Security and Cyber Risk
Support Digitalization & Build Resilience
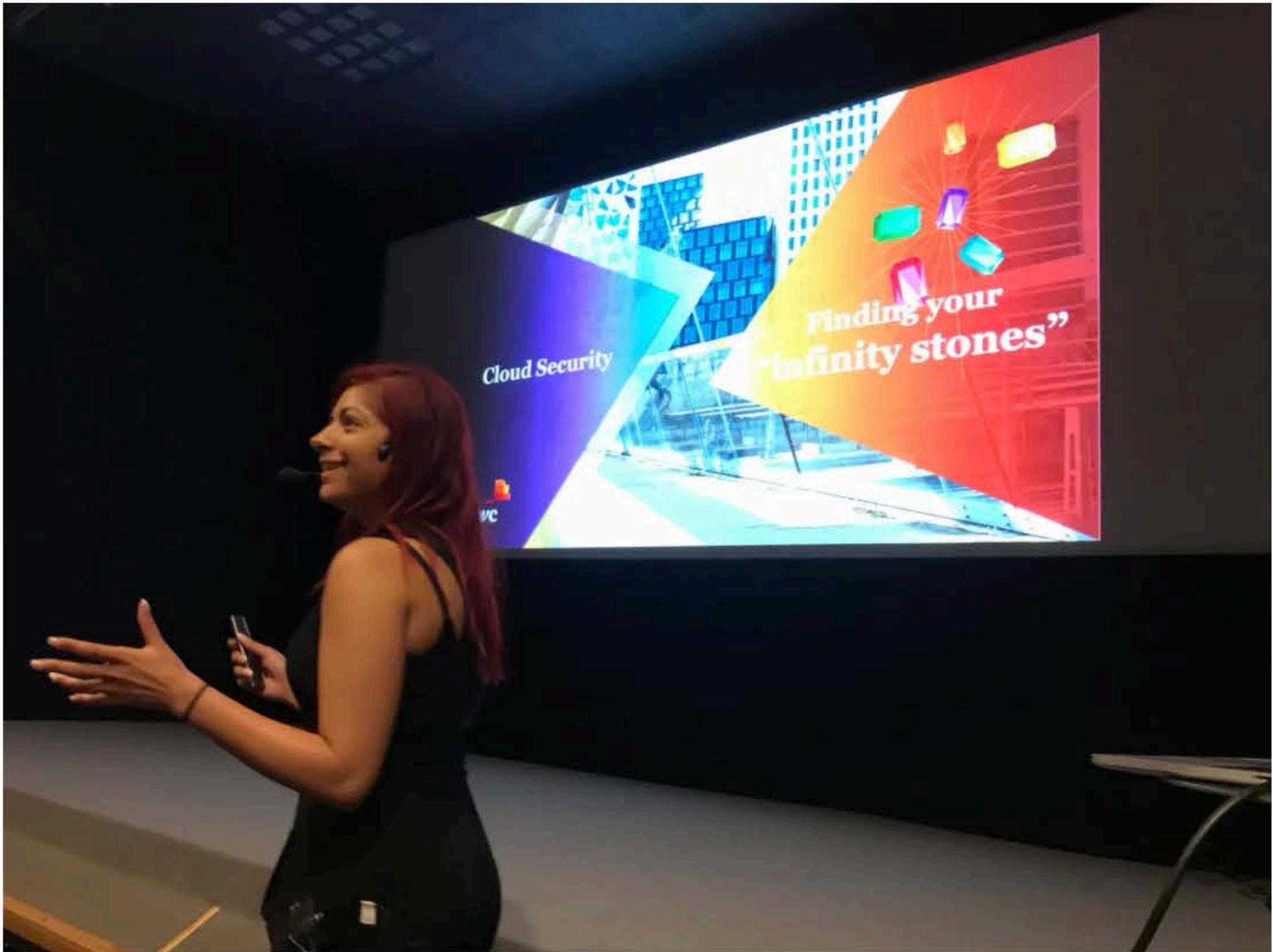
Who am I?

MONICA VERMA

THE BLOG ON ALL THINGS CYBER

Speaker. CISO. 2019-OSPA Winner. Board
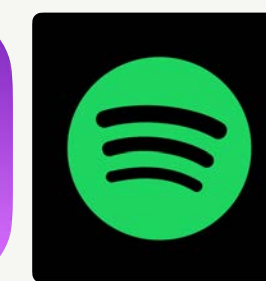Member CSA & Women In Cybersecurity

The Last Decade

Blockchain
Internet of Things
Smart Cities CryptoCurrency Connected
Automation Drones
Digital Wallet
WiFi 6 Supply Chain OpenBanking
Digitalization
Health Monitor Heart Pacemaker Artifical Intelligence
Mobile Banking Autonomous Smart Phone
Bionics Cloud 5G
Machine Learning
Smart Devices

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Pandemic
A few challenges

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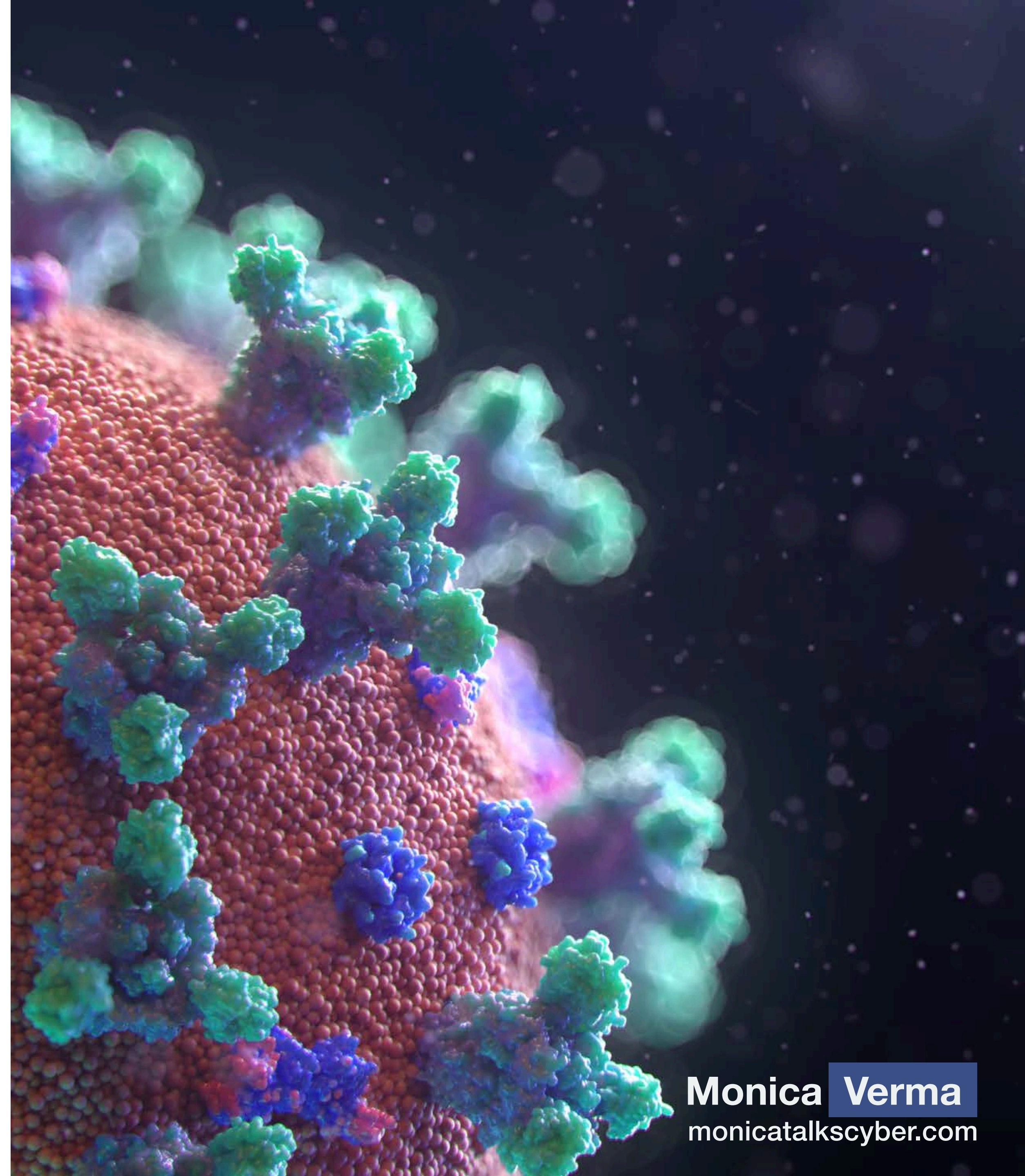
Digitalization
Outsourcing
Cloud Services
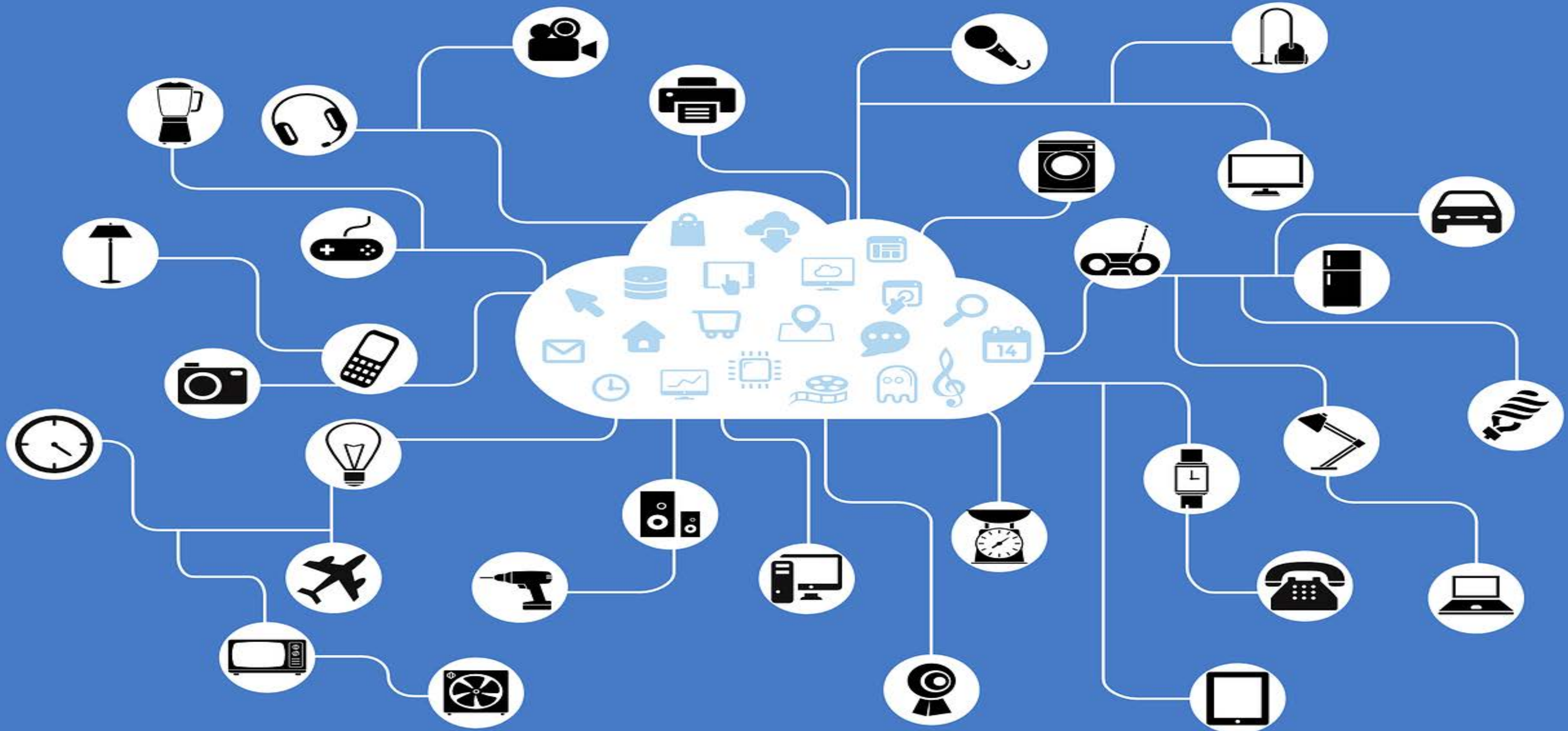
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THE UNKNOWNS

THE UNKNOWN KNOWN	THE KNOWN UNKNOWN	THE UNKNOWN UNKNOWN
Tacit Knowledge	e.g. 0-Day	Meta Ignorance

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Attacker Motivations

#1 Financial Gain

CNBC ✓
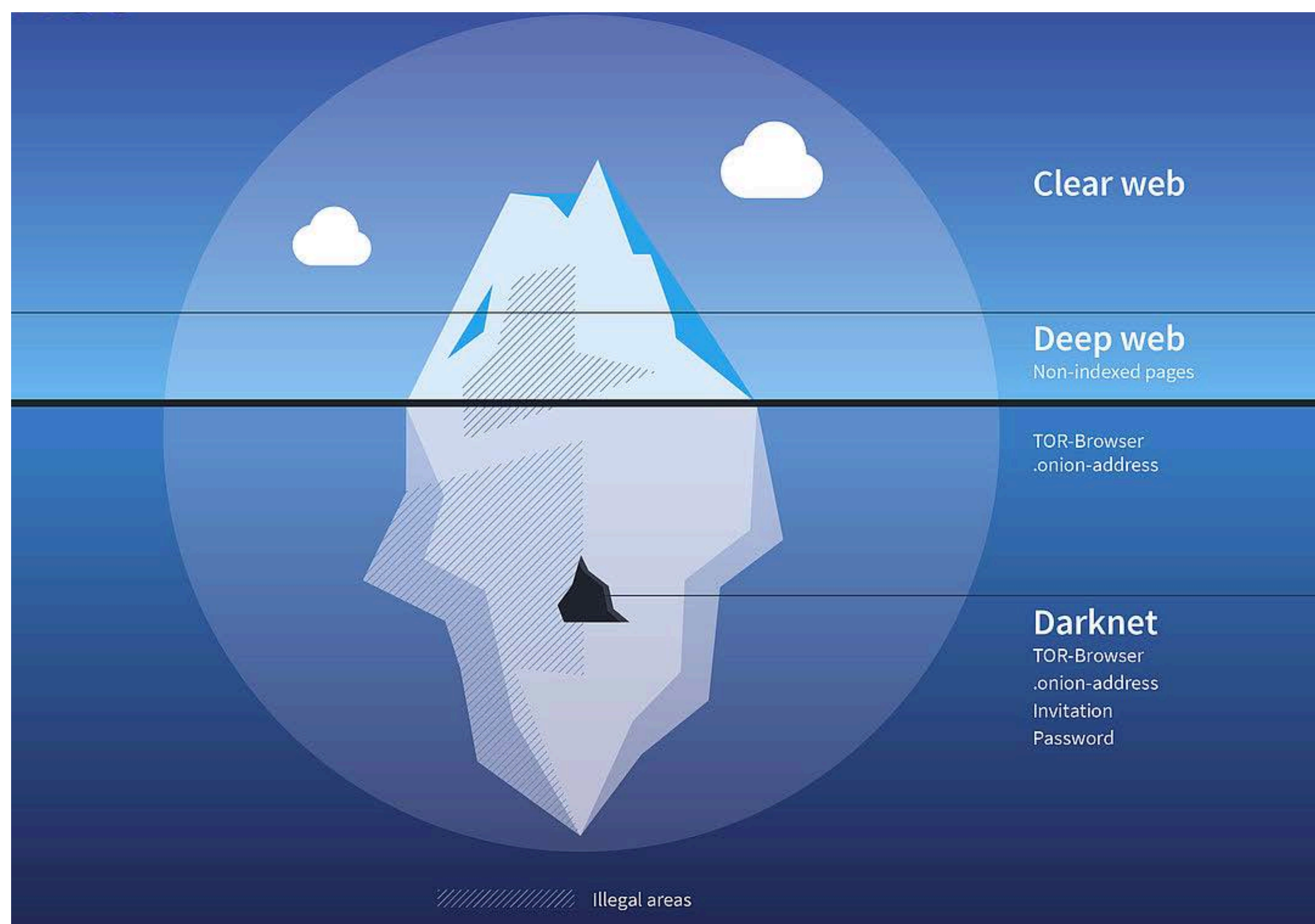@CNBC

"It's one thing to defend against a hacker... But defending against the military arm of another government, in this case China, really raises the bar," Equifax CEO Mark Begor said about today's indictment.
cnb.cx/2UFVg6w

Visit cnb.cx ›

FIRST ON CNBC — FOUR CHINA MILITARY MEMBERS INDICTED FOR EQUIFAX BREACH

3.4K views   0:05 / 2:43

EQUIFAX

DARKNET

Clear web

Deep web
Non-indexed pages

TOR-Browser
.onion-address

Darknet
TOR-Browser
.onion-address
Invitation
Password

Illegal areas
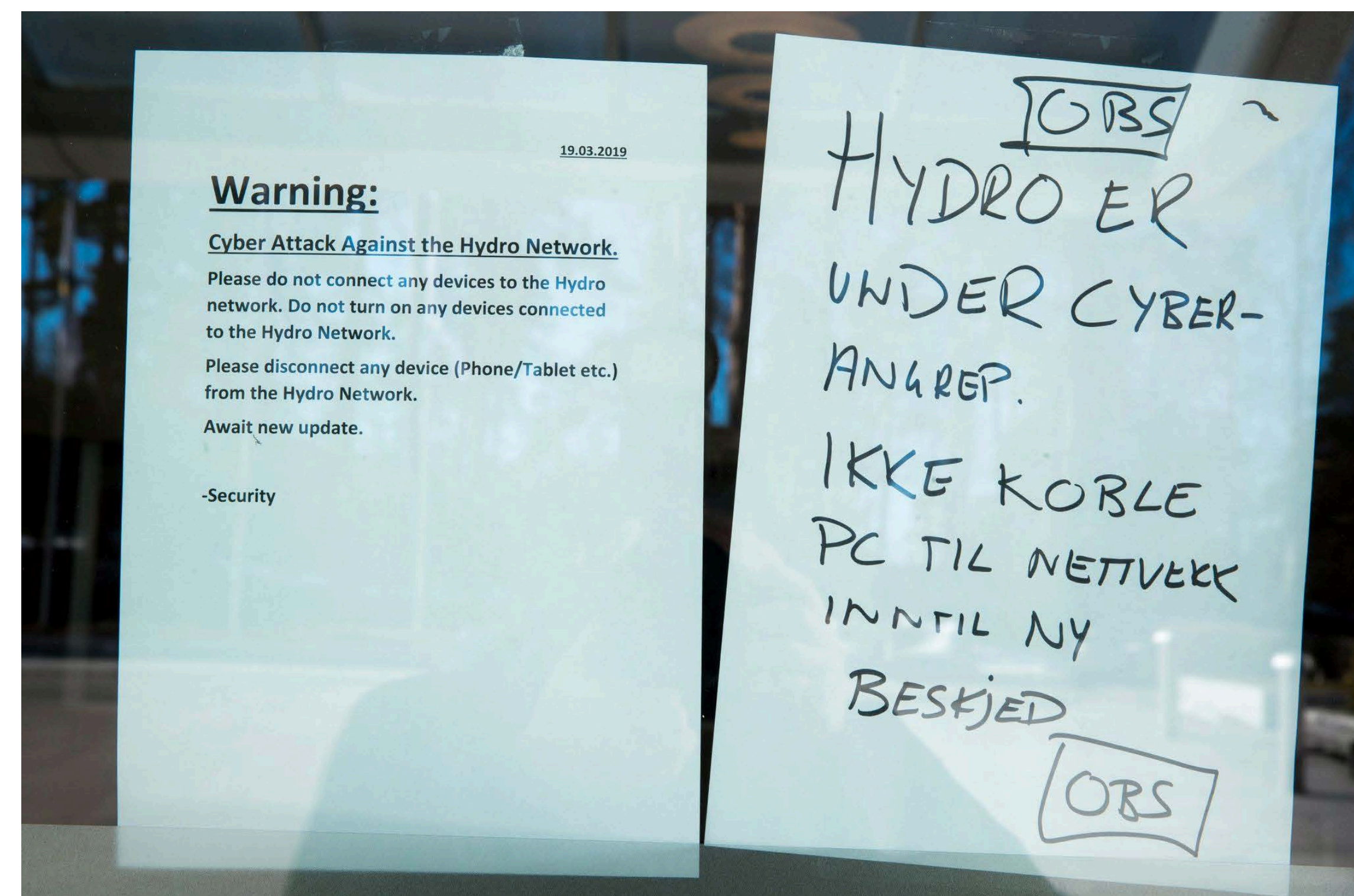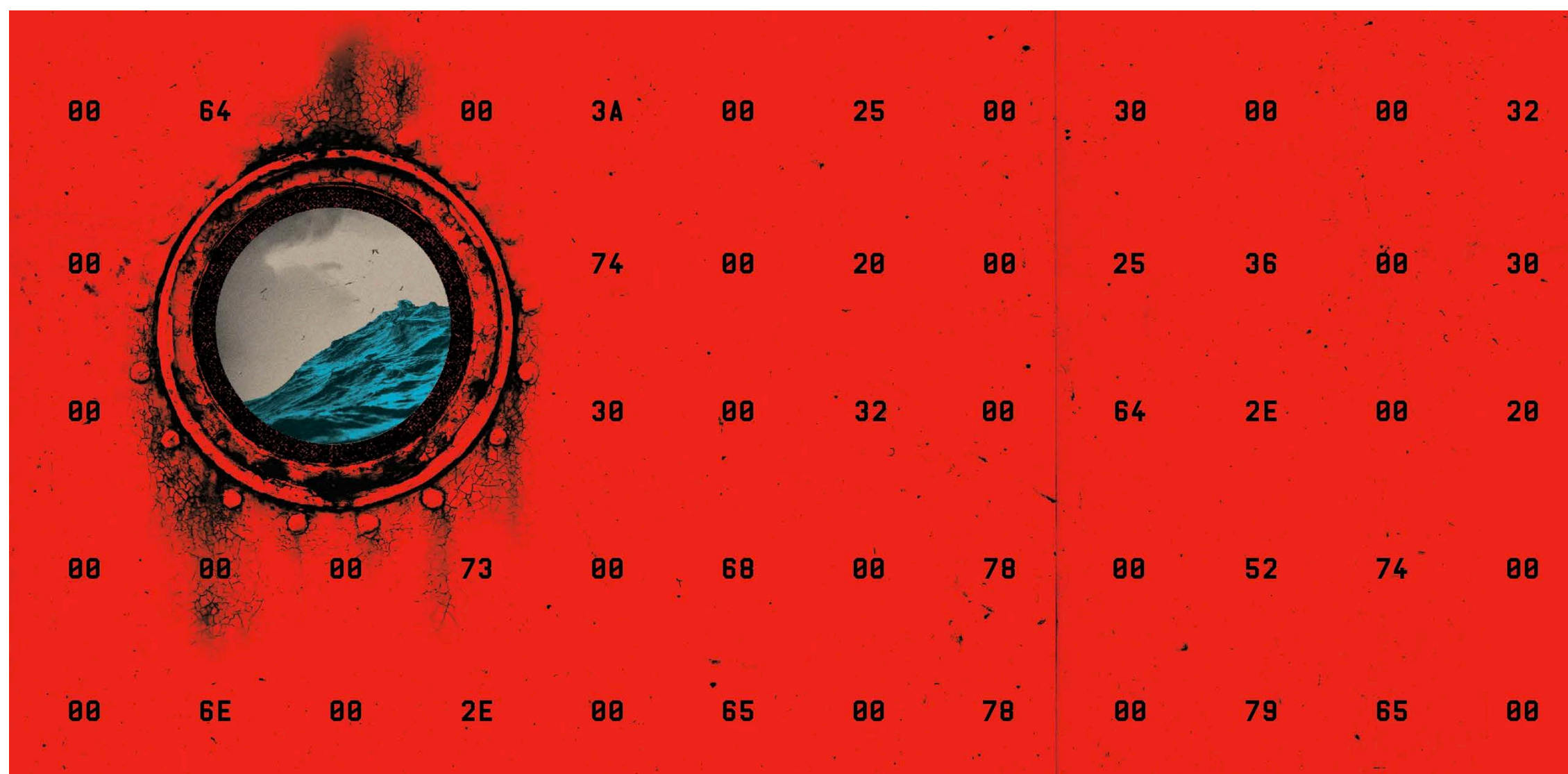
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Globalization
Interconnection
Lack of Defense
Unknowns

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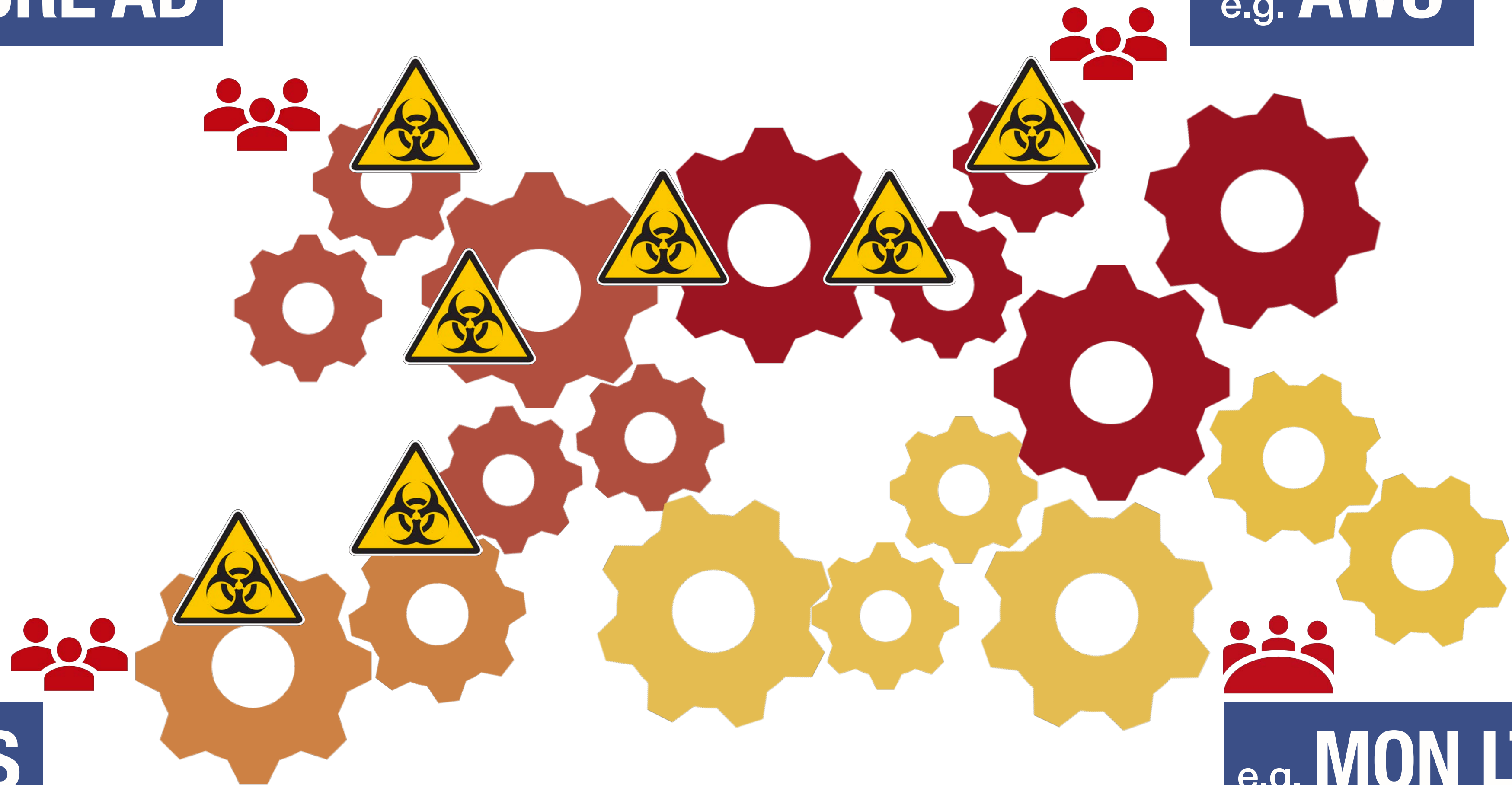
APT10 CLOUD HOPPER

2017

"APT10 has recently unleashed a sustained campaign against MSPs. The compromise of MSP networks has provided broad and unprecedented access to MSP customer networks."

"PwC UK and BAE Systems assess APT10 as highly likely to be a China-based threat actor."

Not just a matter of if and when, but

how long?
how much impact?
how to contain?
how to invest?
how to continue?
how to adapt?
how to predict?

In today's digital landscape, cyber risk is not only an enterprise risk but also a systemic risk.

Monica Verma

HOSPITAL CYBER ATTACK

2020

"A woman in Germany died during a ransomware attack on the Düsseldorf University Hospital, in what may be the **first death directly linked to a cyberattack on a hospital.** "

"German police have launched a homicide investigation after a woman died during a cyber-attack on a hospital."

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Business
Differentiator
Key Elements

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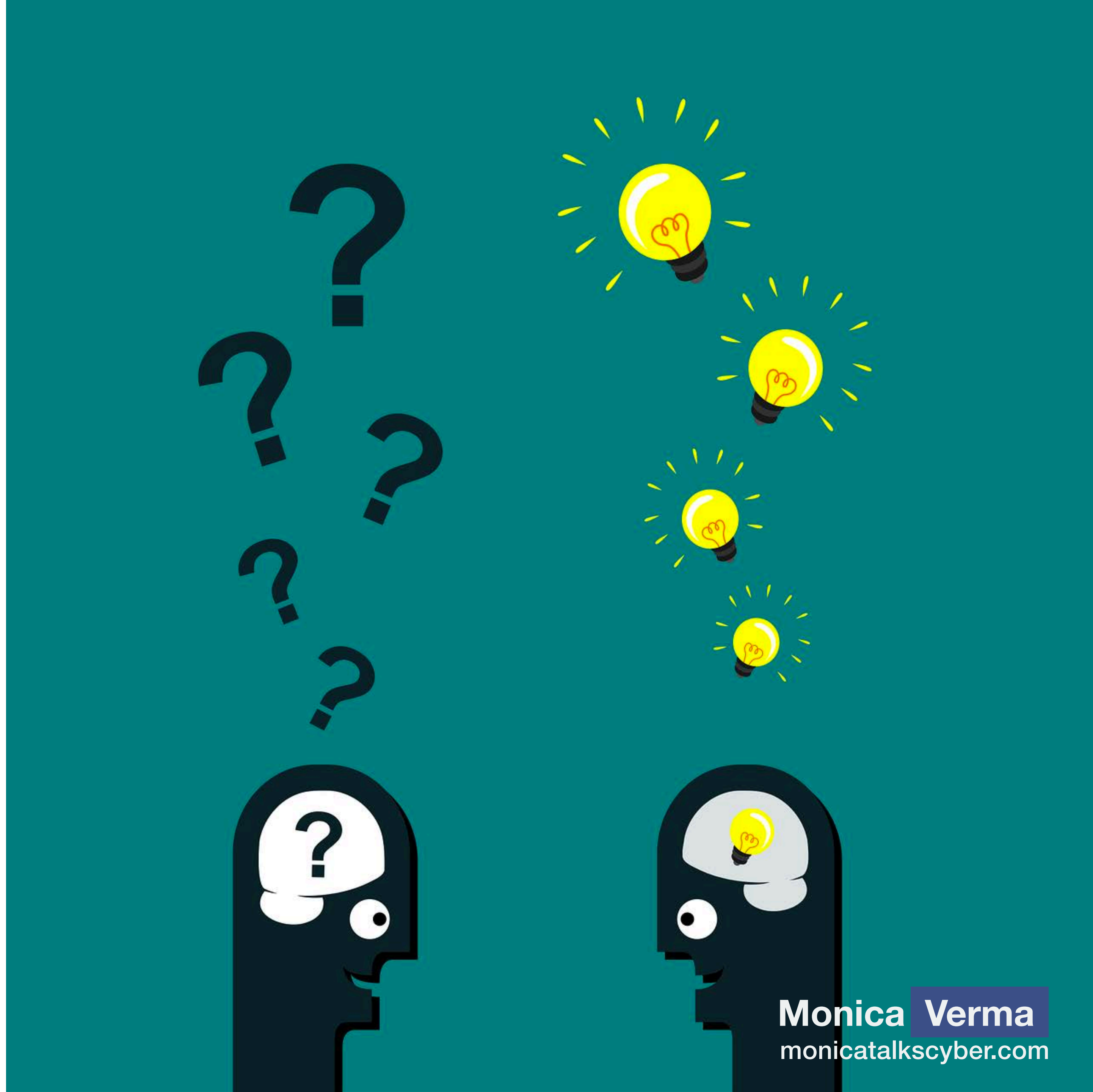
1. Goals and Strategy
2. Managing Risks & Exposure
3. Building Cyber Resilience

Security
Purpose and Goals

To Secure? Ensure CIA?

WHY Secure? WHY CIA?

THE WHY

Ensure services especially those critical to business and society **continue** to function and serve their purpose

- **whenever** and **at all times** needed

- (**only**) to the **extend** needed

whilst **managing risks** associated with these **timely** and **adequately**

MANAGE RISKS AND ACHIEVE BUSINESS GOALS

1. Cybersecurity Strategy
Building and Operationalizing
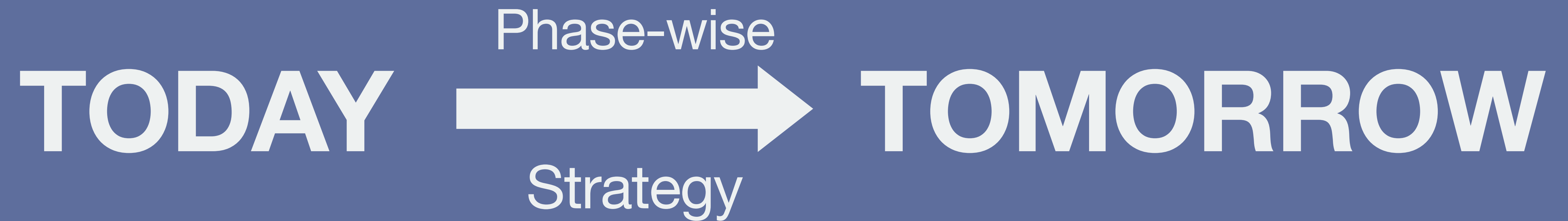
CYBERSECURITY ADOPTION LIFECYCLE MODEL

EARLY MARKET   THE CHASM   MAINSTREAM MARKET

PREVENTIVE

ADAPTIVE

REGULATORY

Regulatory Driven

PREDICTIVE

Adaptive Security

Industry Good Practices

Established Regulatory Frameworks

Reactive Security

Predictive Security

e.g. Threat Hunting

e.g. Cyber Resilience

REACTIVE

INNOVATORS   EARLY ADOPTERS   EARLY MAJORITY   LATE MAJORITY   LAGGARDS
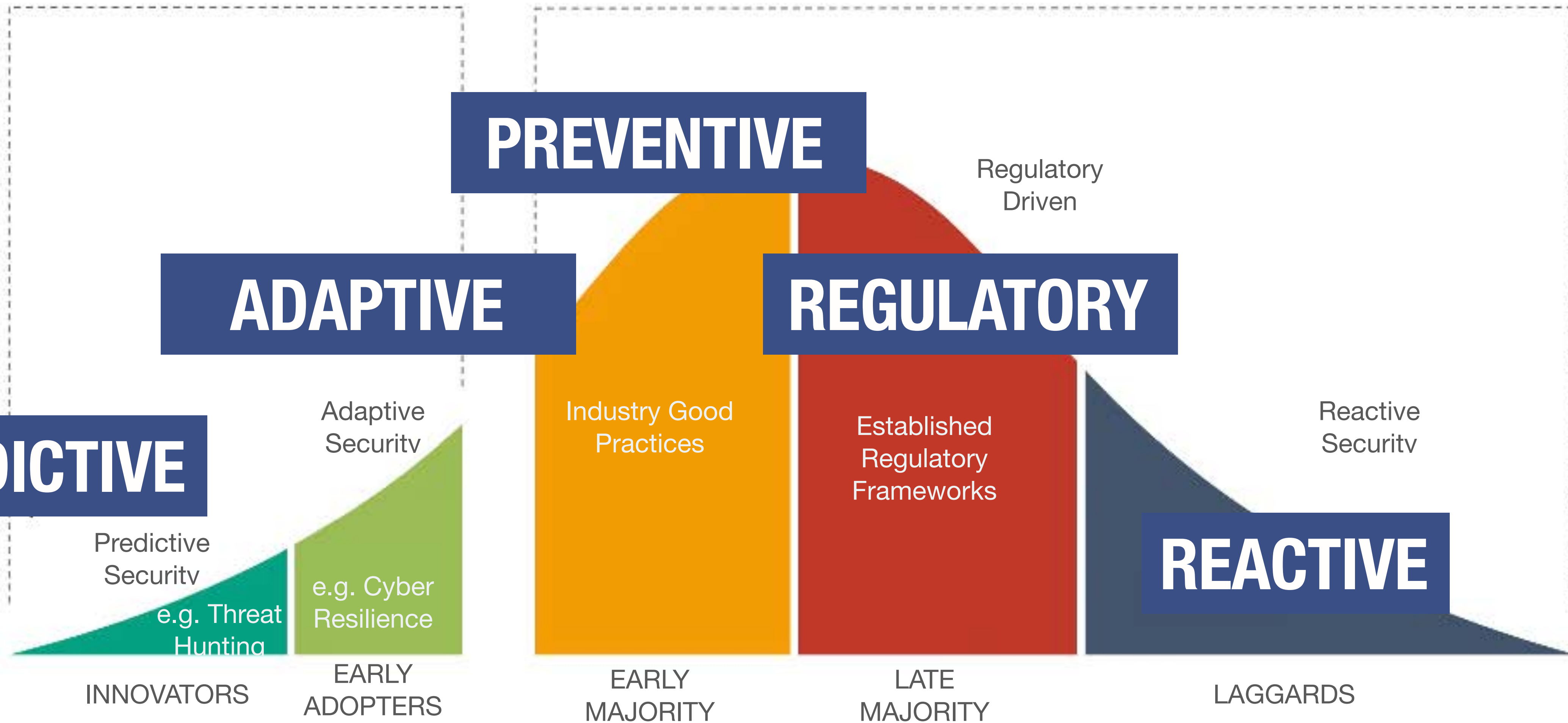
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CYBERSECURITY LIFECYCLE MODEL

1. Different categories and phases of adoption
2. How an ideal distribution looks like and where you lie
3. Establish adaptive capabilities that over time can cross the chasm

1. Goals and Strategy
2. Managing Risks & Exposure
3. Building Cyber Resilience

2. Risk Quantification
Understanding the Exposure

RISK EXPOSURE

Threat x Vulnerability X Likelihood X Loss = Exposure

- **What is your true exposure to potential cyber losses?**

- **How do you know your investment in cybersecurity and cyber resilience is proportional to your exposure?**

- **How do you know what is your right cyber insurance coverage?**

EQUIFAX

147 M Equifax 2017

$326M Equifax since 2017

During the year ended December 31, 2018, the Company recorded $401.2 million of pre-tax expenses **related to the 2017 cybersecurity incident** and insurance recoveries of $75.0 million for **net expenses of $326.2 million.**

$575M Equifax FTC 2019

Equifax's Data Breach Costs Hit $1.4 Billion

Massive 2017 Breach Continues to Bite the Credit Reporting Giant's Bottom Line

Mathew J. Schwartz (🐦euroinfosec) · May 13, 2019 💬

✉ 🖨 💼 🐦 Twitter f Facebook in LinkedIn ⭐ Credit Eligible   ℹ Get Permission

Credit reporting giant Equifax has spent nearly $1.4 billion on cleanup costs as well as overhauling its information security program following its massive 2017 data breach.

Risk Quantification

Financial estimation of a cyber risk impact including financial costs, business costs and reputational impact. Total loss from a potential attack:

a) Operational Expense

b) Fines and Litigation Fees

c) Reputational Loss

The risk I took was calculated,

....but man, I am bad at math.

Bull's Eye

It's about balancing accuracy and precision!

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Categorization
Key Scenarios and Key Cyber Risks

Threat Factor
Capability and Motivation

Monetary Loss
(Range of) Amount of loss with ca. 90% certainty

Subjective BUT numeric
(amount or range)

THREAT CATEGORIES (ATTRIBUTION)

- Cyber Criminals
- Hacktivists
- Nation State
- Competitors
- Intentional Insider
- Unintentional Insider

CYBER RISK SCENARIOS (INCIDENT CATEGORIES)

- Data Breach
- Regulatory Breach
- Disruption
- Hacktivism
- Financial Crime
- Supplier & 3rd Party

1. Goals and Strategy
2. Managing Risks & Exposure
3. Building Cyber Resilience

3. Building Cyber Resilience

"You are going to be attacked; your computers are going to be attacked, and the question is, how do you fight through the attack? How do you maintain your operations?

Lt. Gen. Ted Bowlds

Not just a matter of if and when, but

how long?
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"One of the best defenses against cybersecurity threats is cyber resilience.

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Cyber Resilience

Cybersecurity + Business Resilience

Resilience happens when you are better able to **detect**, contain, respond to and **adapt** to cyber attacks, whilst continuing normal business operations.

Anticipate Chaos! Be Prepared!

Monica Verma

1. Goals and Strategy
2. Managing Risks & Exposure
3. Building Cyber Resilience

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