



The State of Cybersecurity in 2021

IAASB CAG Meeting

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- › Worked directly in cybersecurity for a decade
 - › Federal agencies, state, and local governments
 - › Private sector across many different industries, including healthcare, financial, Silicon Valley, utilities, critical infrastructure
- › Worked within many different disciplines of cybersecurity
 - › Technical
 - › Non-technical
- › Multiple industry certifications



What is cybersecurity?



The World of IT

- › Organizations used to do business by paper
- › Moved to electronic methods because they offered convenience, speed, and efficiency that paper couldn't offer



Protecting Information

- How do we control physical information?
 - Locks
 - Strong buildings
 - Safes
 - Guards
 - Alarm systems
- But how do you secure electronic information in the same way?



Enter Cybersecurity

Confidentiality

- › **Protecting and keeping** your secret information that way
- › Make sure that only the **right people can access**

Integrity

- › Trust that an IT system is going to keep your **information the same**

Availability

- › If you **rely on** an IT system to do something critical, that IT system **needs to be available**



IT and Cybersecurity

What is IT?

Information technology, or IT, is about getting IT systems and their components (e.g. your computer, apps, software, servers, the cloud) to work

What is cybersecurity?

Cybersecurity is about getting those same IT systems to work securely through a partnership with IT teams

➤ **Also called:** information security, IT risk management, IT security, infosec, or a million other things – the concept is the same

Reducing Risk and Misuse



Cybersecurity Trends in 2021

› Ransomware

- › Cost businesses an estimated \$20 billion in US alone this year
- › Easy for criminals to use – with little technical knowledge

› Data Breaches

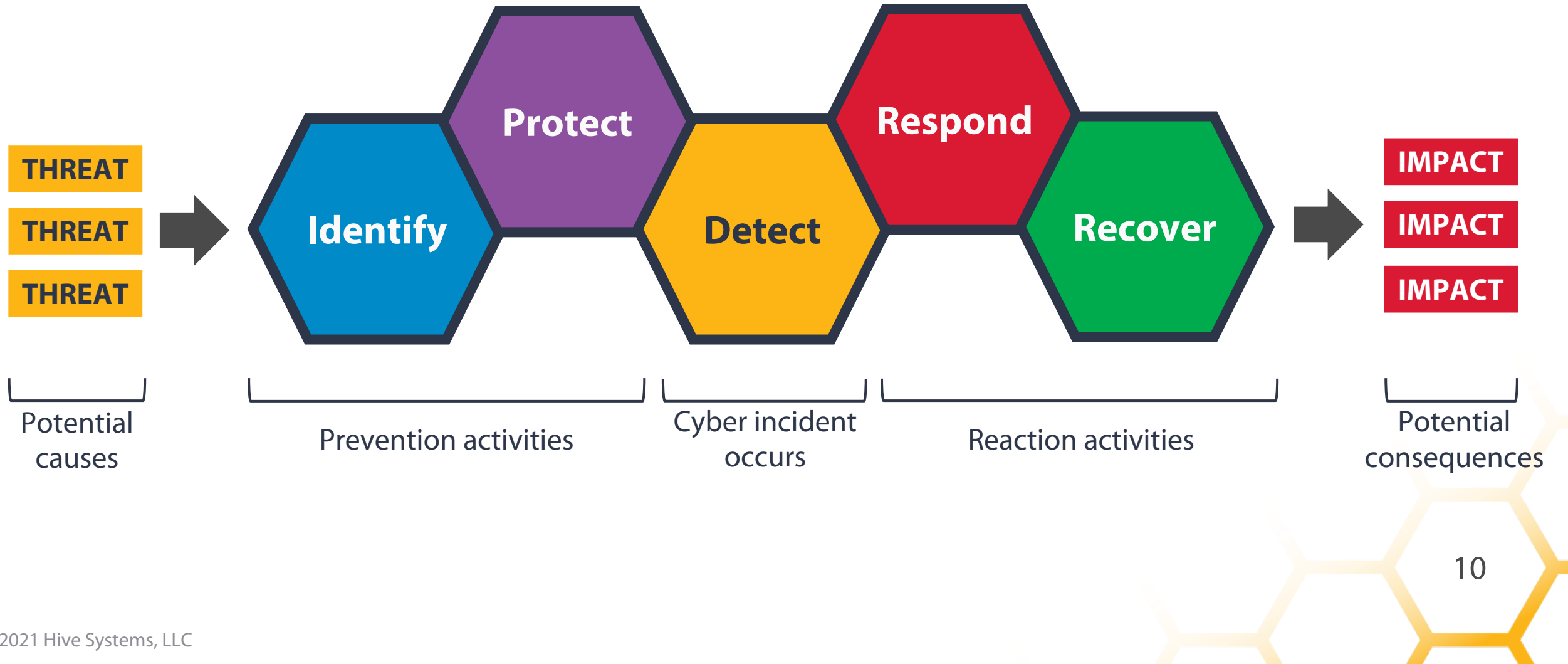
- › Can occur maliciously, but also unintentionally
- › Pace of IT innovation for companies exceeds pace of protecting information
- › Remote work creating a wider footprint

› The “Internet of Things”

- › Phone, thermostats, cameras, smart home
- › IoT devices causing rapid expansion of IT footprint in businesses – causing rapid expansion of risk



Looking at Cybersecurity Risk



What happens if information is stolen?

Regulatory fines

Payment Card Industry Data Security Standard	Can range from \$5,000 - \$100,000 per month
Health Insurance Portability and Accountability Act (HIPAA)	Vary based on severity - \$100 to \$50,000 per incident (or per record) up to \$1.5 million per year and jail time

External investigations

- FBI, state

Reputational damage

- Customers/clients lose trust
- Forced to shut down



Controlling Risk

- Businesses are unique in how they operate, but IT is not
 - Risks are generally the same – can vary in terms of impact similar to accounting
- How to address?
 - Compliance requirements only covers so much
 - Establish security controls using known frameworks



Cybersecurity In Practice: Passwords

- › The **root of all cybersecurity today**; whether we like it or not
- › You need different, complex passwords for every login (websites, phone, smart devices)
- › How do you do this? **Password manager**
 - › 1Password, LastPass, Dashlane
- › If long and complex, can change every year (or longer) or when you hear about a hack or breach
- › **Couple with multi-factor authentication** for greatest protection

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	1 sec	5 secs
7	Instantly	Instantly	25 secs	1 min	6 mins
8	Instantly	5 secs	22 mins	1 hour	8 hours
9	Instantly	2 mins	19 hours	3 days	3 weeks
10	Instantly	58 mins	1 month	7 months	5 years
11	2 secs	1 day	5 years	41 years	400 years
12	25 secs	3 weeks	300 years	2k years	34k years
13	4 mins	1 year	16k years	100k years	2m years
14	41 mins	51 years	800k years	9m years	200m years
15	6 hours	1k years	43m years	600m years	15 bn years
16	2 days	34k years	2bn years	37bn years	1tn years
17	4 weeks	800k years	100bn years	2tn years	93tn years
18	9 months	23m years	6tn years	100 tn years	7qd years

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