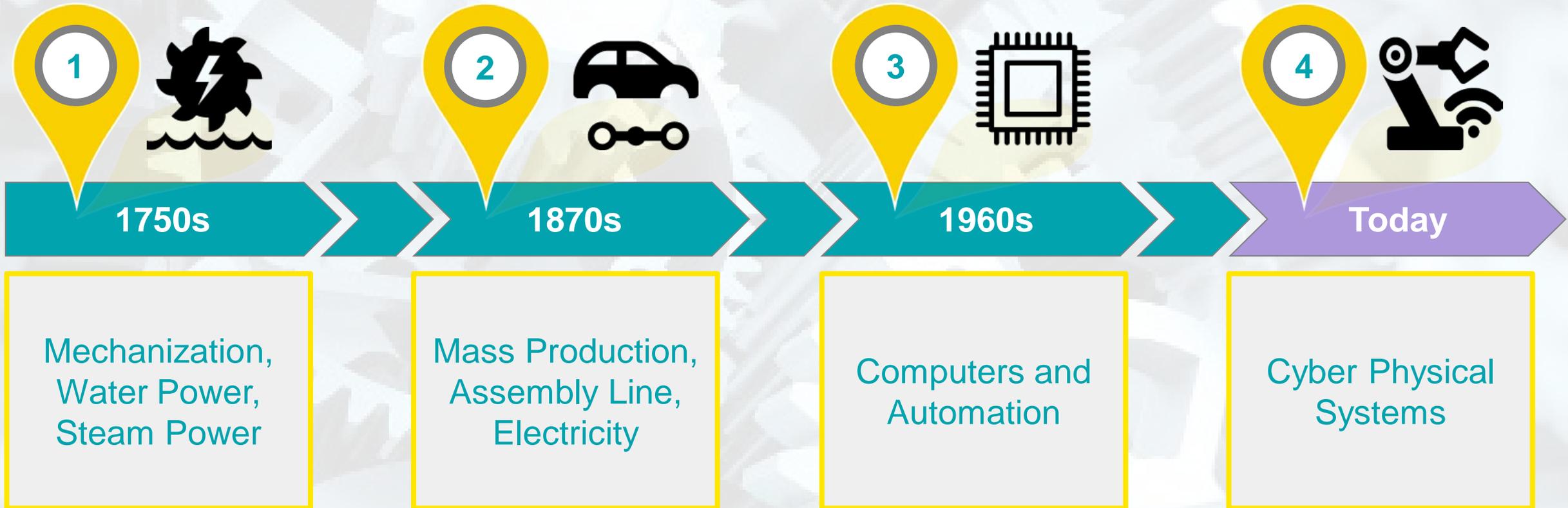


Cyber Risk Management In the Era of the 4th Industrial Revolution

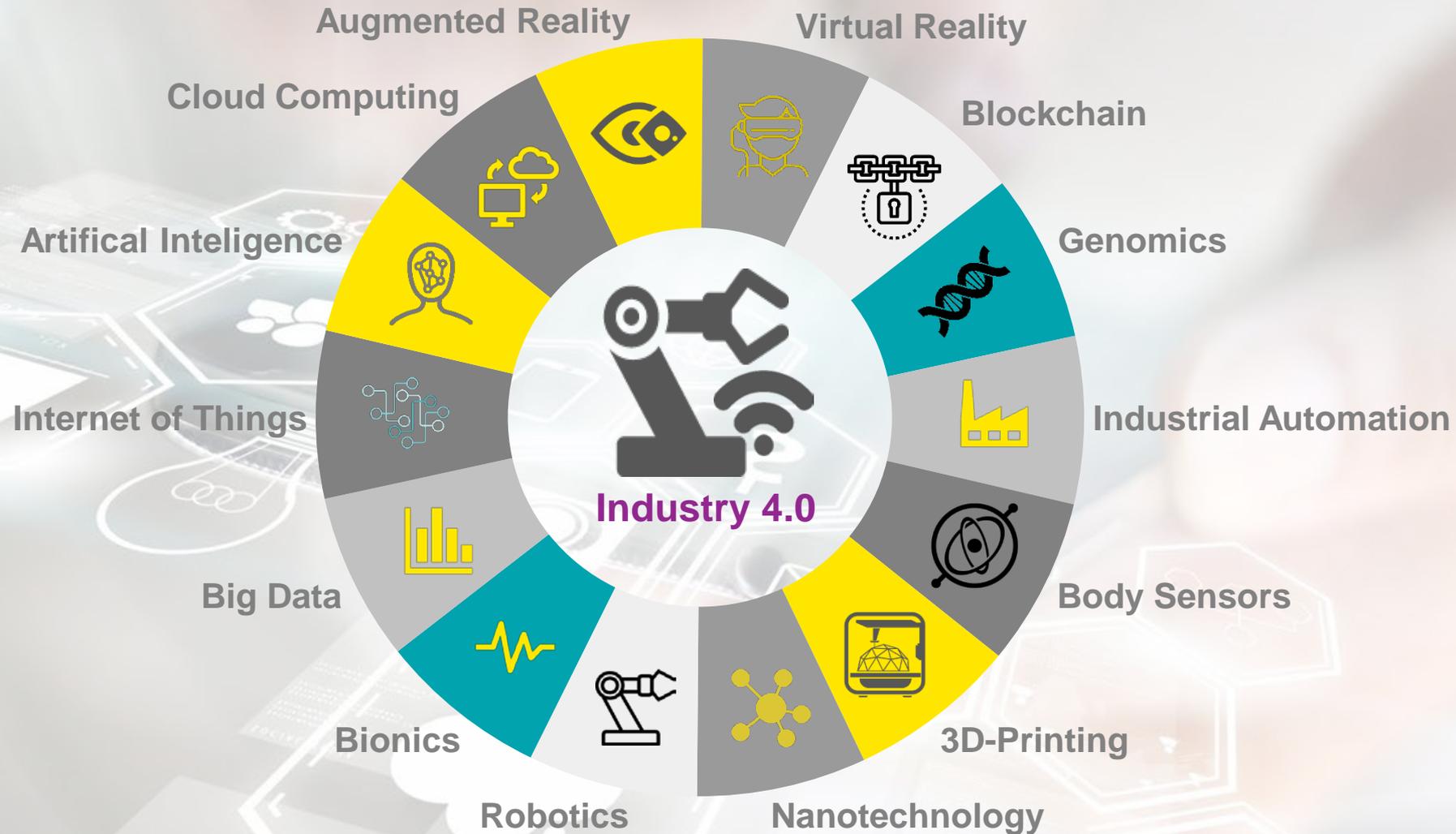
Kuwait Risk Management Conference

23 January 2019

We are currently in the era known as the 4th Industrial Revolution



Cyber Physical Systems represent the convergence of information technology, physical systems, and automation

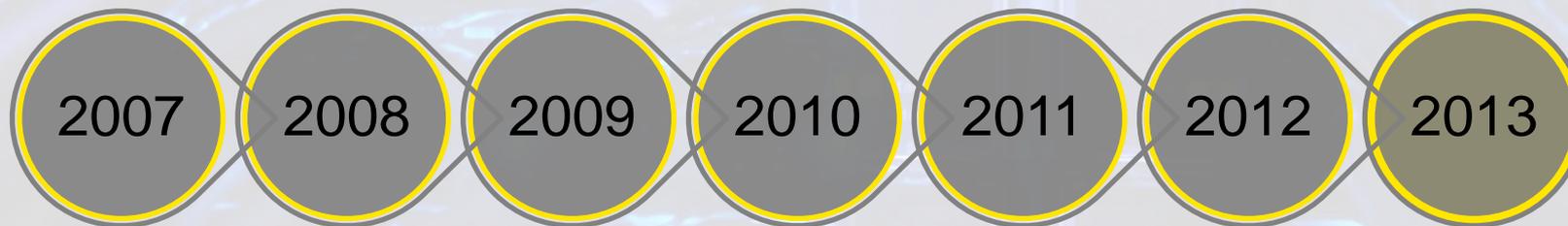


While innovation is moving at a breakneck digital speed, risk management frameworks evolve at a snails pace



In just 3 years we have seen an explosion of new technologies

- 1 Augmented Reality
- 2 Artificial Intelligence
- 3 3D and 4D Printing
- 4 Autonomous Transportation
- 5 5G Mobile Networking

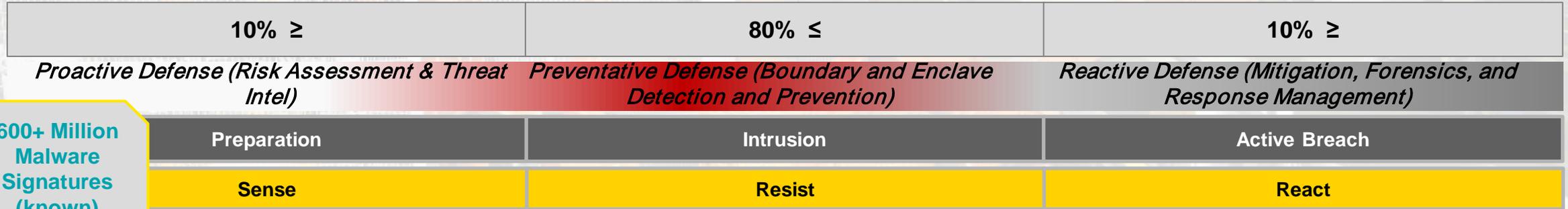


Nearly 7 years for a standard for mobile devices to be developed



Compounding the problem of managing cyber risk is the outdated and traditional models of cyber defense

Estimated Enterprise Cybersecurity Spend Distribution



600+ Million Malware Signatures (known)



170 days mean time from original breach until organizations detect a cyber attack

Estimated Cost and Impact of Cyber Attack

Note: 88% of security incidents are detected by third parties according to Verizon DBIR 2016
Source: EY Analysis



In the MENA region, organizations are moving rapidly forward with elements of the 4th Industrial Revolution



52%

Cloud Computing



38%

**Cybersecurity
Analytics**



33%

Mobile Computing

MENA Technology Investment Priorities 2019

*EY 2018 - 2019 GISS Survey

Yet remain concerned about the continuously evolving risks presented to their development plans



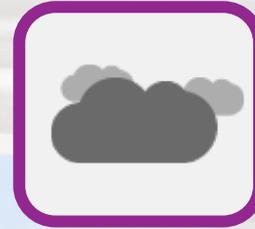
Careless/unaware employees (34%)



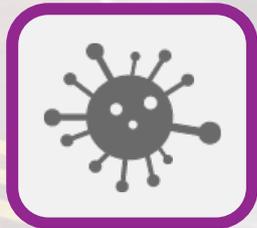
Outdated security controls (26%)



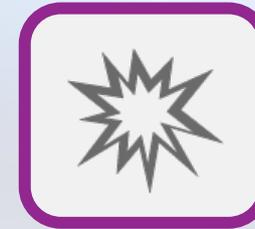
Unauthorized Access (13%)



Poor Cloud-Computing Controls (10%)



Unclear about successfully identifying breaches and incidents (82%)

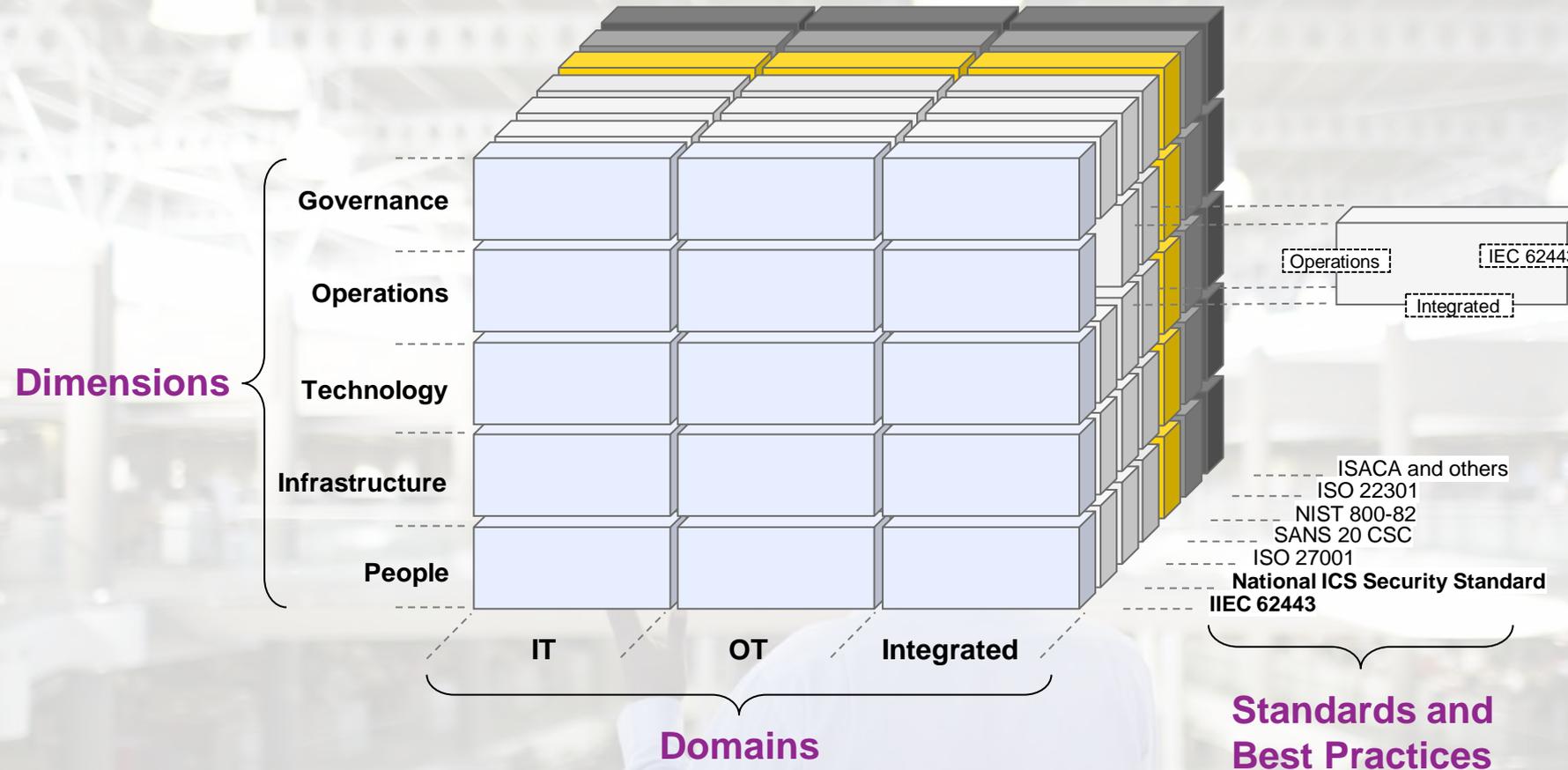


Compromise discovered by their own security center (31%)

We need to fundamentally change the way we approach management of Cyber Risk in the Digital Age



We require a new multidimensional means of assessing and managing risk...



...that is designed to more rapidly adapt to the increasing pace of technological change through maturity

Maturity ratings provide a quantitative method for identifying gaps, benchmarking against industry and tracking progress.

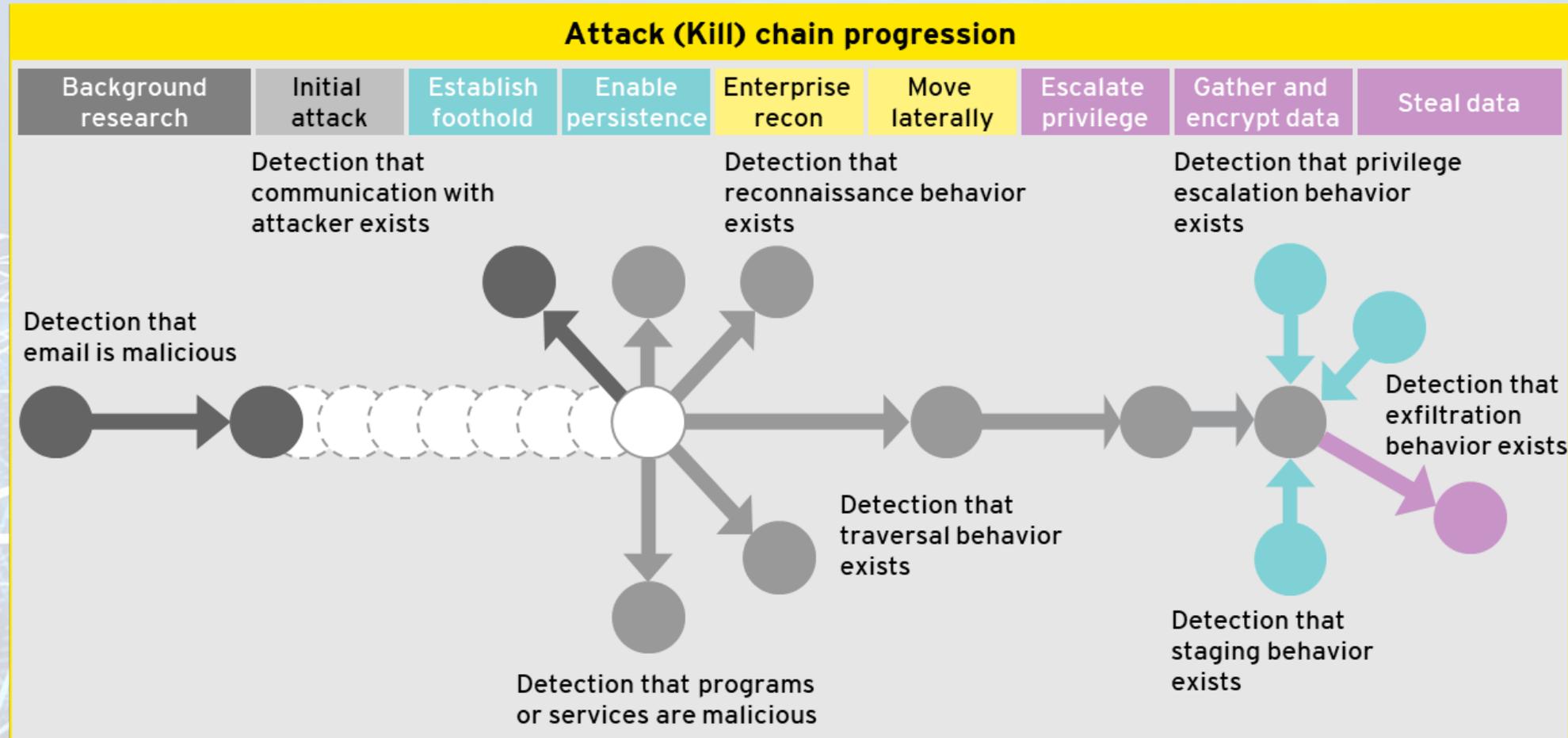
Beyond a simple checklist, maturity based models allow more targeted and cost effective improvements and help improve security readiness beyond simple baselines

The maturity scale:

- ▶ Considers governance, metrics, people, processes, technologies and tools
- ▶ Helps determine strategic program initiatives to implement to reach desired future maturity
- ▶ Can be used to evaluate changes in maturity over time as recommendations are implemented

Maturity level descriptions	
1	Initial <ul style="list-style-type: none">▶ Basic, ad-hoc, undocumented; changing capability may be in place with some technology and tools; limited local processes; limited organizational support.
2	Defined <ul style="list-style-type: none">▶ Partial capability is in place with a combination of some technology and tools; local processes covering some regions/business units or processes are repeatable but may not be good practice or maintained; limited organizational support to implement good practice.
3	Managed <ul style="list-style-type: none">▶ Defined capability is in place with significant technology and tools for some key resources and people; processes defined for some regions and/or business units; organizational guidance and support is in place for some key regions and/or business units.
4	Quantitatively managed <ul style="list-style-type: none">▶ Mature capability is in place with advanced technology and tools for most key resources and people; consistent processes exist for most regions and/or business units; some governance is in place (accountability/responsibility/metrics) for most key regions and/or business units.
5	Optimizing <ul style="list-style-type: none">▶ Advanced capability is in place that is leading-edge technology and tools for all key resources and people; consistent process across regions and business units; effective governance is in place (accountability/responsibility/continual monitoring for improvement).

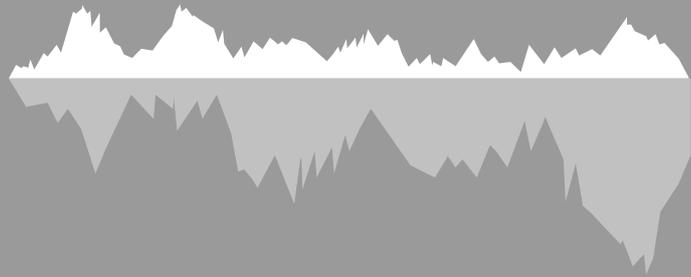
However we can't discount the advantages of Machine Learning and Cyber Analytics to monitor for threats



Machine Learning and Cyber Analytics better enable Security Operations in the midst of 4th Industrial Revolution

48%

of respondents say they do not have a Security Operations Centre (SOC)



“... there are also unknown unknowns”
Donald Rumsfeld

30%

of SOCs are failing to meet their most basic security operations requirements



Commercial off-the-shelf product timelines are slow

Expanding threat horizon

Nation States



Hacktivists



Organized crime



Trusted insiders

Difficult to innovate at the speed of threat attackers

Conclusions

- ❑ The 4th Industrial Revolution is accelerating the pace of technology adoption and **rapidly increasing Cyber Risk**
- ❑ We need to **reconsider our traditional approaches to managing Cyber Risks** and Threats in this dynamically changing environment
- ❑ Traditional Risk Models need to adapt to **emphasize Maturity** while ensuring we **get the basics right**
- ❑ **Advanced technologies** should be harnessed to provide insights and **improve efficiency of our Cyber Operations**

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