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Cybersecurity Risks in a Post COVID-19 World

February 22, 2023

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My world in a nutshell!

Cybersecurity Industry Trends & Statistics

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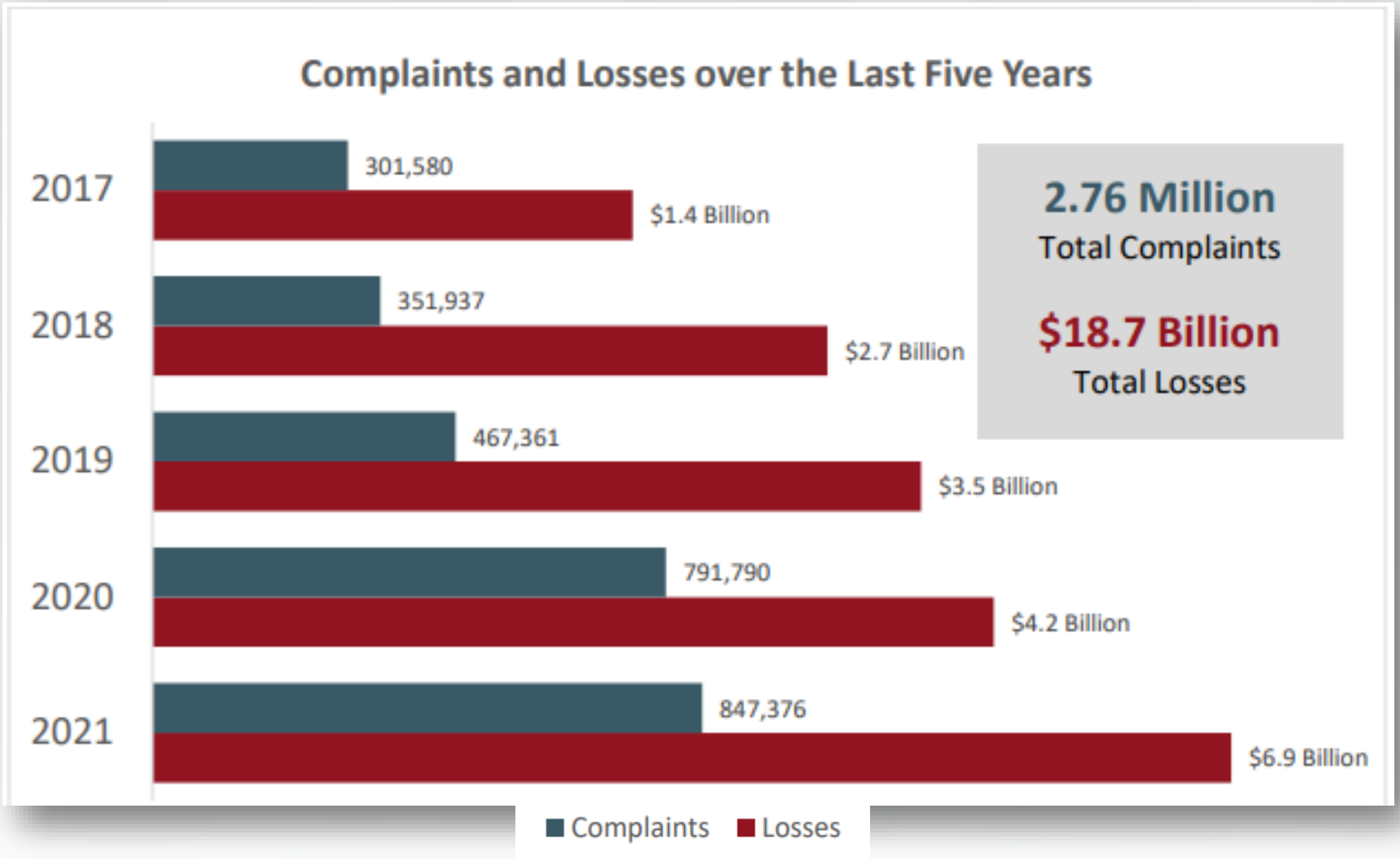
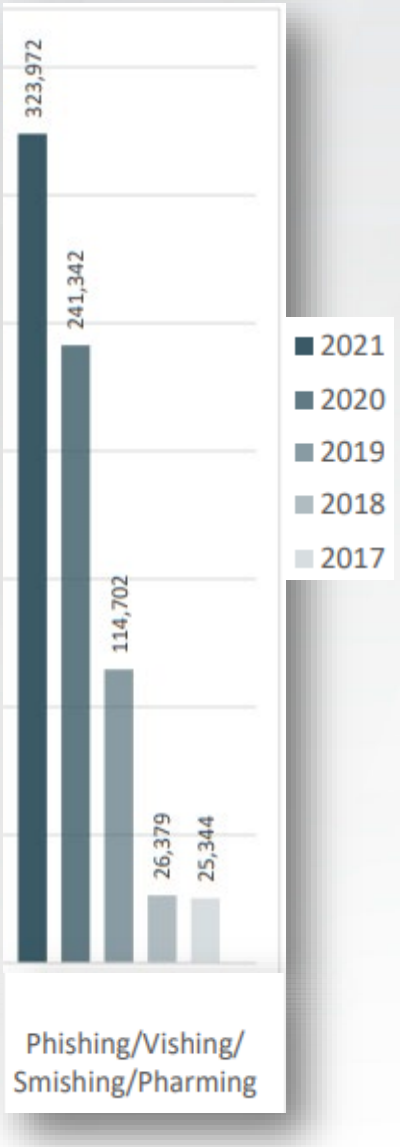
2022 Verizon Data Breach Investigation (DBI) Report

- **Ransomware-related breaches increased by 13%,** *(more than the past five years combined)*
- Nearly 50% of all system intrusion *incidents* involved ransomware last year
  - Ransomware was present in almost 70% of malware breaches in the past year
- **Supply chain was involved in 62% of incidents** this year. *Compromising the right partner is a force multiplier for threat actors*
- **82% of the breaches** reported involved the use of stolen credentials, phishing, misuse or human errors. People still play a large role!

https://www.verizon.com/business/resources/reports/dbir/

FBI's Internet Crime Complaint Center (IC3) Five-Year Statistics





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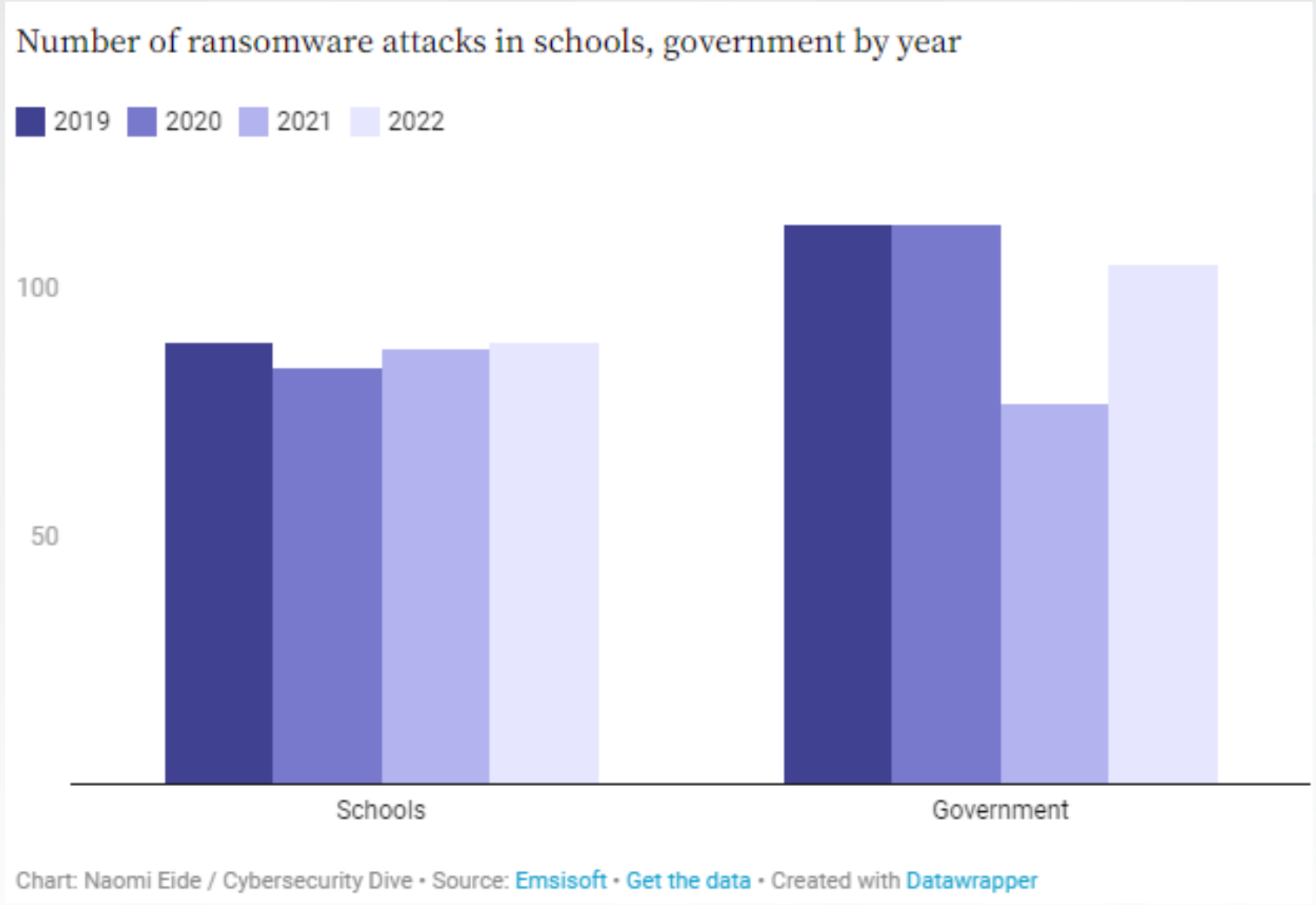
Schools/Government Four Year Statistics



School districts hit by ransomware in 2022 represent 1,981 schools, almost double the amount of K-12 schools potentially compromised in 2021

Ransomware groups successfully exfiltrated data from U.S. schools at a rate of nearly two-thirds in 2022, up from half of all organizations hit in 2021

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Breach Detection & Expense

You can't afford to ignore cybersecurity – Especially now!

Public sector average total cost of a data breach is **$2.07 million ($1.93)**

In the U.S., average total cost of a data breach is **$9.44 million ($9.05)**

Average cost per lost or stolen record is **$161 ($146)**

Mean time to identify a breach **207 days**

Mean time to contain **70 days**

Companies with an incident response team & extensive testing of their response plans saved over $2 million compared to those who did not

Source: Ponemon Institute 2022 Cost of Data Breach Study

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Cybersecurity Events/News – Past 16 Months

- LastPass – 33 million customers impacted
- Los Angeles Unified School District – 250,000 files compromised
  - California Transit – Data exposure (unknown)
- T-Mobile – 37 million customer's data breached
- *Log4J Vulnerability – Global software vulnerability

Public Sector: Atlanta, Georgia; Baltimore ($10M), Maryland; St. Lucie, Florida; New Orleans, Louisiana; and Greenville, North Carolina

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Cybersecurity Threats & Impacts

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Most Common Cybersecurity Threats

- Social engineering attacks – phishing
- Business email compromise
- Supply chain attacks
- Malware/destructive malware
  - Ransomware (Lockbit)
  - Remote access
  - Keyloggers
- Cloud applications/web applications

Top Five Most Affected Websites for Phishing

- Tiktok.com (delete now!)
- Instagram.com
- Facebook.com
- Linkedin.com
- Discord.com

Root causes of cyberattacks: Inadequate training, ineffective patch management, weak privileged access controls, & unmonitored detection systems

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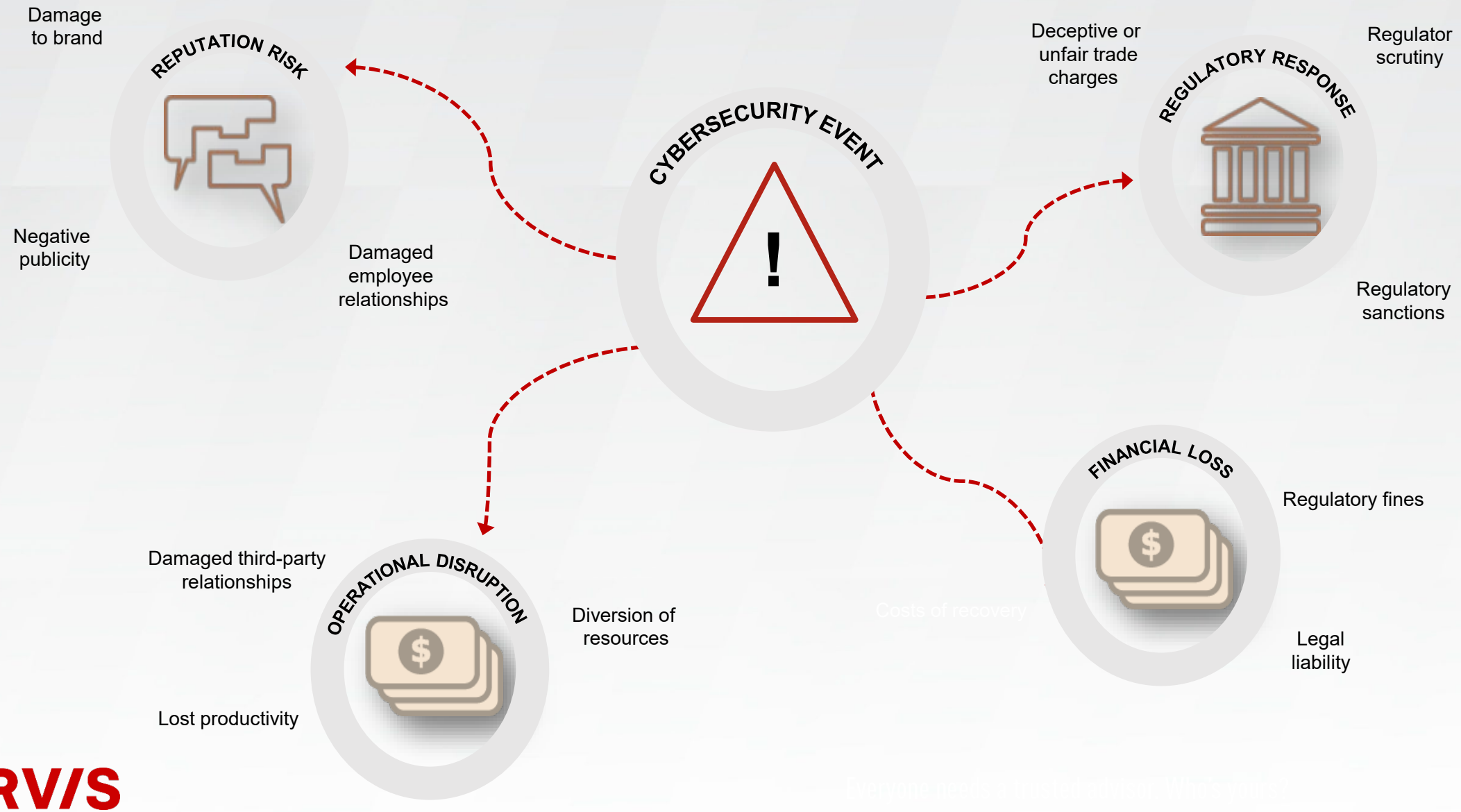
Breach Impacts



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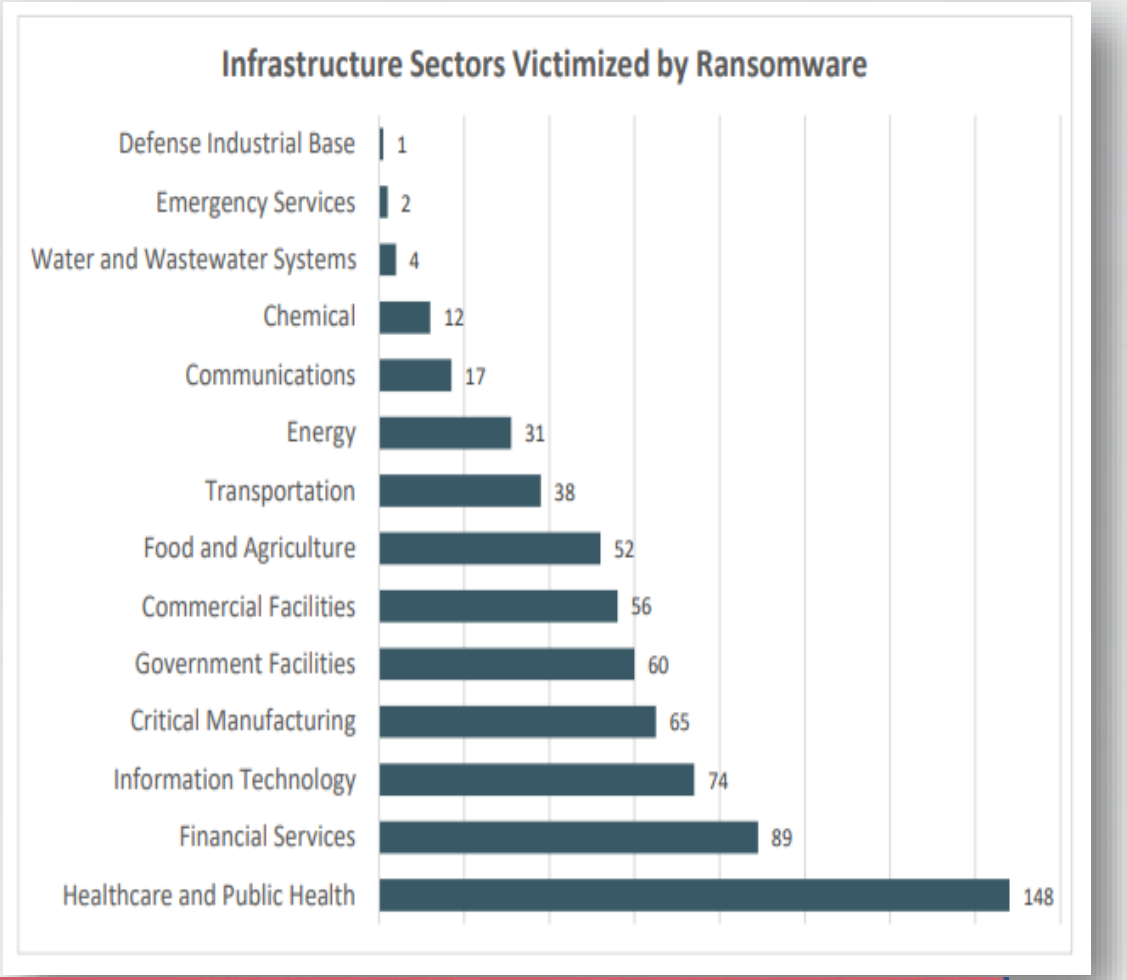
IC3 – Ransomware Fast Facts

The average downtime for a ransomware incident is 16 to 21 days*

For 2021, the FBI's IC3 received 3,729 complaints identified as ransomware with adjusted losses of more than **$49.2 million**

There were 2,474 complaints files in 2020 representing a **66% increase** from 2020 to 2021."2021_IC3Report.pdf"



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IC3 – Business Email Compromise (BEC)

In 2021, the IC3 received **19,954 complaints** of Business Email Compromise (BEC)/Email Account Compromise (EAC) complaints with adjusted losses at nearly **$2.4 billion**.

*Note: BEC fraud has cost businesses around the world **$43 billion** during the period between June 2016 & December 2021*

IC3 Recovery Asset Team (RAT) Guidance

- Contact the originating financial institution as soon as fraud is recognized to request a recall or reversal & a Hold Harmless Letter or Letter of Indemnity
- File a detailed complaint with www.ic3.gov. It is vital the complaint contains all required data in provided fields, including banking information
- Visit www.ic3.gov for updated PSAs regarding BEC trends as well as other fraud schemes targeting specific populations, like trends targeting real estate, pre-paid cards, & W-2s, for example
- Never make any payment changes without verifying the change with the intended recipient; verify email addresses are accurate when checking email on a cell phone or other mobile device

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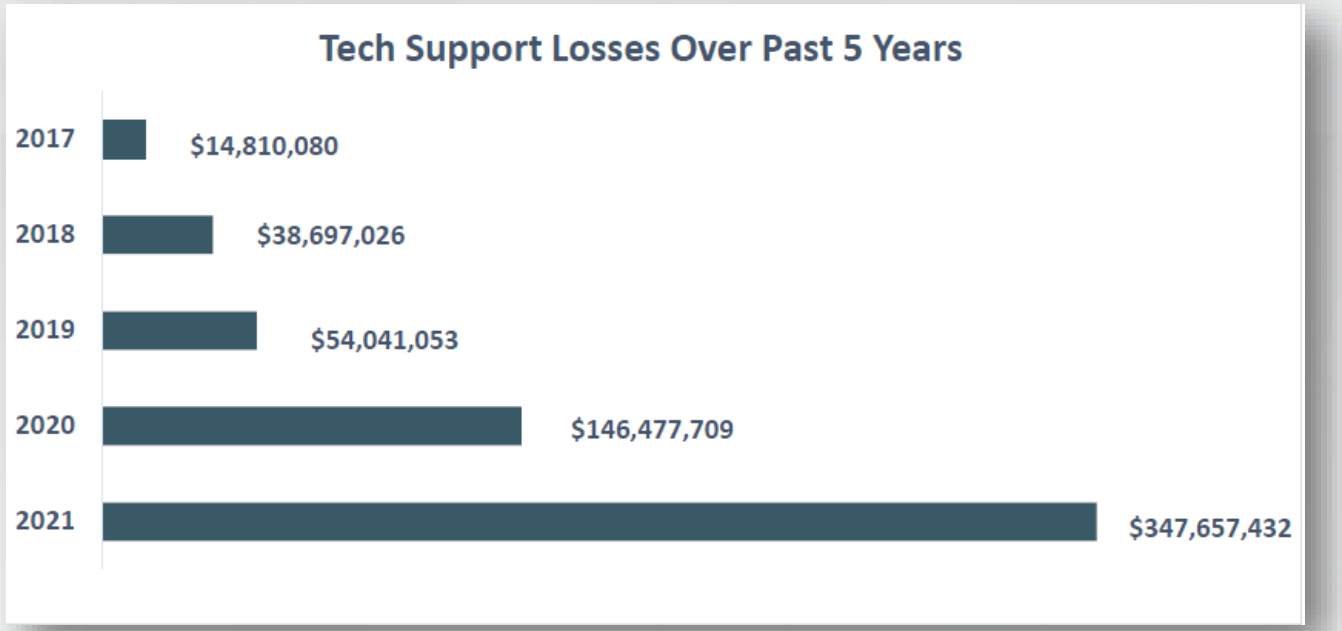
Tech Support Fraud

In 2021, the IC3 received **23,903 complaints** related to tech support fraud from victims in 70 countries. The losses amounted to more than $**347 million**, up ***137% since 2020***

In 2021, the IC3 observed an increase in complaints reporting the impersonation of customer support in the form of financial institutions, utility companies, or virtual currency exchanges



Note: Criminals will often impersonate well-known tech companies, offering to fix non-existent technology issues or renew fraudulent software or security subscriptions

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Why Are Your Sectors a Target?

- Aging infrastructure, limited revenue sources, regulatory changes, etc.
- Significant budgetary constraints
- Public Sector = Significant amount of sensitive data
- Threat actors can remain undetected for long periods of time
- You need more cyber-skilled employees

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“You” Are the Target

Importance of Awareness Training

C-level executives are 12 times more likely to be the target of social engineering attacks

Are you trained more than employees?

If not, why?

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Industry Best Practices

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IT vs. IS – Both Have Their Roles

Information Technology	Information Security
Top priority: Ensuring hardware, software, network, etc. remains functional	**Top priority:** Protecting data & assets at all costs
Responsible for new technology implementations & maintenance	Responsible for systems, processes, & risks posed by end users
Puts controls in place	Monitors controls to ensure they work as designed
Stays up to date on new hardware, software, & solutions	Stays up to date on new threats & developments that emerge daily
Often measured in uptime & response times	Recommends & prioritizes action steps & solutions
“Fix-it” mentality	“Secure-it” mentality

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Key Considerations: Focus on Governance Controls

- Maintain a strong **information security program**
- Maintain a strong **incident response program**
- Ensure **business continuity/DR** & **vendor management** policies & procedures address cybersecurity
- Consider how **cybersecurity insurance** should fit into your risk management program
- Ensure **cybersecurity awareness training** is performed regularly (educate & motivate)
- Join **an information sharing & analysis center (ISAC)** or other information sharing forums – filter reports based on each employees' role
- Perform **frequent cyber risk assessments**, penetration tests, vulnerability assessments, ransomware assessments, etc.

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Key Considerations: Focus on Technical Controls

- Use **multifactor** or **two-factor** for O365, VPN, remote sessions, & privileged access
- Track, report, independently test, & update security **patches** based on a risk priority schedule (Microsoft & non-Microsoft patches)
- Maintain accurate **asset inventories** for hardware & software, including **data classification**
- Enforce **application whitelisting** controls & **remove** unauthorized applications
- **Remove local administrator** rights to reduce malicious software installs
- **Constantly adjust existing security tools** – web content, email filtering, end point, etc.
- Deploy **cloud-based security** software & end-point protection (SentinelOne, Crowdstrike, Windows Defender, etc.)

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Key Considerations: Technical Controls

- Implement strong cloud-based **data loss prevention** controls
- Use **security information & event management (SIEM)** tools with **“defense in depth”** approach
- **Strengthen** your passwords! Do not use single words.
- Ensure **data encryption** is enforced to protect confidential data
- **Segment** internal networks to isolate critical systems
- Be aware of **insider threat** – layoffs, disgruntled, etc. Think zero trust!
- **Air gap** your backups to keep them out of reach of an attack
- Make your air-gapped backups **immutable**!

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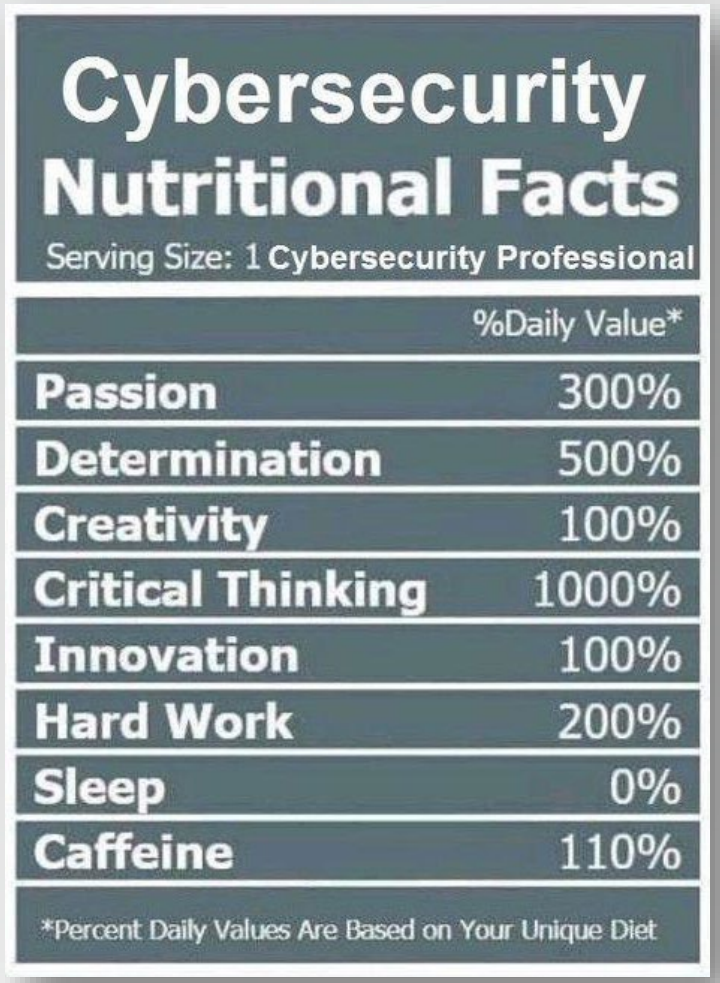
Cybersecurity Health



A strong cybersecurity culture & overall program is a must going forward!

Are you taking care of your “cybersecurity health”?

This is the best way you can be ***prepared*** for an attack

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Final Thoughts & Conclusion

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A Dangerous Perception

Perception of Your Security Controls

vs.

Your Actual Security Controls

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A Quote to Motivate

Hearing *is not the same as* ***listening****!*

- Every Mom

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Other Resources

- Infosec Institute – https://resources.infosecinstitute.com/
- Info Risk Today – https://www.inforisktoday.com/
- Security Week – https://www.securityweek.com/
- Dark Reading – https://www.darkreading.com/
- The Top Cyber Threat Intelligence Feeds – https://thecyberthreat.com/cyber-threat-intelligence-feeds/

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Questions?

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