Cyber Security Threats - 2018

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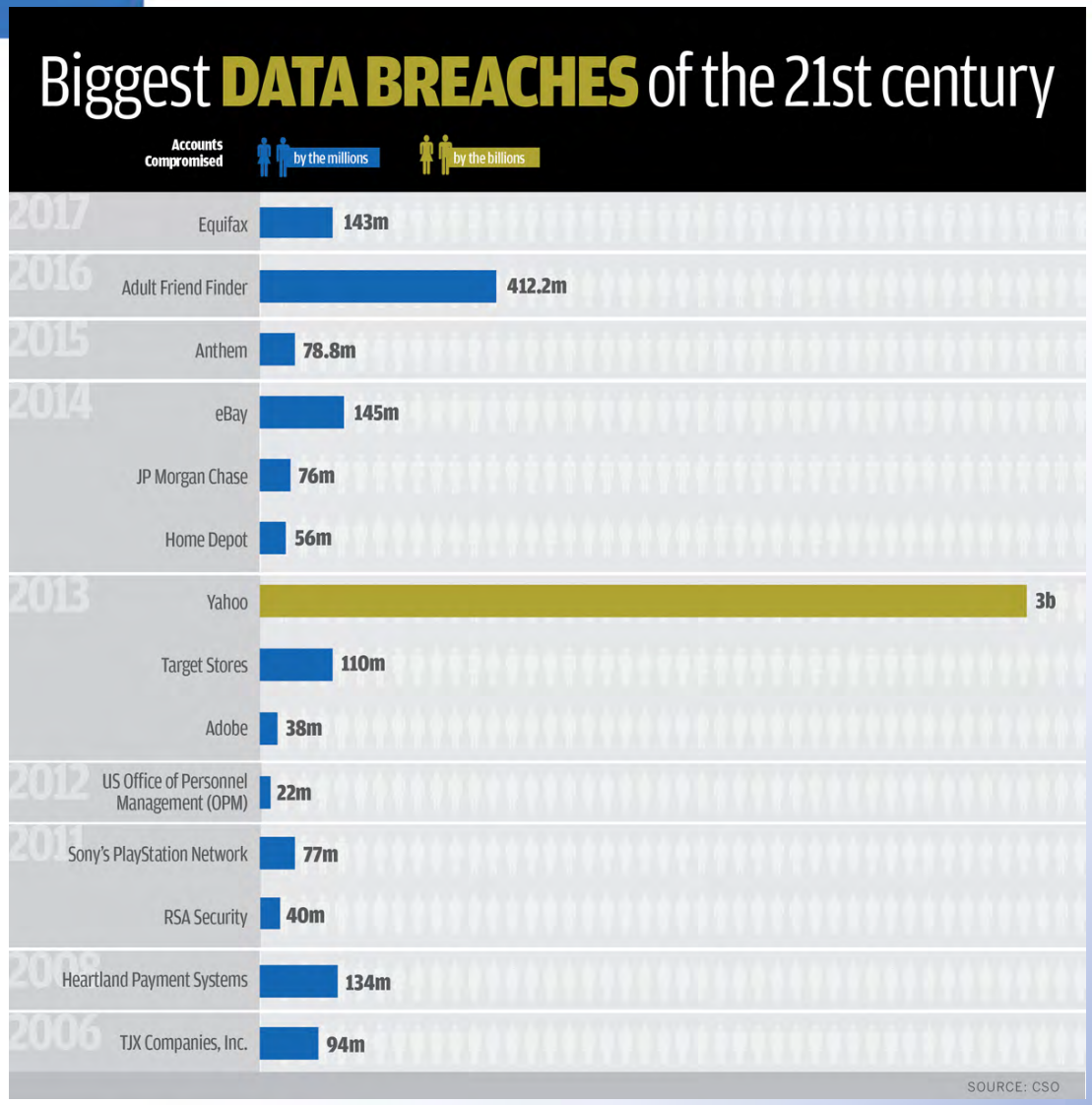
David Dinkel
PC(USA) Information Technology

Can my company or organization be breached?



csoonline.com, 1/26/18

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What are the top cyber security threats today?

- Malware (esp. combined with social engineering)
- Phishing (for passwords and other sensitive info)
- Spearphishing
- Distributed Denial of Service (DDoS) Attacks
- Man in the Middle Attacks
- Credential Stealing and Reuse
- Pharming
- Spam
- Spoofing and Social Engineering attacks
- WiFi eavesdropping
- Viruses, Trojan Horses, Worms, Spyware, etc.

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What are the cyber security threats you are likely to face?

From csoonline.com article by Roger A. Grimes, 8/21/2017

1. Socially engineered malware (Ransomware)
2. Password phishing attacks
3. Unpatched software
4. Social media threats
5. Advanced persistent threats

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1. Socially Engineered Malware

- User is tricked or coerced into running a malicious program
  - Could be clicking a malicious weblink, opening an infected file or installing compromised software

- Most common example of socially engineered malware is Ransomware
  - Ransomware encrypts key files on your PC—Word docs, Excel spreadsheets, photos, etc.
  - Impossible to recover your files in most cases

1. Socially Engineered Malware (cont.)

1. Socially Engineered Malware (cont.)

What can I do if I have been infected with Ransomware? Unfortunately not much.

- **Encryption keys are too complicated**
- **Cyber criminals have all of the control**

In cases of attacks which include large amounts of data (hospitals, government agencies, etc.) paying the ransom may be the only solution.

- **Take a chance and pay the ransom…usually in bitcoins and not easy to setup**
- **Keep your computer and wait…sometimes cyber criminals reach a point where they are no longer making money and release the decryption codes**

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2. Password Phishing Attacks

- Usually arrive in your e-mail inbox and appear to come from legitimate companies
  - They will incorporate real company logos and threatening verbiage (You have to change your password now!)
  - They will instruct you to change your password or provide other personally identifiable information
  - Spearphishing attacks where criminals study the company's employee organizational structure

- How to deal with this type of attack?
  - Be aware—sometimes if you hover your mouse pointer over a link in the e-mail, you will notice the link points to an illegitimate source
  - Some of these e-mails will include bad grammar or spelling errors
  - Deleting the e-mail is the best approach

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3. Unpatched Software

- All vendor operating systems Windows, Apple OSX, Linux, Apple IOS (iPhone and iPads), Android (phones and tablets), etc regularly release patches and new releases

- Many of these releases include operating system enhancements but they also often include security patches

- Upgrade your devices on a regular basis
  - Know how to update each of your devices
  - Pay attention to mainstream news stories that report a security related story because it often means you need to upgrade at least one of your devices

- Sometimes vendors will release a single patch to address a particularly serious issue—it is important that these types of patches are installed immediately

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4. Social Media Threats

- Usually arrive as a friend or application install request and sometimes can contain links to spread malware
- May be in the form of fake accounts (sometimes look like they are legitimate and usually famous people) and used to spread misinformation
- Unwitting release of information can be dangerous
  - "I will be on vacation…
  - Divulging too much personally identifiable information can be used by criminals
- Be careful of what you post, requests you receive and the information you consume

5. Advanced Persistent Threats

- **Usually sophisticated, extremely hard to detect and occur over a long period of time**
  - **Usually used to steal data and not to disable networks or computers**
  - **Example is Deep Panda in 2015 where it is believed that China hacked the US Government Office of Personnel Management and compromised 4 million employee records**

- **Can be started as part of a spearfishing attack**
  - **Spearfishing is throwing a threat at a particular target and hoping it sticks—an example is getting an employee to open an infected document or link**

5. Advanced Persistent Threats (cont.)

- Here is what an attacker can do once the initial attack is successful:
  - Install additional hacking tools to map out your network and applications
  - Extract data from key databases and move the data out of the network so that it can be used later (selling on the Dark Web)
  - Remove all evidence that you have been compromised but maintain network presence for future attacks

- What can you do to protect your organization against ATP attacks?
  - Be extremely careful when reviewing e-mail messages—don't open attachments or click on links unless you are completely confident of the source of the e-mail
  - Ensure that your AV software is installed, working and up to date
  - This type of attack most always requires advanced expertise—a dedicated security expert on staff or hiring a MSSP (Managed Security Service Provider)

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What can you do?

- Stay focused – this is the most important!
  - Review every e-mail carefully before opening attachments or clicking on links
  - If you are even a bit suspicious, delete and empty your email trash
- Protect yourself with the best of breed anti-virus and anti-malware solutions
- Back up your data – preferably to two different locations (local and cloud)
- Find a free (and paid) cyber security course and take it (and take it seriously)
  - ESET.com and Cybrary.it both offer free courses. Wombat and Knowbe4 are the top subscription-based security training vendors.
- Stay up to date on your patches!
  - PC's, phones, tablets and iOT devices (stoves, thermostats, light bulbs, refrigerators, etc).
- Be cautious when surfing the web
  - Freeware and rogue websites can cause big issues

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Advances in fighting cyber crime

- **Better anti-virus/anti-malware solutions based on sophisticated predictive mathematical algorithms that can detect malware patterns (Cylance, Carbon Black and others)**
  - **Some actually try to keep track of infected URL links and will block them if you accidentally click on them**
- **More emphasis on security by subscription services like Office 365 (Advanced Threat Protection)**
- **Focus on cyber security awareness and education (staysafeonline.org, wombat.com, knowbe4.com)**

OpenDNS
Carbon Black.
KnowBe4 Human error. Conquered.
CYLANCE
wombat security technologies
SentinelOne
Office 365

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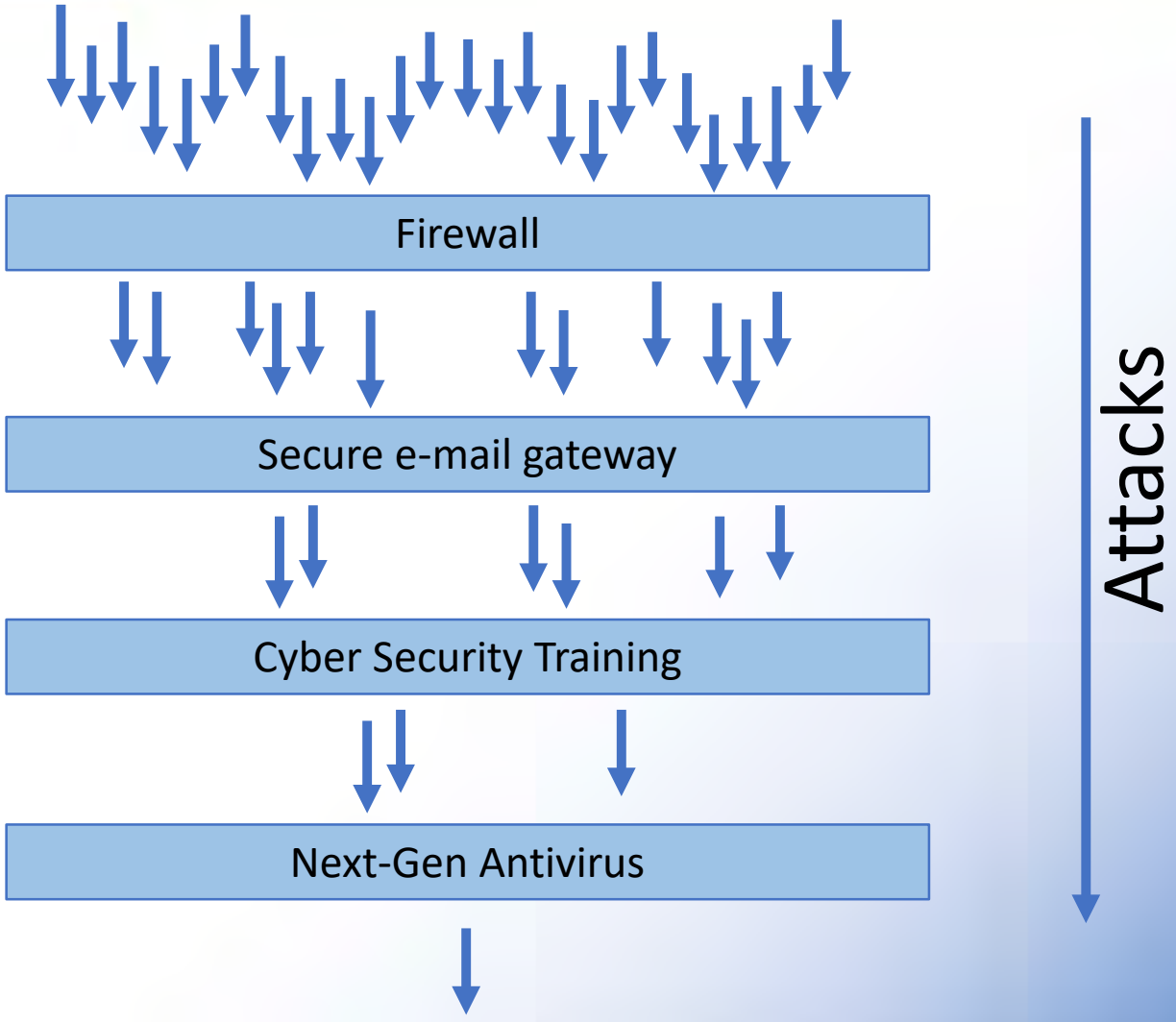
Layered approach to security

There is no cyber security "silver bullet"—you need a layered approach using multiple technologies



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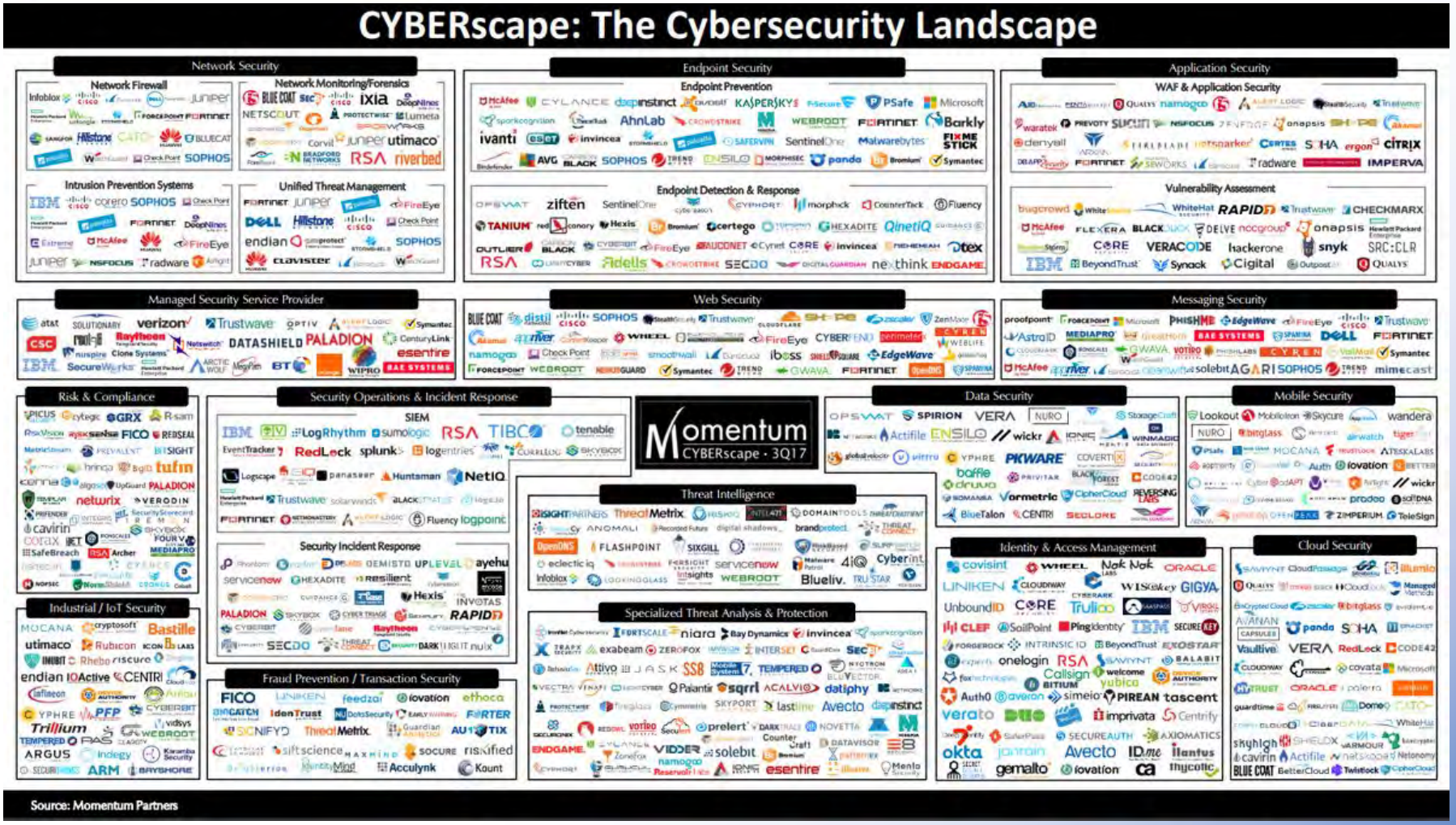
Cyber Security Vendor Landscape



Source: Momentum Cyber Security Group, LLC

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Learn more about various threats

Government of Canada

https://www.getcybersafe.gc.ca/cnt/rsks/cmmn-thrts-eng.aspx

Awareness is the key!

Questions?