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The Art of Cyber Risk Management

Asaf Weisberg CISM, CISA, CRISC, CEGIT

Amsterdam, 11.4.2019

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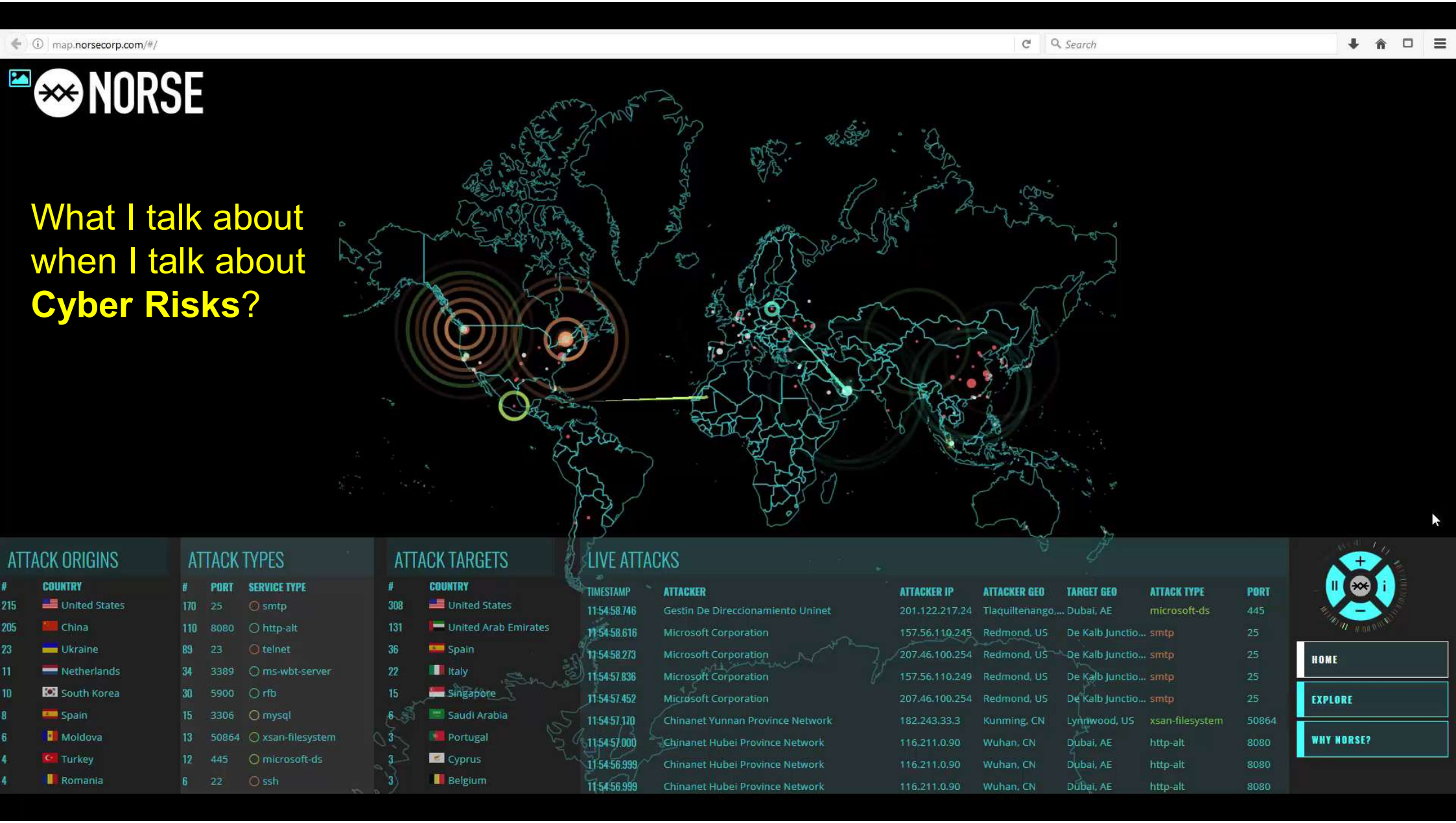
About the Presenter

- *Asaf Weisberg*, CISM, CRISC, CISA, CGEIT
- Founder & CEO, introSight Ltd.
- Immediate Past President of the ISACA Israel Chapter
- 2019-2020 Director, ISACA Int'l Board of Directors
- Over 25 years of hands-on, managerial and mentoring experience
- Develops Cybersecurity Methodological tools & exercise them in the field


1969
FIRST MANNED MOON LANDING
50 ISACA


map.norsecorp.com/#/
Search
NORSE
What I talk about when I talk about **Cyber Risks**?
ATTACK ORIGINS
COUNTRY
215 United States
205 China
23 Ukraine
11 Netherlands
10 South Korea
8 Spain
6 Moldova
4 Turkey
4 Romania
ATTACK TYPES
PORT SERVICE TYPE
170 25 smtp
110 8080 http-alt
89 23 telnet
34 3389 ms-wbt-server
30 5900 rfb
15 3306 mysql
13 50864 xsan-filesystem
12 445 microsoft-ds
6 22 ssh
ATTACK TARGETS
COUNTRY
308 United States
131 United Arab Emirates
36 Spain
22 Italy
15 Singapore
6 Saudi Arabia
3 Portugal
3 Cyprus
3 Belgium
LIVE ATTACKS
TIMESTAMP ATTACKER ATTACKER IP ATTACKER GEO TARGET GEO ATTACK TYPE PORT
11:54:58.746 Gestin De Direccionamiento Uninet 201.122.217.24 Tlaquiltenango,... Dubai, AE microsoft-ds 445
11:54:58.616 Microsoft Corporation 157.56.110.245 Redmond, US De Kalb Junctio... smtp 25
11:54:58.273 Microsoft Corporation 207.46.100.254 Redmond, US De Kalb Junctio... smtp 25
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11:54:57.170 Chinanet Yunnan Province Network 182.243.33.3 Kunming, CN Lynnwood, US xsan-filesystem 50864
11:54:57.000 Chinanet Hubei Province Network 116.211.0.90 Wuhan, CN Dubai, AE http-alt 8080
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HOME
EXPLORE
WHY NORSE?

Why Business Alignment?

Hackers Wipe VFEmail Servers, May Shut Down After Catastrophic Data Loss

Technology

Boeing Hit by Cyberattack, Says Jetliner Production Not Affected

By Julie Johnsson
March 29, 2018, 2:03 AM GMT+3 *Updated on March 29, 2018, 3:16 AM GMT+3*

Hackers 'scramble' patient files in Melbourne heart clinic cyber attack

Federal agencies investigating breach, reported to be a ransom demand

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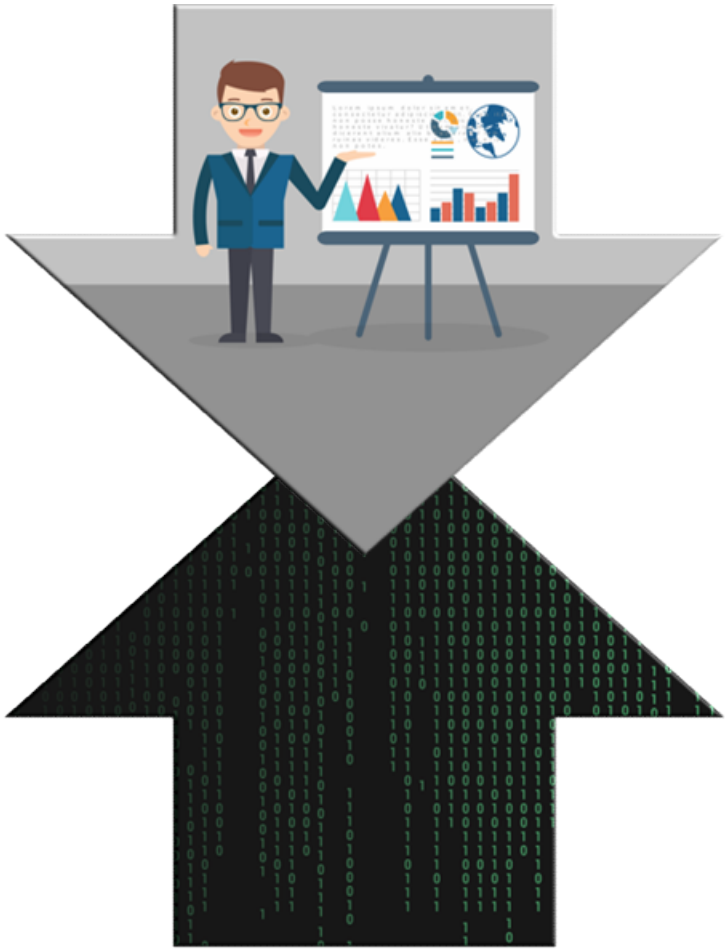
Bottom-UP or Top-Down?

Why not Connect the Two Approaches?



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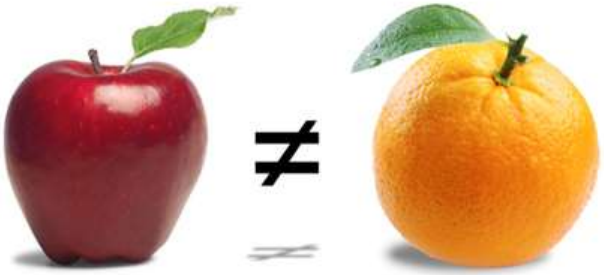
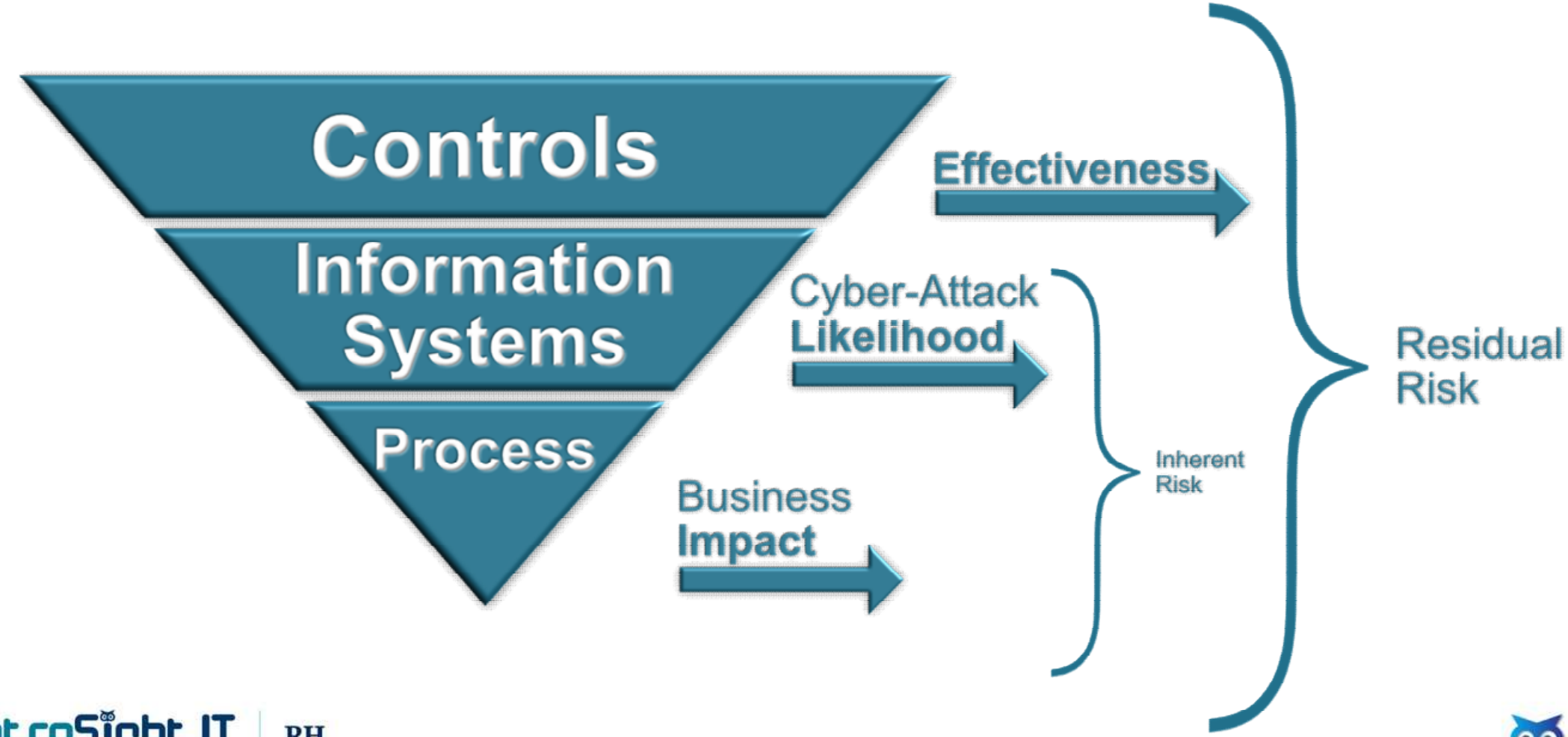
A Business Oriented Cyber Risk Management Model

The heart of the BCRM is its Mathematical algorithm:

- The algorithm **calculates** the ***Residual Business Risk to processes***, as a function of *Inherent Business Risk* & *IT controls effectiveness*
- **A Semi-Quantitative** approach, enhanced with ranks and weights, provides granular risk prioritization
- **Prioritization** of the risk reduction plan is based on the calculated *Residual Business Risk*
- **Slicing & Dicing** the calculated data allows analyzing risks from various views



Working with the model



Cyber Risks: "Traditional" Top 10 View

Attack Surface	Process	Residual Risk	
IT Operations	Database management	9.67	H
Information Systems	Long-term savings operations	8.97	H
IT Operations	Storage security management	8.03	H
Web Applications	Customers digital channels management	7.88	M
Info Systems	Health insurance claims	7.79	M
Perimeter	Facility physical security management	7.61	M
Perimeter	Firewall and Perimeter security management	7.54	M
Web Applications	3rd party digital channels management	7.43	M
Information Systems	Life insurance claims	7.28	M
IT Operations	Mobile device security management	7.26	M

Rank	Range
L	0 – 3.99
M	4 – 11.99
H	12 – 25

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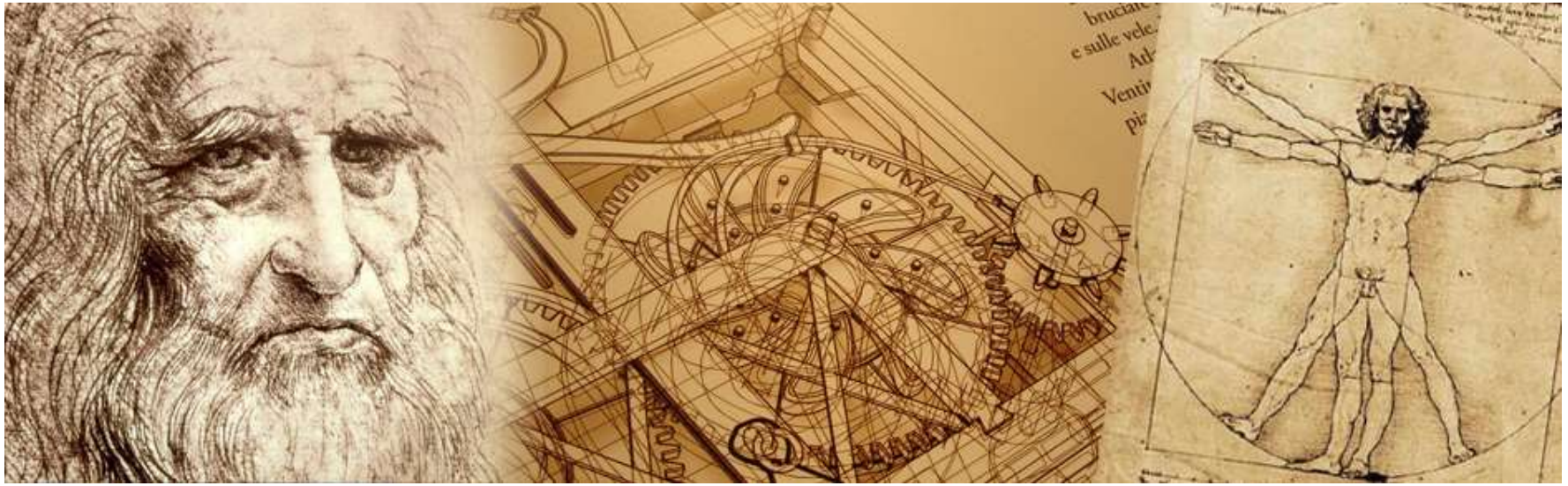

Efficiently Reduce Cyber Risks According to Business Priorities

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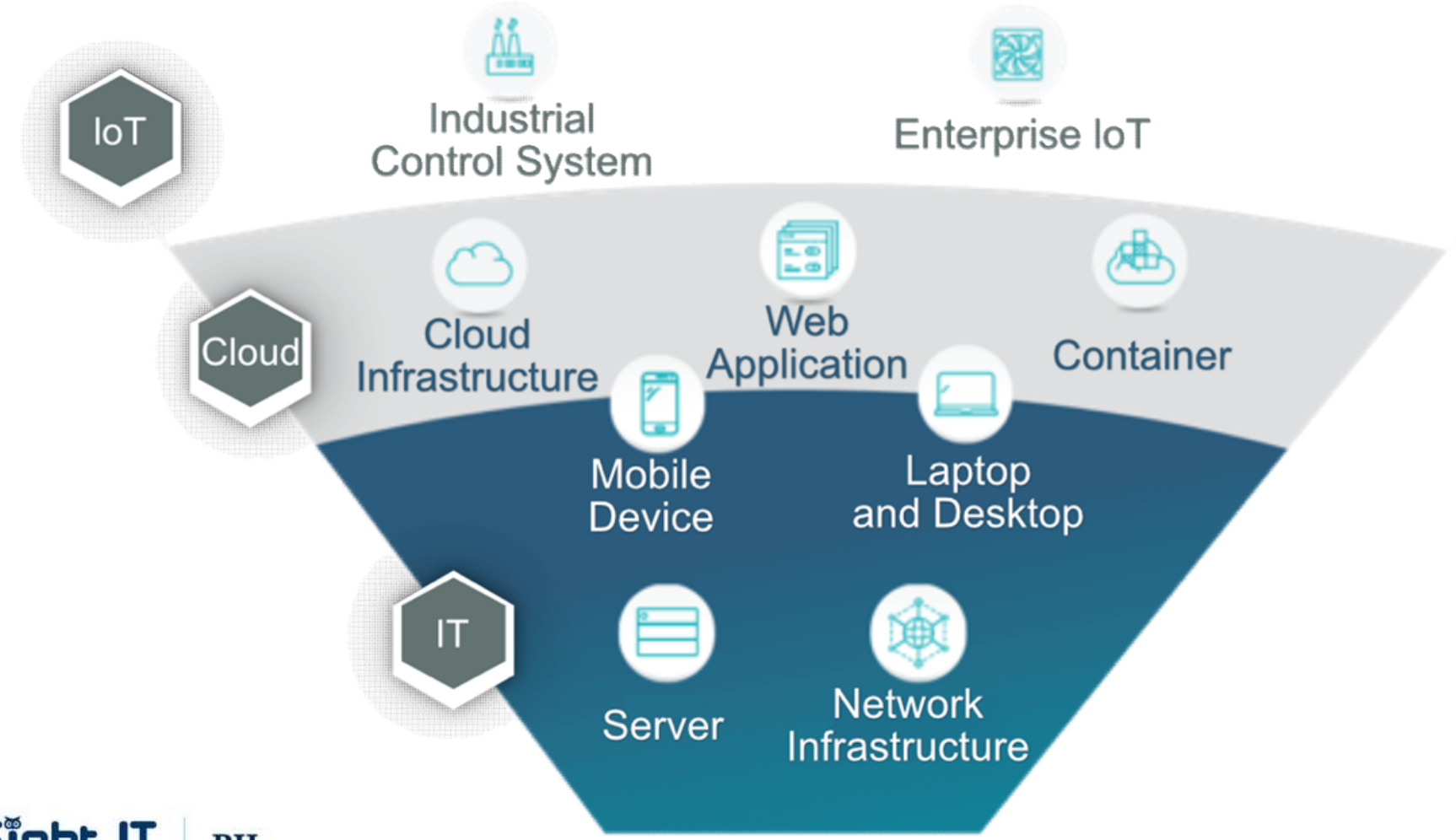
Cyber Risks: Process → Systems View

Business Process	Risk		Inherent Risk	Controls Effect'	Residual Risk
Long term savings operations	PII **Leakage** as a result of a Cyber attack		22.63 H	2.58 L	8.97 H
Due On	**System**	**# of Supported Processes**	**Inherent Risk**	**Controls Effect'**	**Residual Risk**
2018	Digital Vaults	2	21.84 H	2.71 L	8.02 H
2018	Messaging	11	16.58 H	1.74 L	7.94 M
2018	SAP	7	16.58 H	2.91 L	6.27 M
2019	Policy sale	2	10.26 H	2.04 L	4.86 M
2019	Digital archive	3	10.26 H	2.73 L	3.73 L
—	Digital forms	1	5.00 M	4.00 M	0.80 L

Think like an Attacker

https://resources.infosecinstitute.com/the-psychological-profile-of-a-hacker-with-emphasis-on-security-awareness/#gref

Attack Surfaces



Cyber Risks: Attack Surface View

Attack Surface	Process	Residual Risk	
Perimeter	Facility physical security management	7.61	H
Perimeter	Firewall management	7.54	H
Perimeter	Remote access to network	4.02	M
Web Applications	Customers digital channels management	7.88	M
Web Applications	Business partners digital channels MGMT	7.43	M
Web Applications	Suppliers digital channels management	6.89	M
Information Systems	Long-term savings operations	8.97	H
Information Systems	Health insurance claims	7.79	M
Information Systems	Life insurance claims	7.28	M
IT Operations	Database management	9.67	H
IT Operations	Storage security management	8.03	H
IT Operations	Mobile device security management	7.26	M

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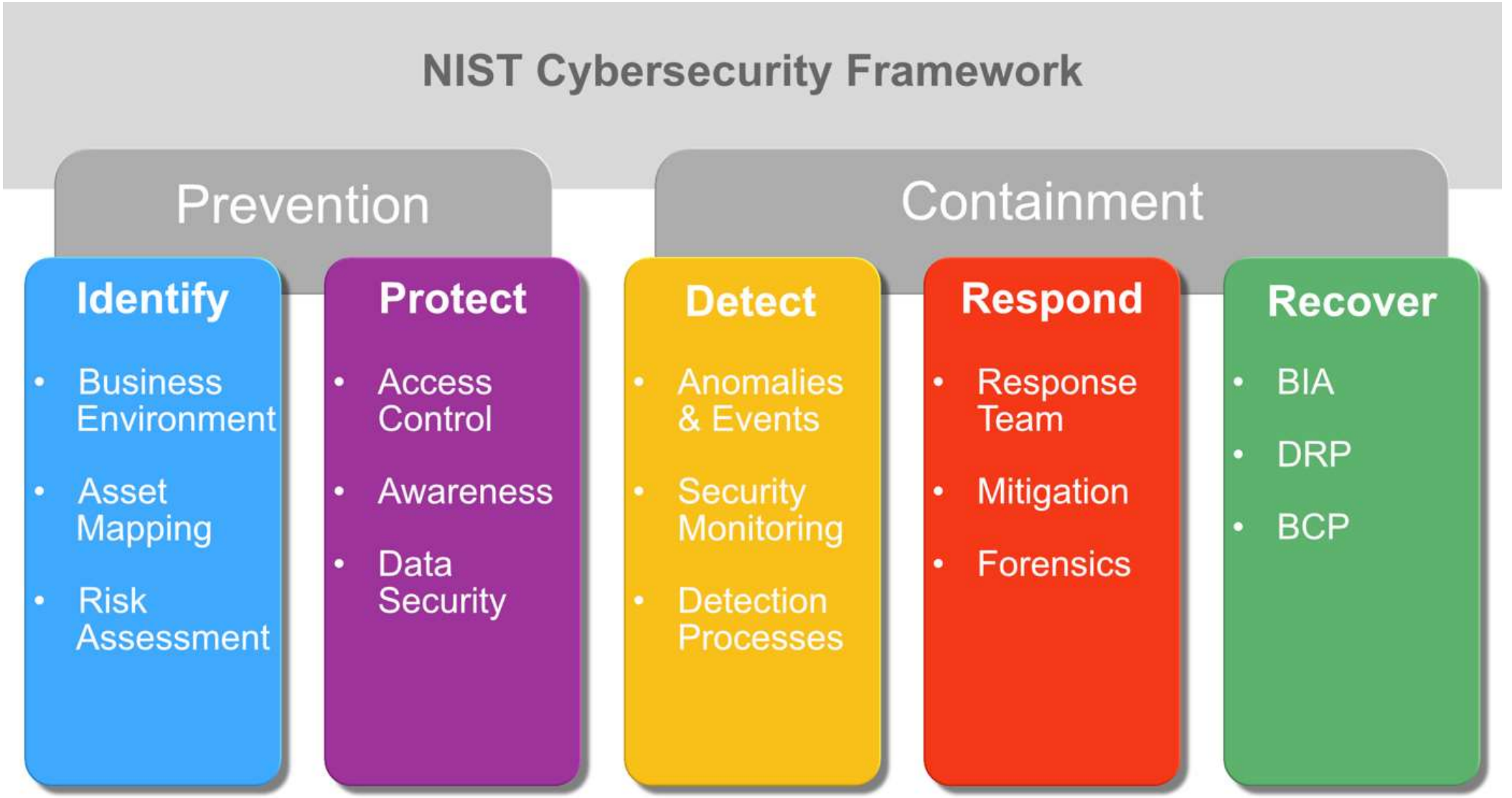
We are going through a Paradigm Shift!



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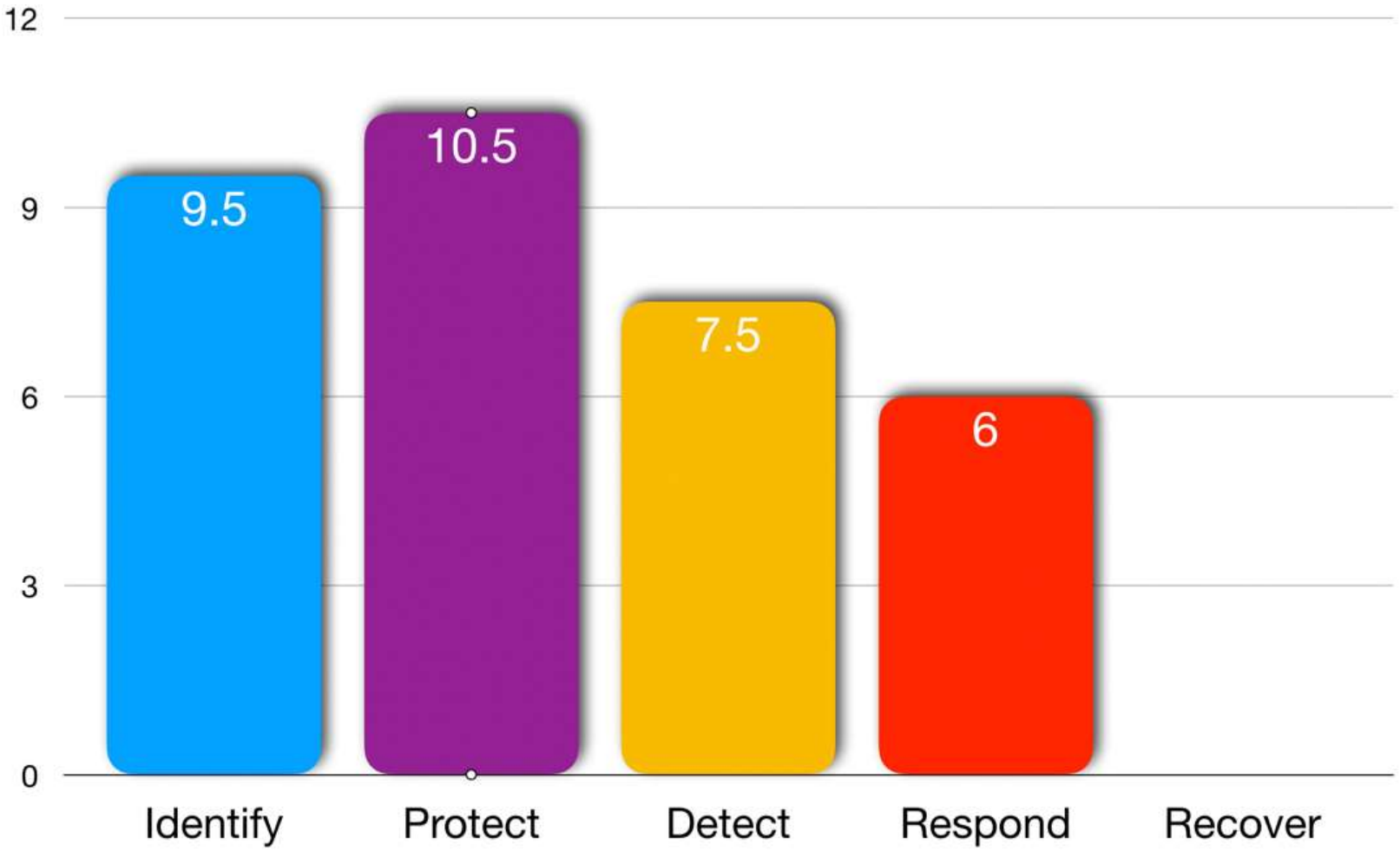
From Prevention to Containment

Organizational View: Controls Effect' by NIST Functions

Current state:

Reasonable "Traditional" controls

Evolving "Cyber-Era" controls



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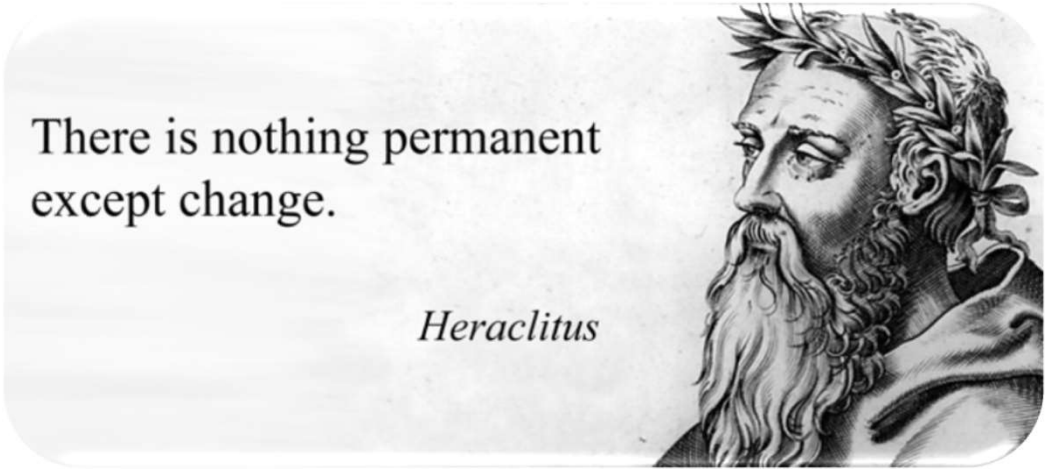
An Adaptive Cyber Risk Management Model

- ***Risk management*** is a ***long term process,*** changes are inevitable. The BCRM model allows to:
  - Change risk factors, as new threats emerge
  - Add new controls to mitigate existing risks, as exposure changes
  - Add or remove business processes & information systems
  - Change ranks & weights, according to organization's policy
- **Continuously** update the BCRM with:
  - Risk assessment sprints results
  - Internal audit findings



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Takeaways

- To establish **Business alignment** - start at the process level
- Adjust resources allocation to support **shifting** from ***Prevention*** to ***Containment***
- **Think like an attacker** - Consider emerging as well as traditional *Attack Surfaces*
- **Prioritize** *Cyber Risk Reduction* activities, according to ***Residual Business Risks***
- Adopt **Continuous** Risk Management practices
- **Measure the change** of *Residual Business Risks, as a result of IT investments*

Cyber Risk Management is Art, make sure it is based on facts

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Thank You!

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