



Cyber Security in 2020

Future threats, trends and implications
on stake holders

ARCC- FIRST Symposium

Sharm El-Shaikh October 2016



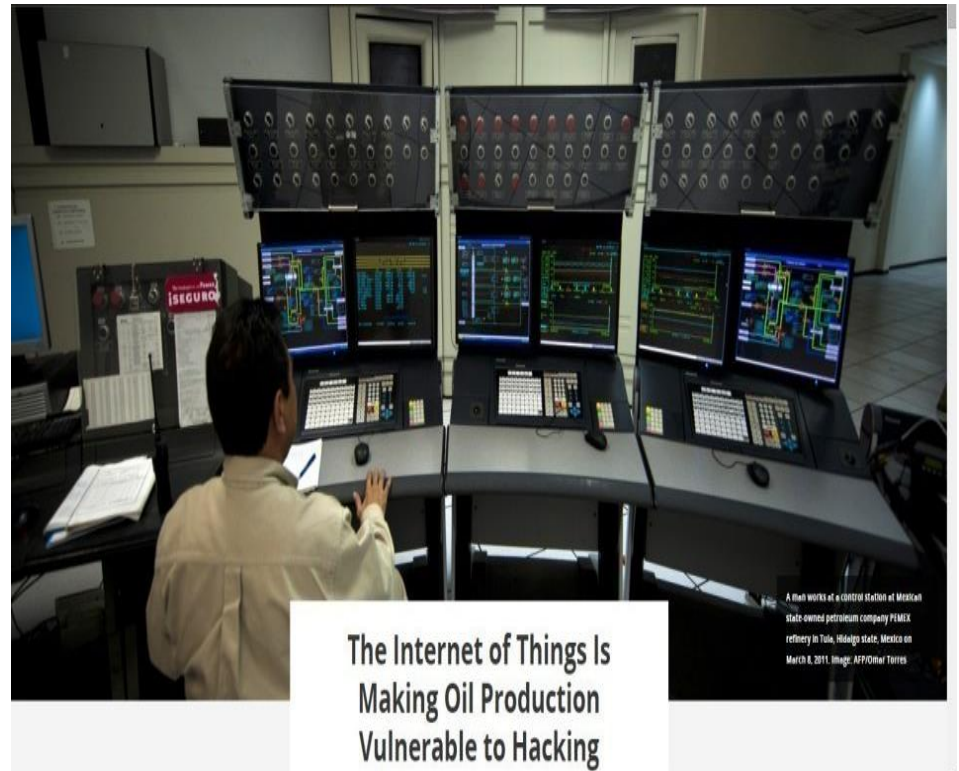
Building a better
working world

MEIA is a **Hot** Region

Duqu, Flame, Shamoon, Gauss, Stuxnet, Black Energy...etc



Hack on Saudi Aramco hit 30,000 workstations, oil firm admits
First hacktivist-style assault to use malware?

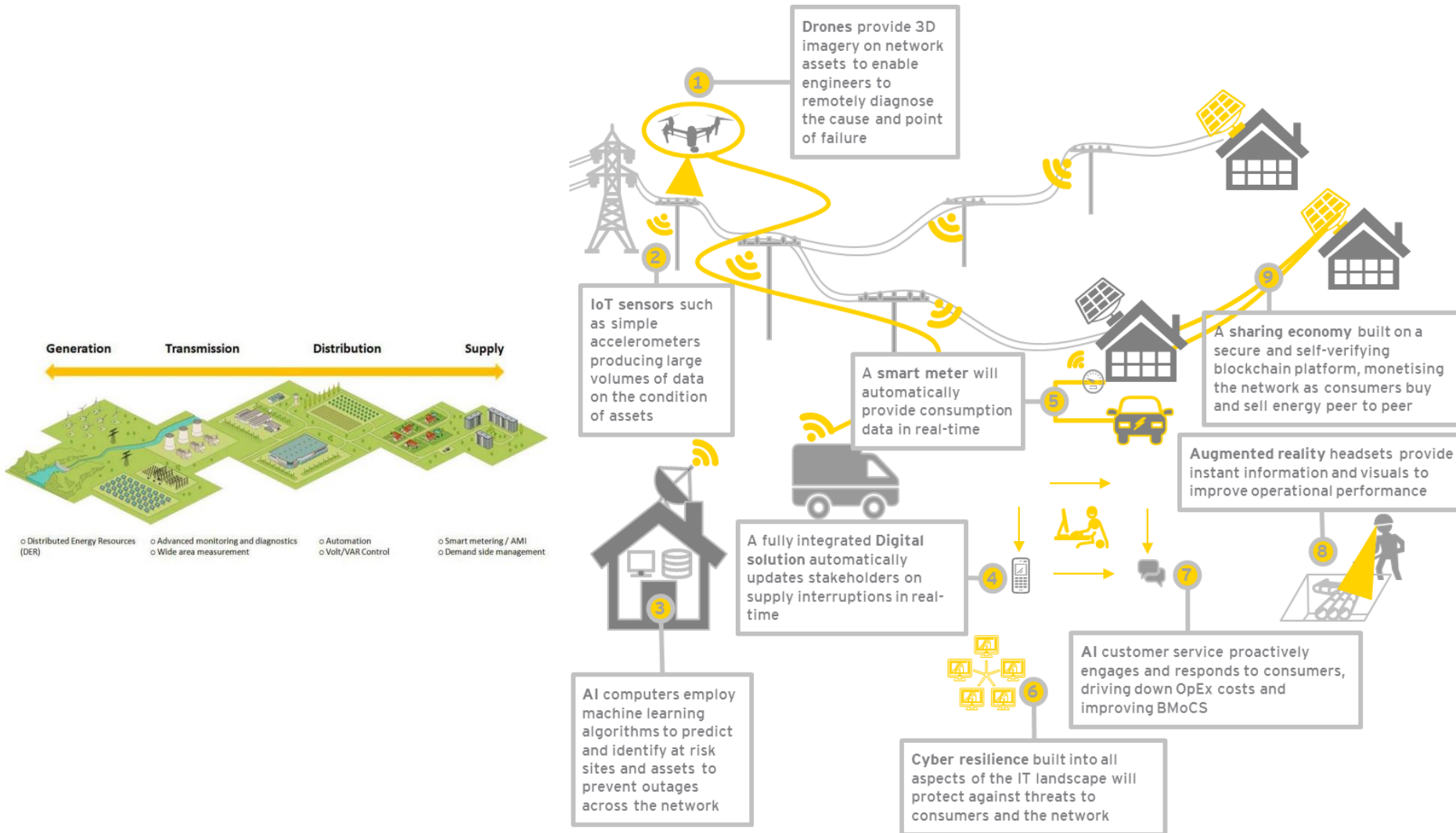


The Region's Cyber Landscape

Top 5 Countries survey (As per the ITU Cyber Index)

	C1	C2	C3	C4	C5
National Cyber Strategy	✓	✓	✓	✓	✓
Dedicated National Agency	✓	✓	✓	✓	✓
Information Security Standard	✓	✓	✗	✓	✗
ICS/OT Standards or Regulations	✓	✗	✗	✓	✗
Mandated Compliance	✗	✓	✗	✗	✗
National Compliance Roadmaps	✗	✗	✗	✗	✗
Technology Vetting labs/plans	wip	✗	✗	✗	✗
National Cyber Risk Frameworks	✓	✓	✗	✗	✗
National Cyber Academies	✗	✗	✗	✗	✗
Data Privacy laws, standards	✓	✗	✗	✗	✗

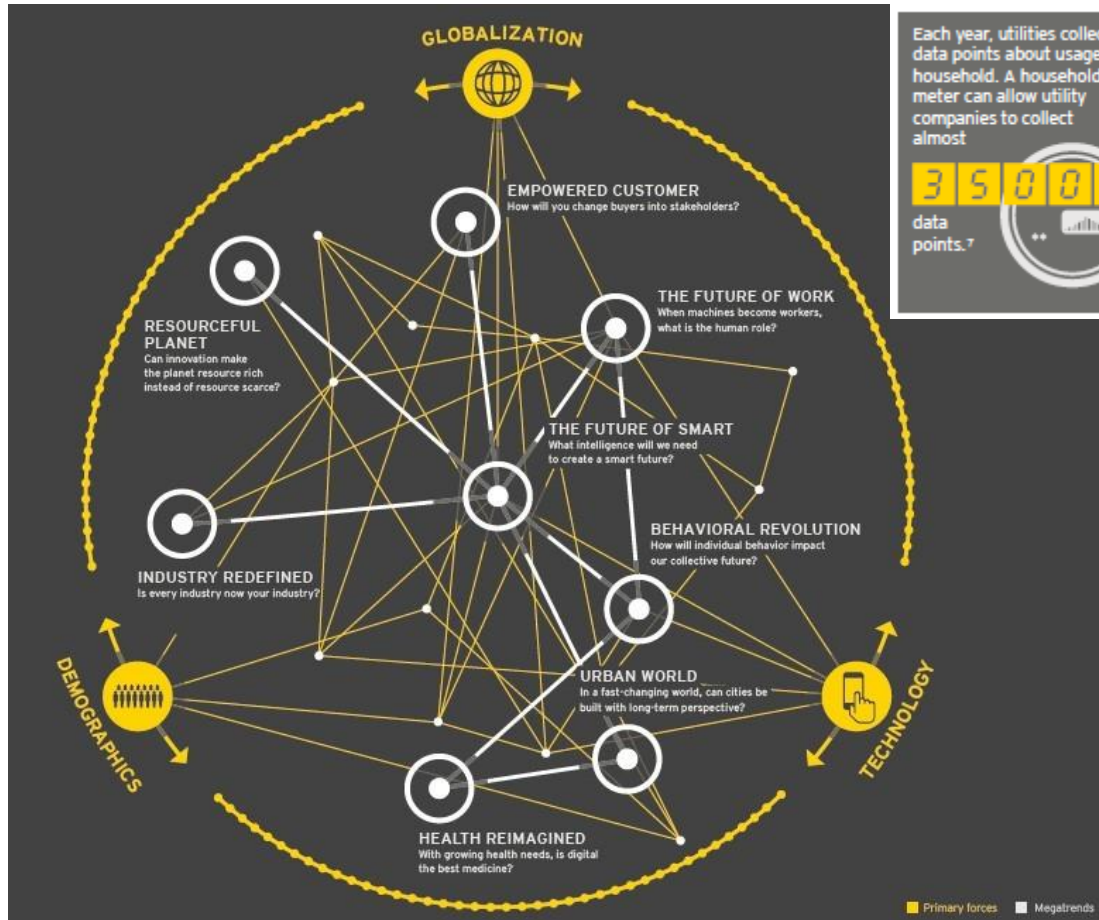
Convergence brings Complexities



Cyber Security is all around us ... (IoT)



Entire industries are changing



Each year, utilities collect four data points about usage in each household. A household smart meter can allow utility companies to collect almost

35000
data points.⁷

For US drivers, autonomous vehicles could free up almost

50 billion hours each year.⁸

In 2015, smart cities used

1.1 billion connected things.

By 2020, that figure will rise to

9.7 billion.⁹

▶ Norway completely Banning Fuel-Powered cars by 2025

2020's World

The ever-expanding IoT world

IoT is already integrated across several areas where technology adoption is accelerating. The key areas of leading IoT integration are:

Smart life

Innovative, state-of-the-art technology aims to make life simpler and safer for the consumer. Smart life includes:

- ▶ **Health care** – a new patient-centric model is emerging
- ▶ **Consumer and retail businesses** – the age of the empowered customer and co-creator
- ▶ **Banking convergence** – new models for banking and finance
- ▶ **Insurance** – moving from statistics to individual fact-based policies
- ▶ **Public services** – driving efficiency and convenience for governments and citizens

Smart mobility

Real-time route management and solutions aim to make travel more enjoyable and transportation more reliable. Smart mobility includes:

- ▶ **Autonomous driving and the connected car**
- ▶ **Urban mobility** – smart traffic management
- ▶ **Interurban mobility** – connecting across the transport networks
- ▶ **Fare management and payment solutions**
- ▶ **Distribution and logistics**
- ▶ **Fleet management**

Smart city

Innovations will aim to improve the quality of life in cities, encompassing security issues and energy resourcefulness. Smart city includes:

- ▶ **Smarter management of city infrastructure** – using Big Data analytics
- ▶ **Collaboration across multiple and disparate agencies** – using cloud technologies
- ▶ **Real-time data collection, enabling quick response** – using mobile technologies
- ▶ **Enhanced security** – improved public safety and law enforcement, and more efficient emergency response
- ▶ **Better city planning** – improved schematics, project management and delivery
- ▶ **Networked utilities** – smart metering and grid management
- ▶ **Building developments** – more automation, and better management and security

Smart manufacturing

Factory and logistics solutions will be created specifically to optimize processes, controls and quality. Smart manufacturing includes:

- ▶ **Machine learning** – intelligent, automated decision-making
- ▶ **Machine communications** – more interaction and collaboration
- ▶ **Networking** – networked control and management of manufacturing equipment
- ▶ **Optimized processes** – rapid prototyping and manufacturing, improved processes and more efficient supply chain operations
- ▶ **Proactive asset management** – via preventive diagnostics and maintenance
- ▶ **Better infrastructure integration** – overcoming the interface standards conundrum

Are we Ready ?

70%

of the most commonly used IoT devices contain vulnerabilities.



36%

of respondents do not have a threat intelligence program.**



37%

say that real time insight on cyber risk is not available.**

Are we Ready ?



56%

of respondents say that it is “unlikely or highly unlikely” that their organization would be able to detect a sophisticated attack.**



58%

of organizations do not have a role or department focused on emerging technologies and their impact on information security.**

Cyber Trends to Watch for

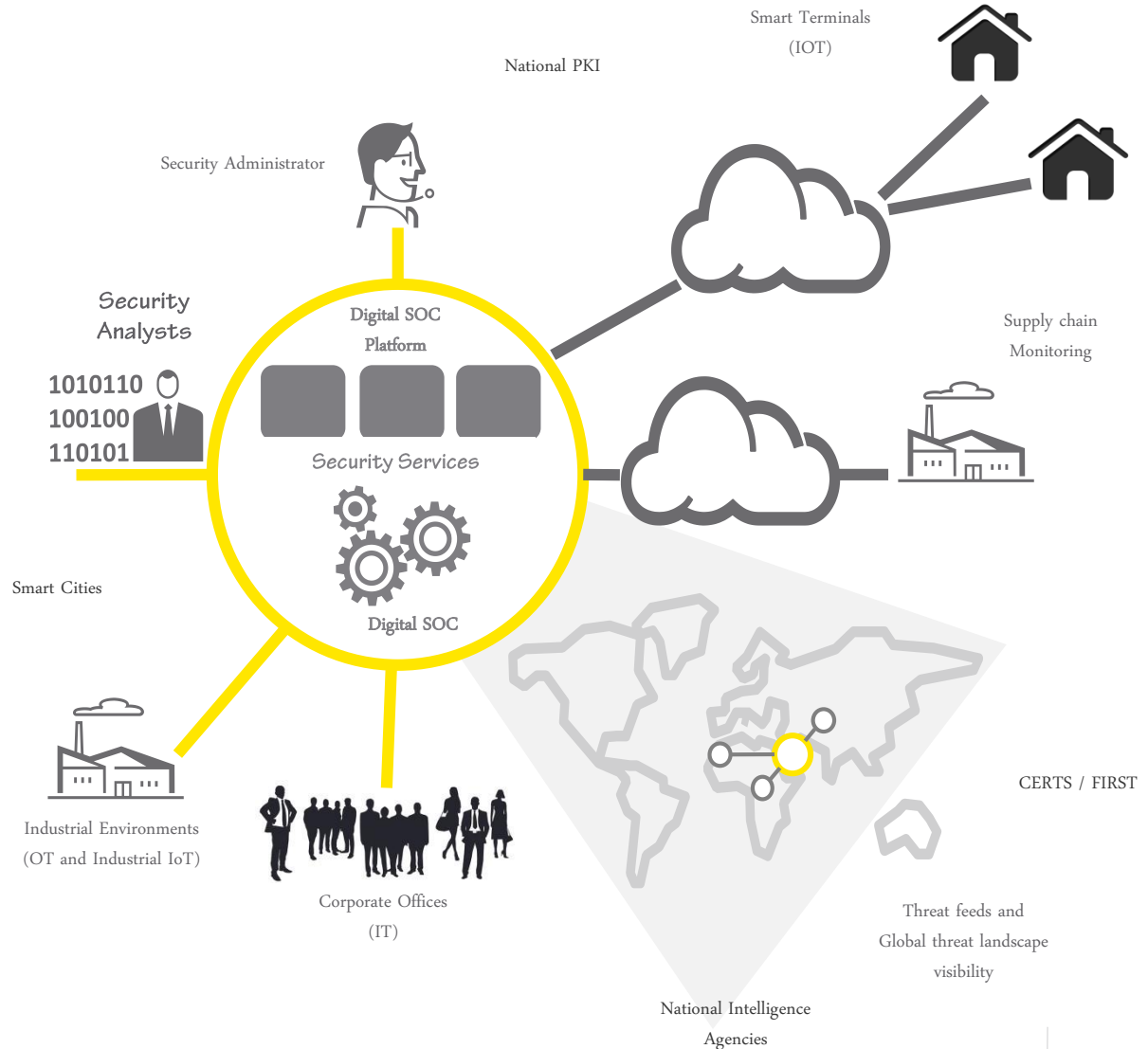
1. Threats from the inter-connected world (IOT)
2. Rapid growth in digital identities
3. Digitization of legacy National critical infrastructures
4. Hyper or lack of regulation leading to a more complicated landscape
5. Existing models for defense are no longer appropriate

The need for Constant Monitoring and Analytics

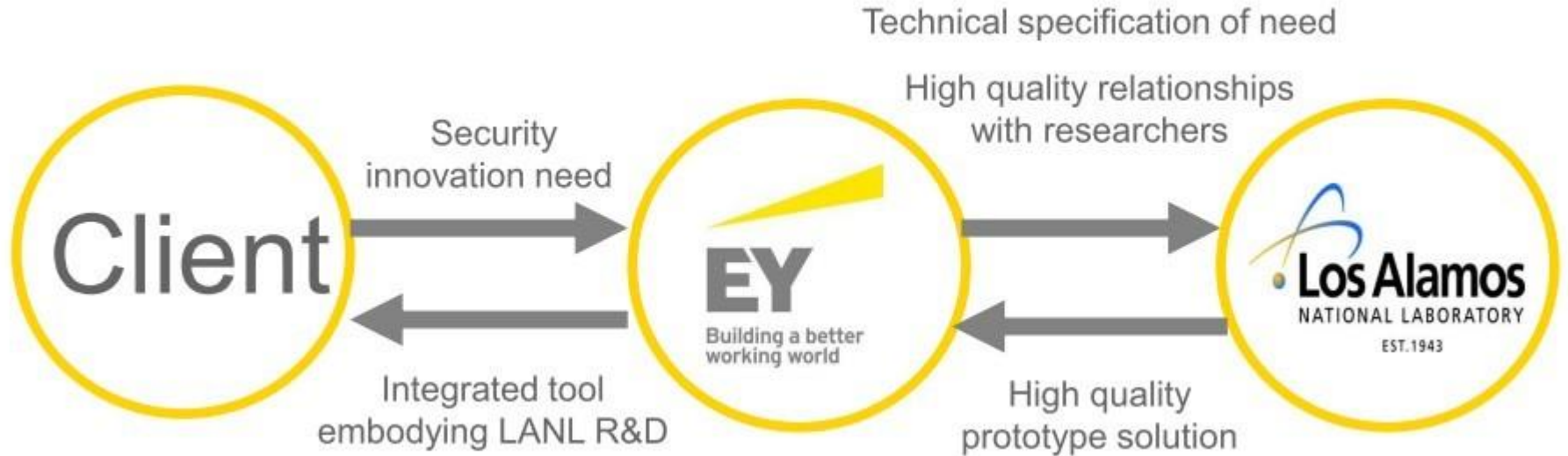
Cyber detection in the Digital world

Digital Security centre will enhance the capabilities and value propositions beyond traditional SOC's.

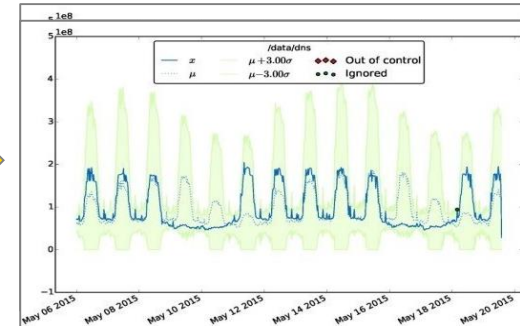
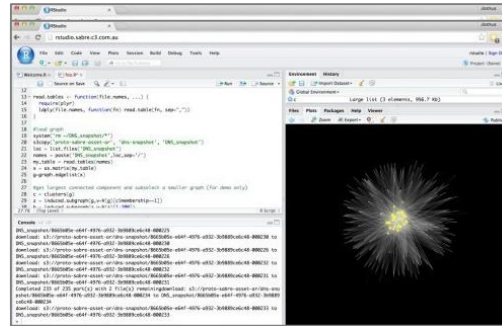
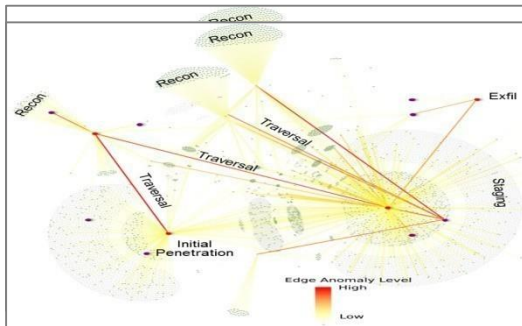
Digital SOC's will provide an end to end threat visibility and awareness, this is essential for today's hyper connected world.



Cyber Analytics is here in MEIA



Continuous Innovation through Data Science

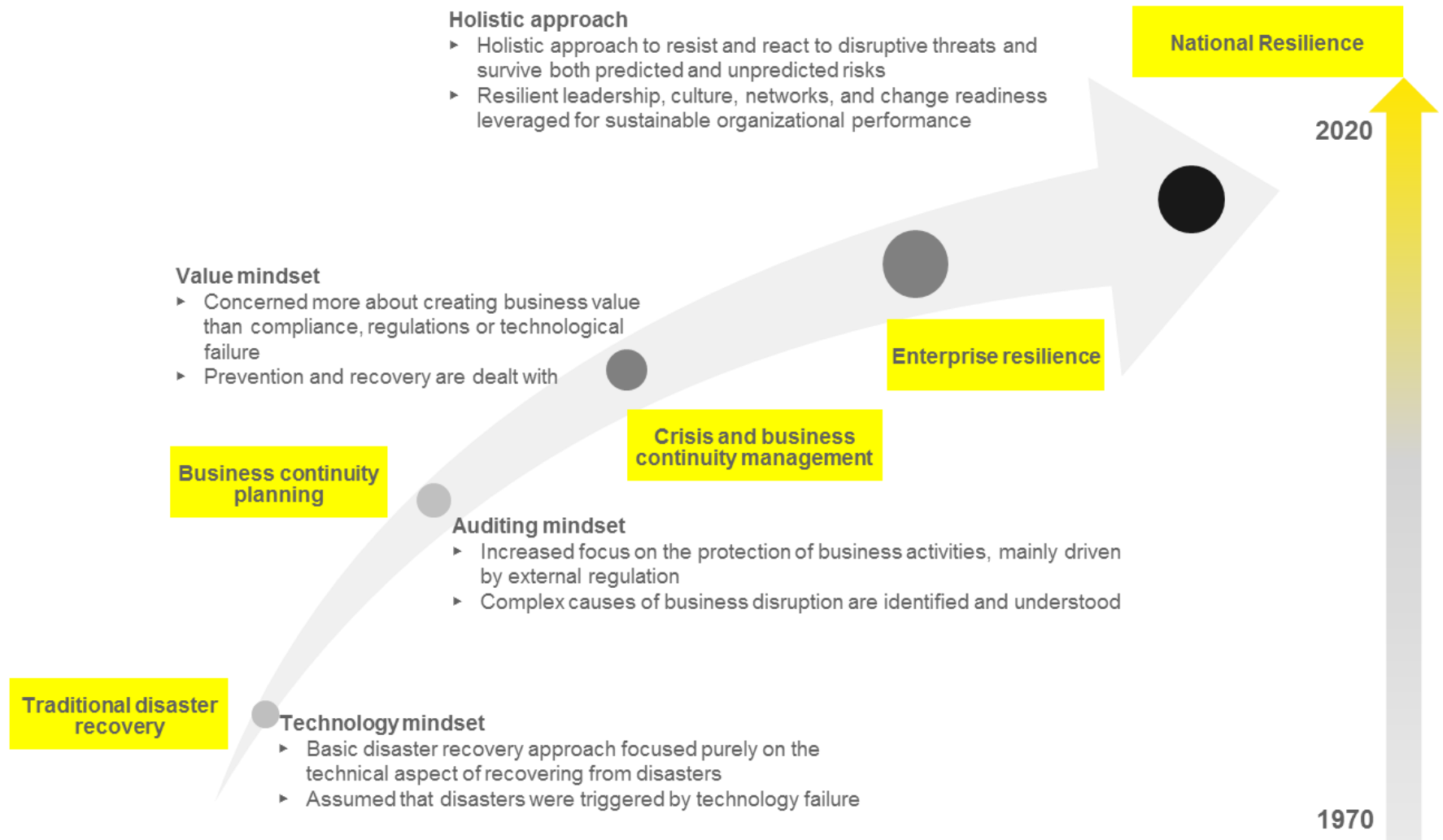


The need for Resilience and a MEIA Case Study

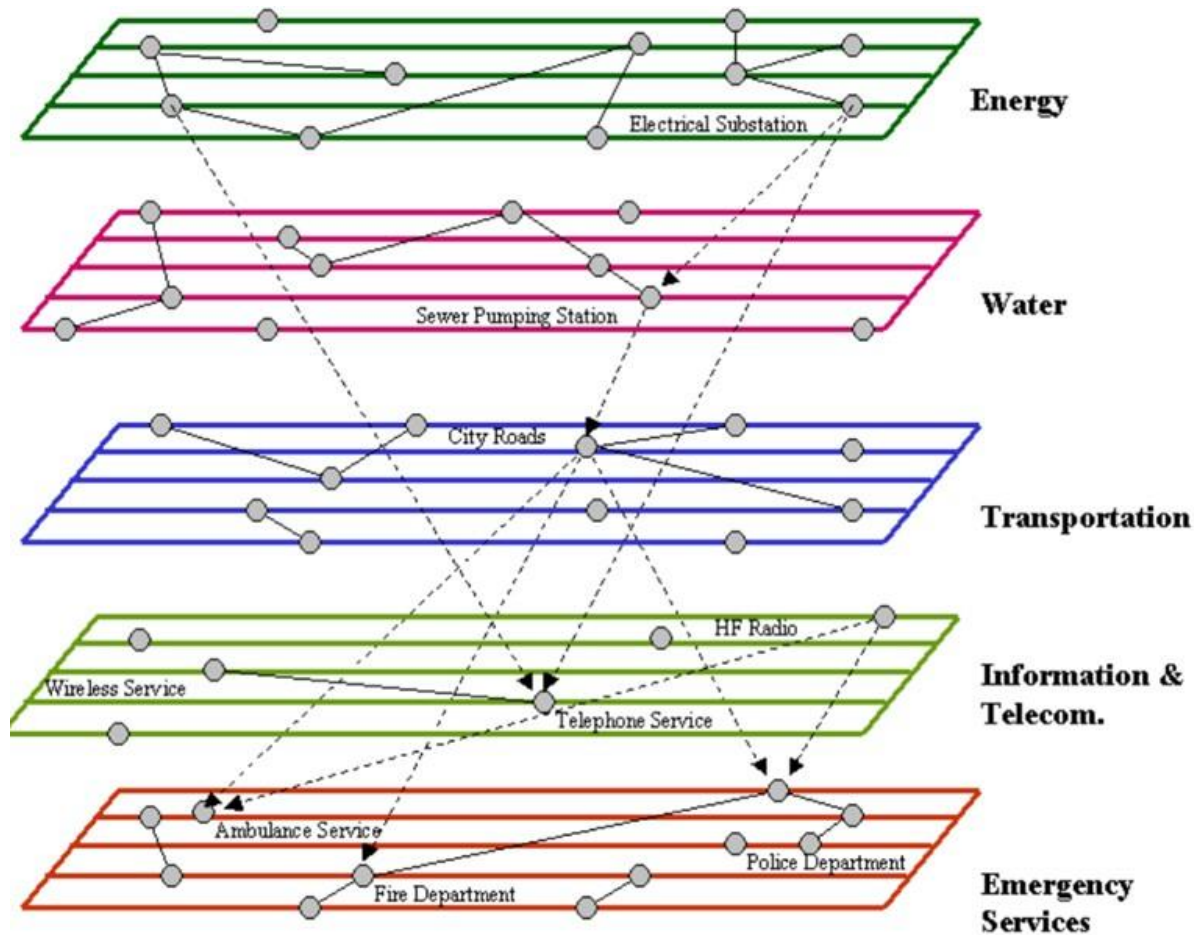
Integrated Risk Transformation



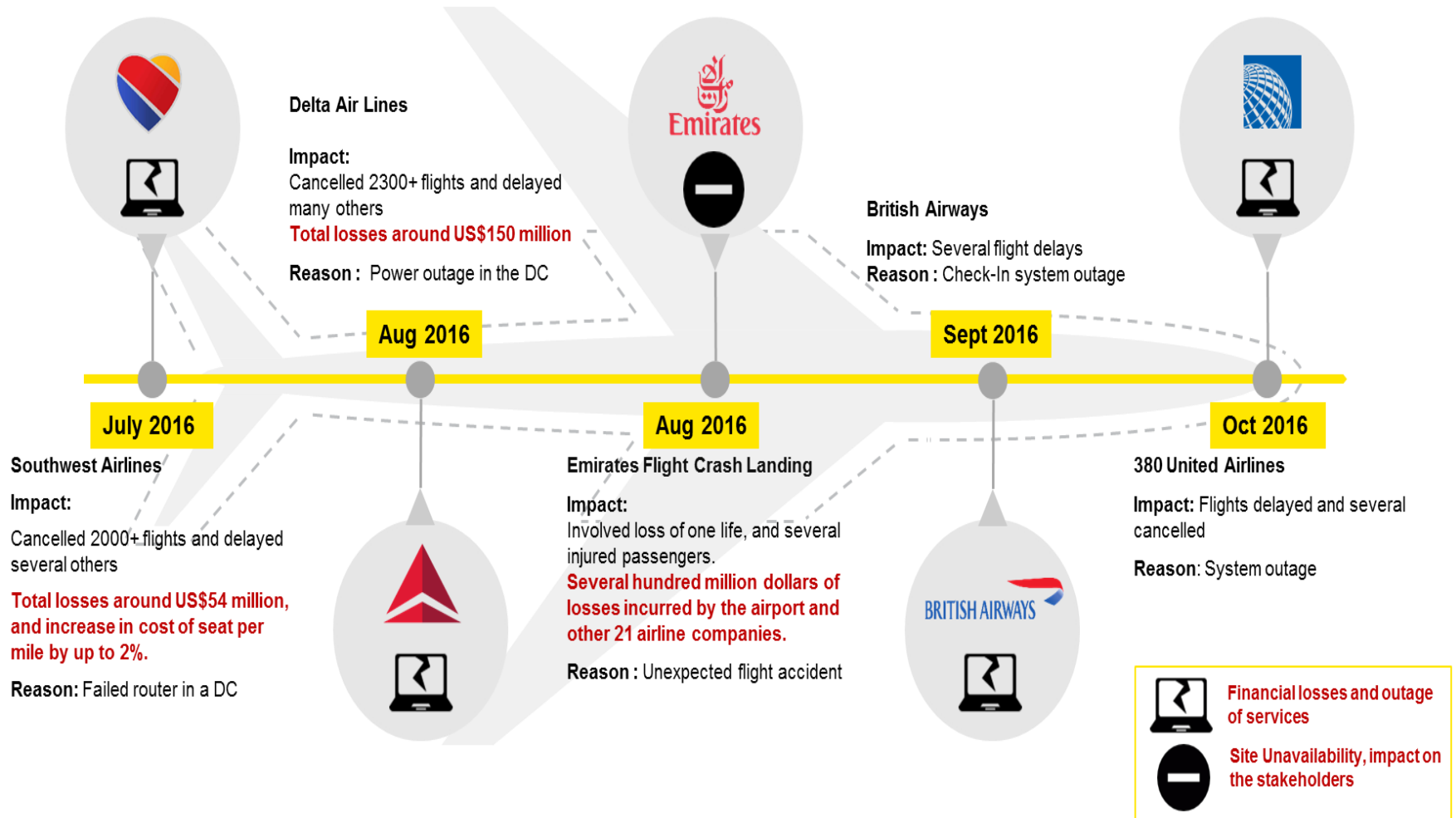
Evolution of Resilience



Resilience Exercises at a National Level and sectors Inter-dependence



Increased incidents in airline industry



Case

A Plane caught fire in Dubai International Airport

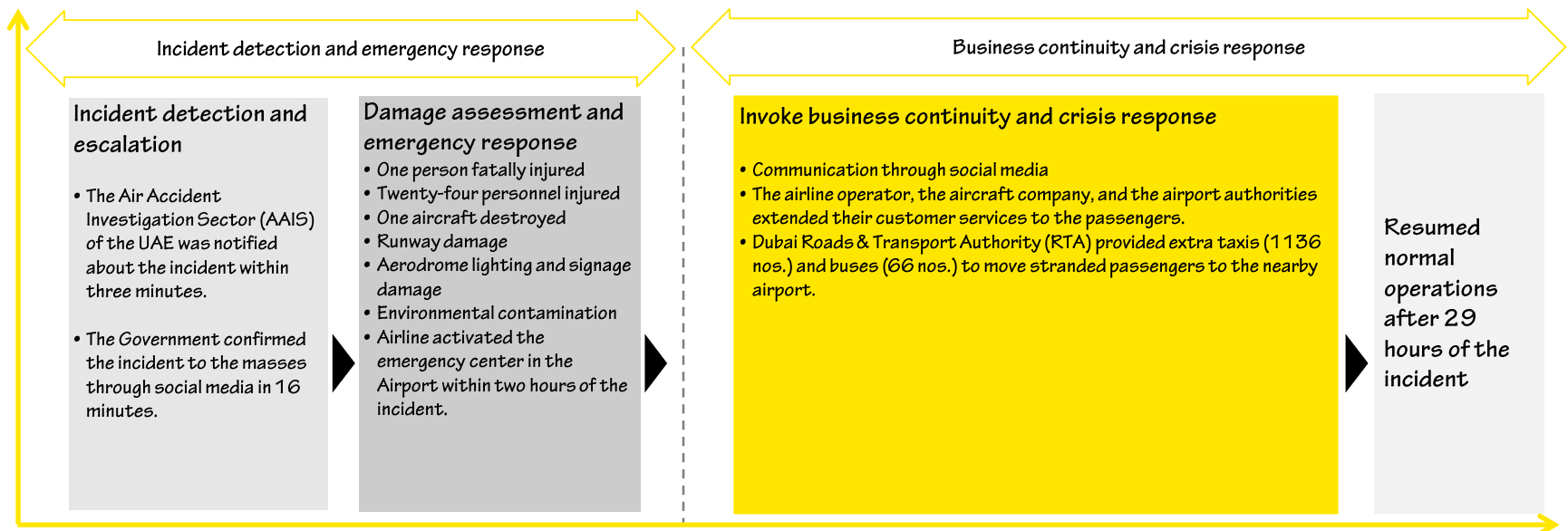


Quick facts about Dubai Airport

- One of the aviation hubs in the world
- World's third busiest international airport (2015)
- 78 million passengers traveled in 2015
- Airport had an Aerodrome Emergency Plan (AEP), revised partly in February 2015

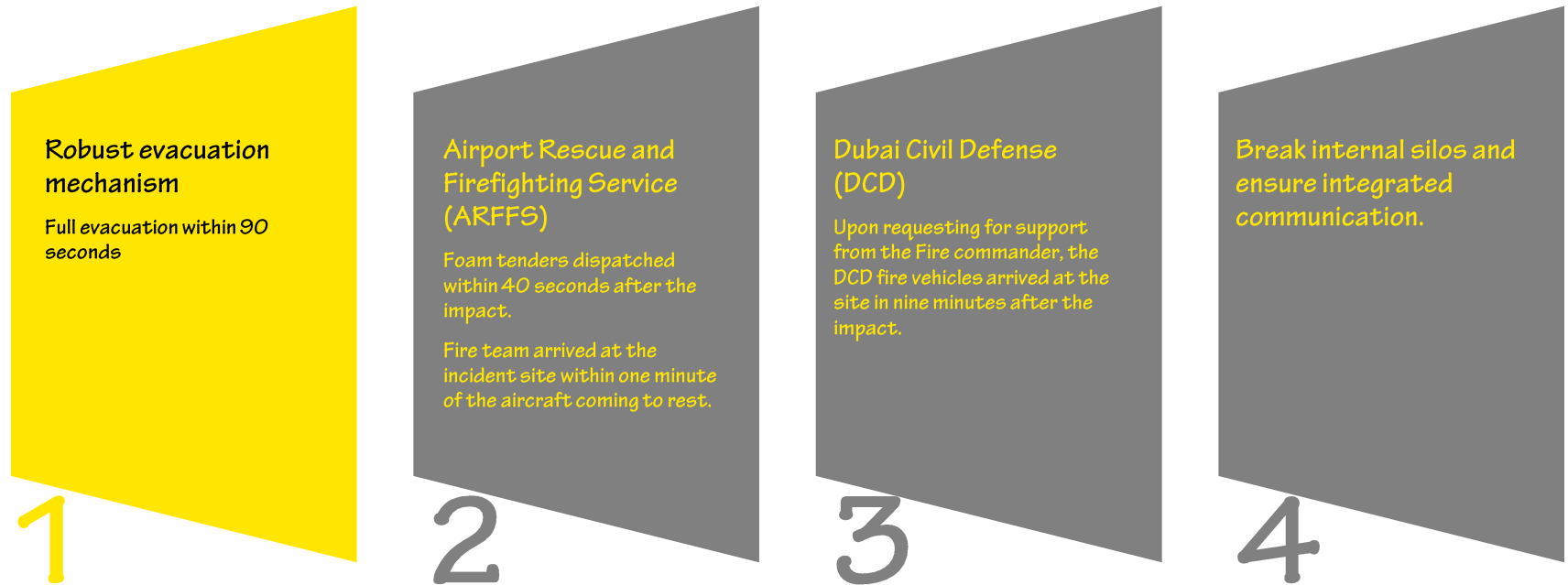
Airport's operations disrupted for 29 hours

Incident life cycle

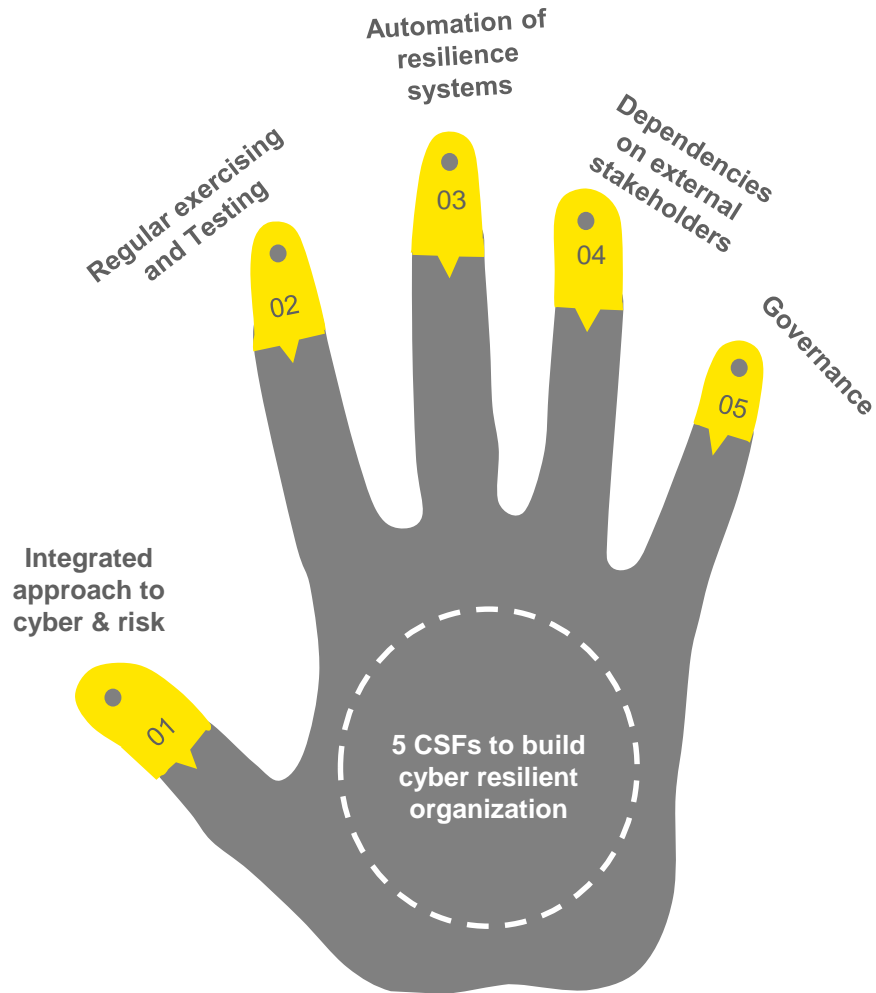


Recovery timeline

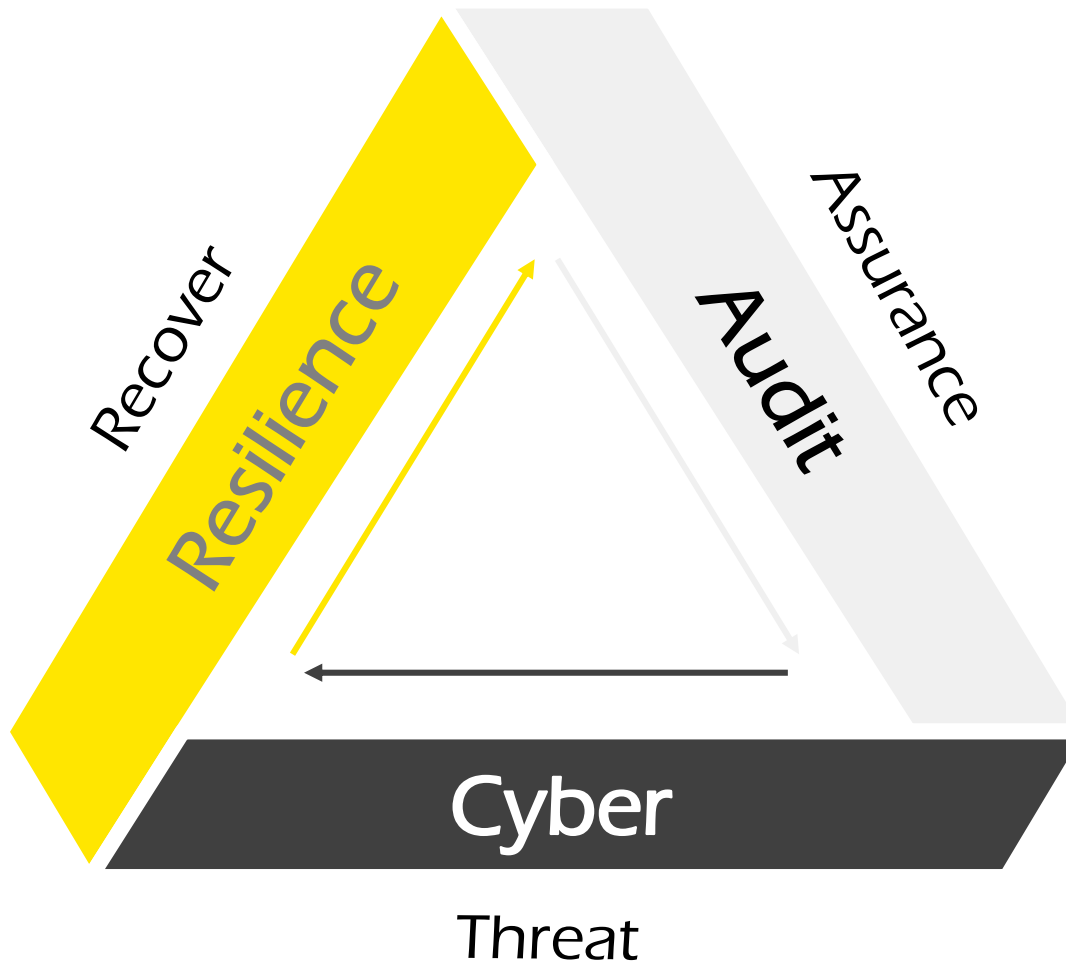
Commendable coordination resulted in effective crisis response



Critical Success Factors for Cyber Resilience



CRA



- Cyber, Resilience and Audit work together to build trust to the business and consumer
- Cyber = continuous monitoring
- Audit = assurance
- Resilience = availability & recovery

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