C** 303.641.7295

E mnouguier@richeymay.com | www.richeymay.com

9780 S. Meridian Blvd., Suite 500 | Englewood, CO 80112

https://richeymay.com/technology/