



IOT & Risk management

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The dramatic increase in the scale, diversity and function of IoT devices in the pervasive digital presence also ensures that a prioritization method for digital security is risk driven to use available resources in the most cost-effective manner..

Gartner, 2017

Constant change is the new Normal!

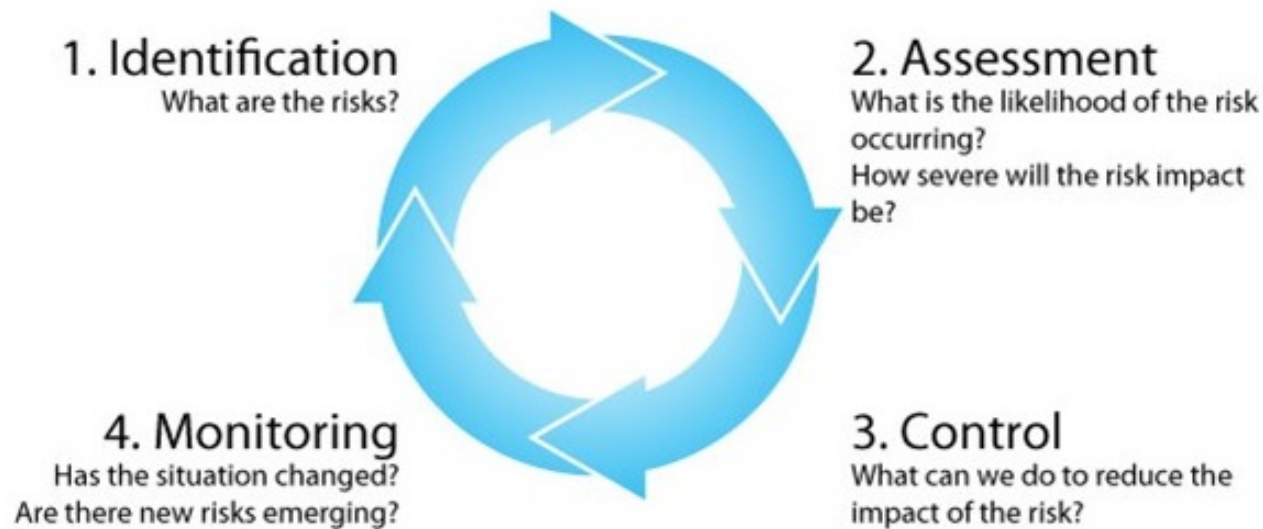
- **What is Risk Management - ORM?**
- **Potential Impact if IOT threats to business**
- **Integrated Risk Mgt (ORM/ 3LOD/ IRM)**

Approach

- **Some IOT specific considerations**
- **Questions & Answers**

What is Risk Management

Risk Management is the process of identifying, evaluating, accessing and controlling threats to an organization's assets.

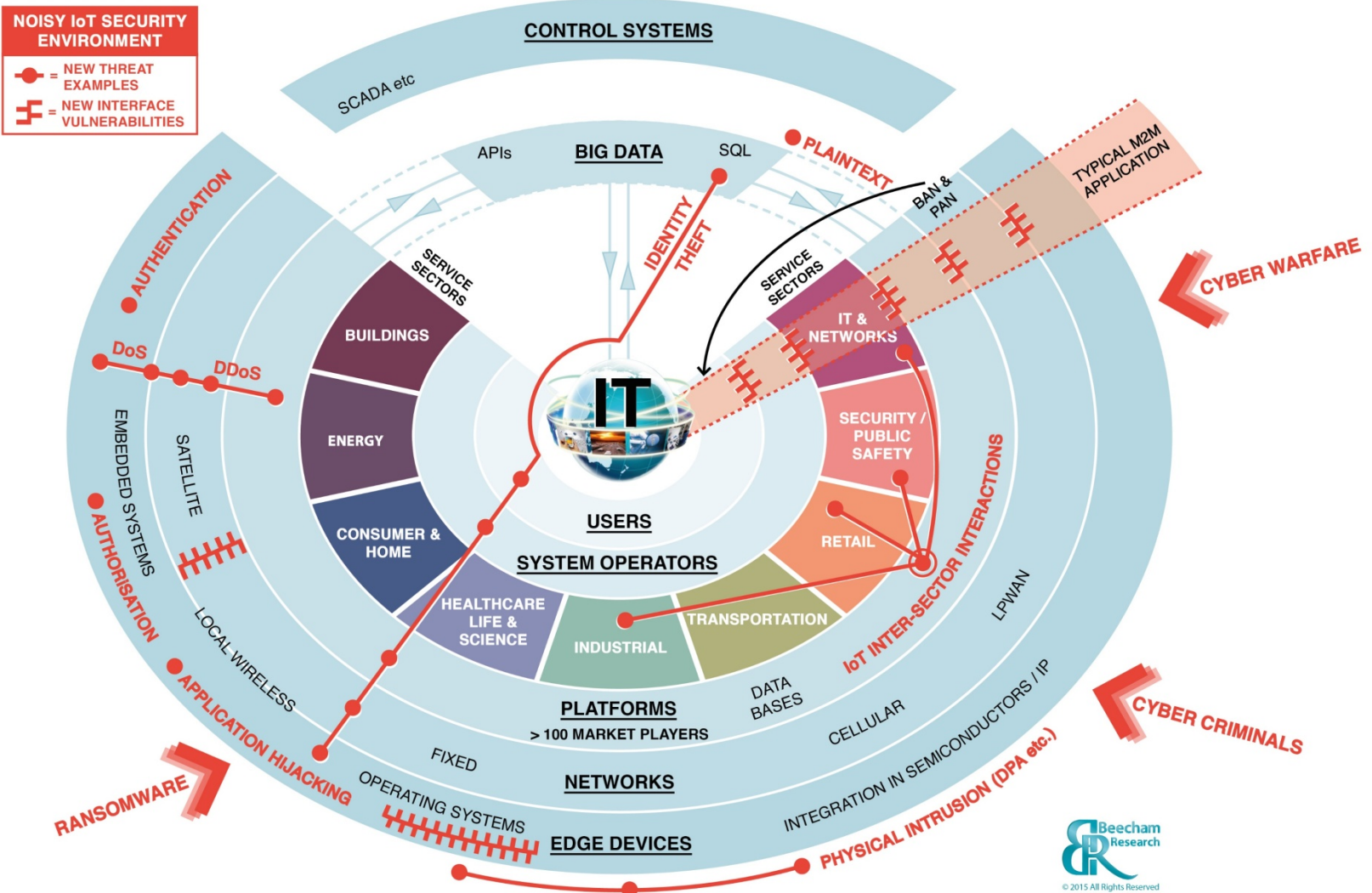


Business Security Considerations

ORM - Business Impact												
Process Criticality Assessment												
Process / Function:			MTO:									
Overall Rating			H		M		L		L		M	
		Area	Confidentiality		Integrity		Availability		Safety		Privacy	
			Business cosequences of unintended or unauthorized disclosure of information.		Business consequences of errors in information or of delibareta manipulation of information.		Business consequences of a prolonged outage of the system.		Business consequences due to worksite hazard.		Business consequences due to privacy issues.	
			Maximum Impact	Comment	Maximum Impact	Comment	Maximum Impact	Comment	Maximum Impact	Comment	Maximum Impact	Comment
Business Impact	Market Stability	Could there be an impact on market stability?	L									
	Decision Making	How damaging would it be for the organization's business objectives?	M									
	Legal Liability	Could there be a breach of legal, regulatory or contractual obligations?	H									
	Competitive Disadvantage	Where applicable, would there be a competitive disadvantage?	L									
	Staff Morale	How would it affect staff morale and motivation?	H									
Reputatio n Impact	Public Image	What damage could there be to public confidence and reputation?	L									
	Financial Gain or Fraud	Could financial gain be achieved on the market?	M									
Financial Impact	Costs	Could costs be incurred?	M									

IOT Threat Landscape

IoT Security Threat Map



Beecham Research 1264 IoT Security Threat Map

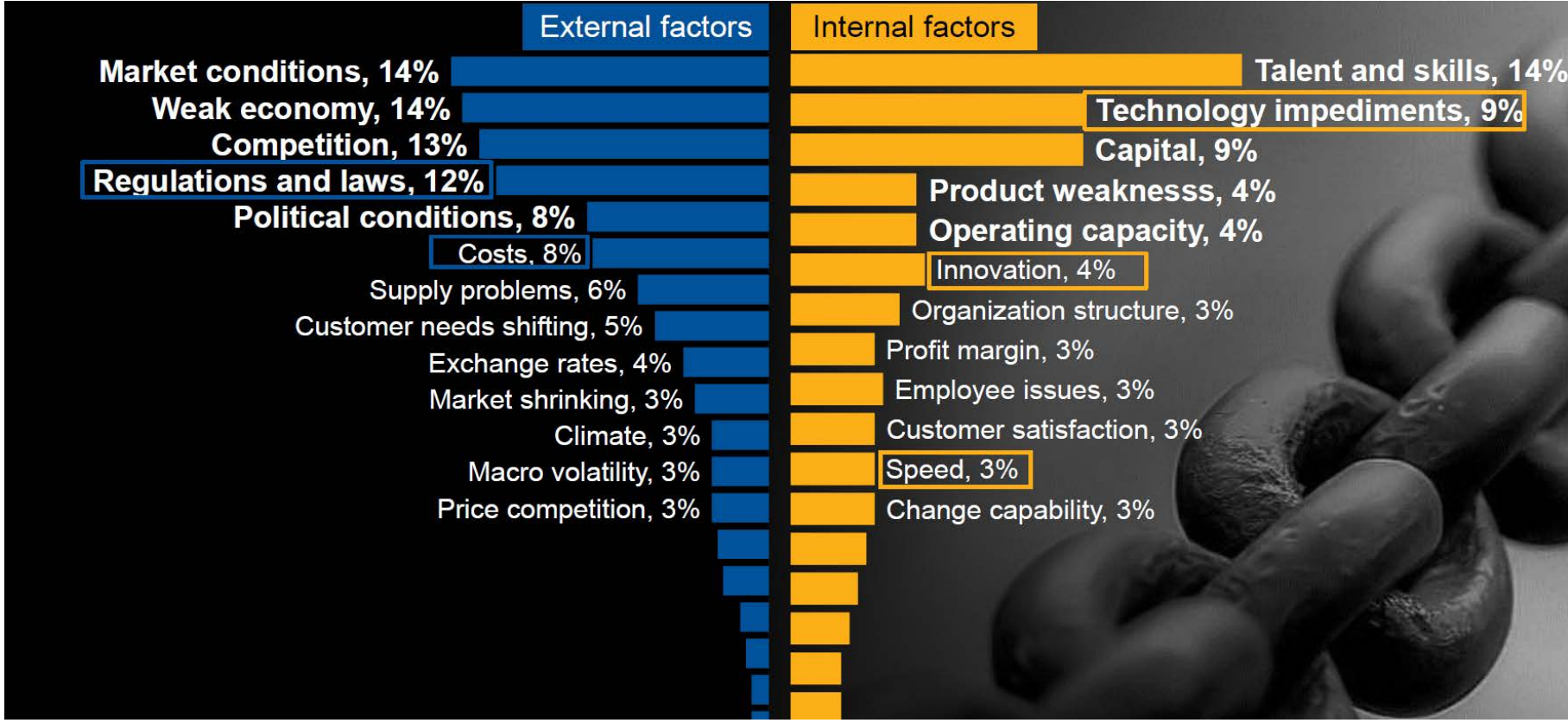
What is Risk Management



Digital Business Requires Integrated Risk Management

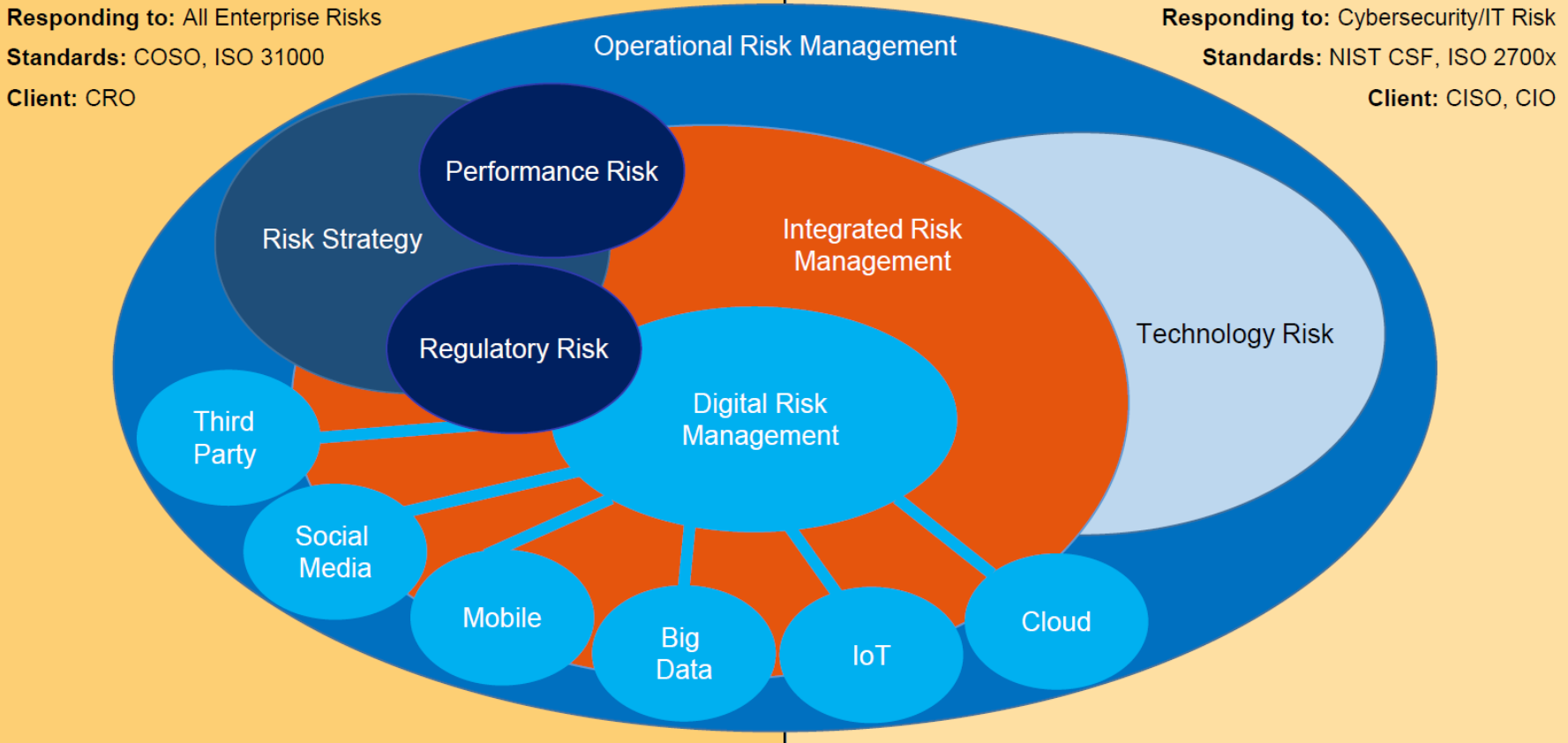
CISO is key to IRM Success!

Integrated Risk Management



What are the most significant risks on your company's strategic objectives?

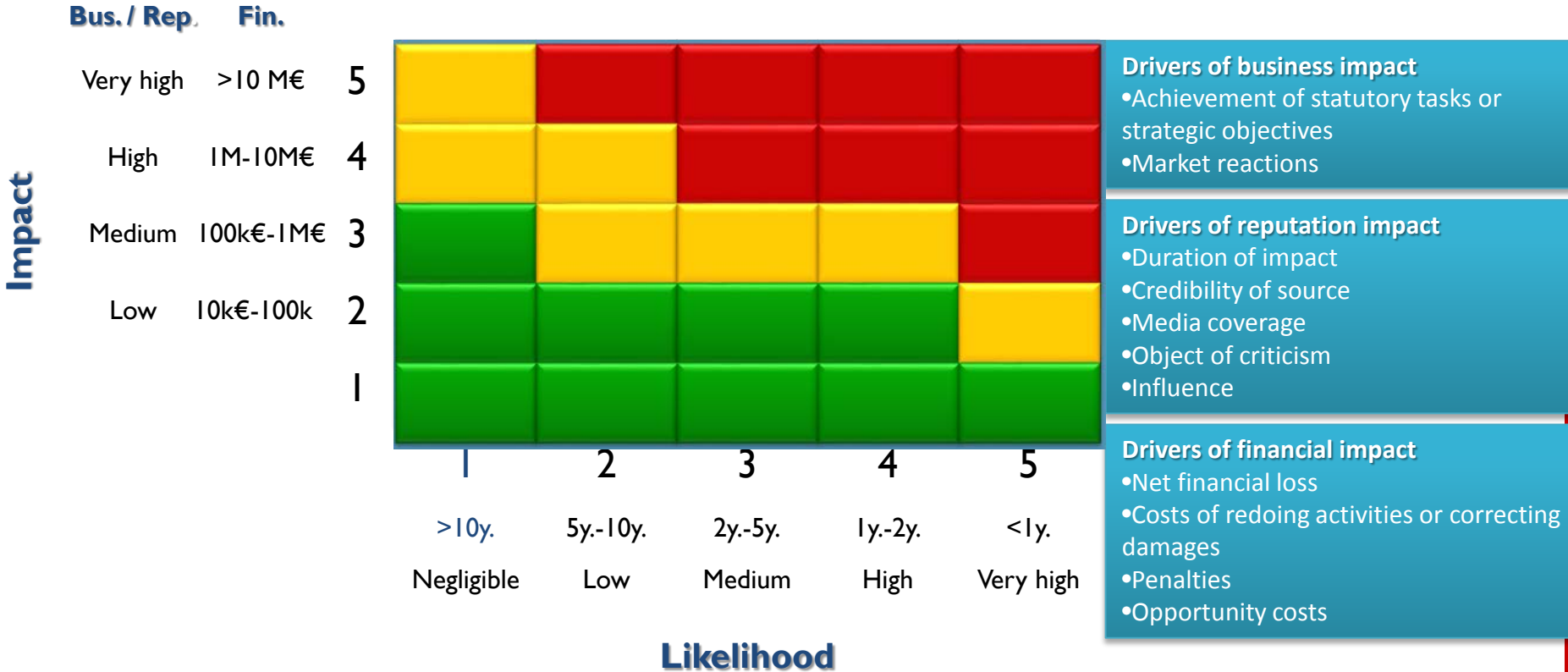
Integrated Risk Management



- Employee Safety
- System Downtime (Disruption)
- Loss of Trust / Reputational Damage
- Confidentiality Breach
- Non Compliancy to regulations

The outcomes resulting from IoT device participation in the business process will be the goal not technological support alone.

Risk Tolerance Matrix



Risks in the “red zone”:
The executive board must be informed without undue delay

Risks in the “yellow zone”:
Business Owner defines risk response measures.

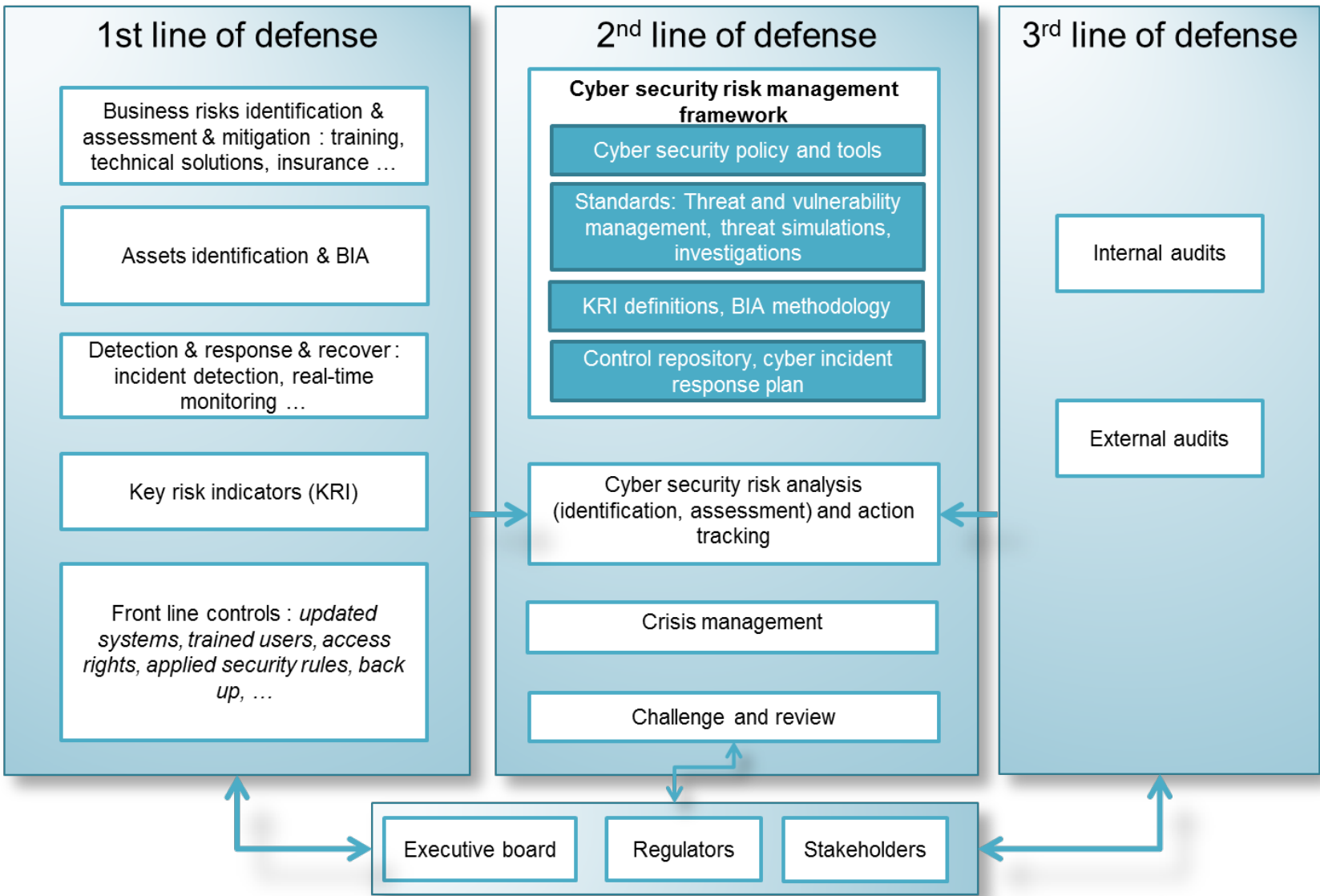
Risks in the “green zone”:
Ex-ante as tolerable.

3 Lines of Defense

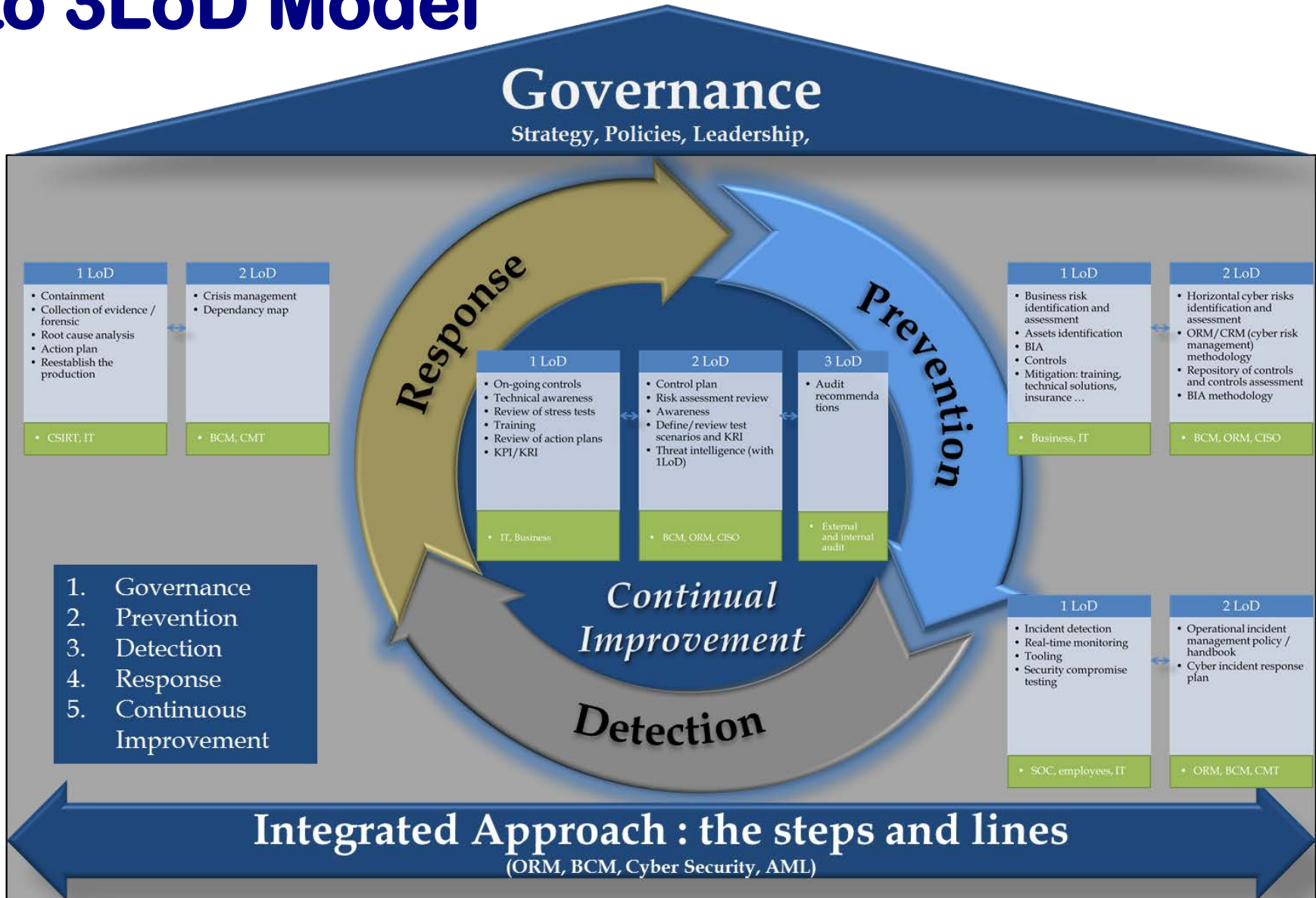


3 Lines of Defense

Framework for aligning operational risk with cyber security



Mapping cybersecurity steps to 3LoD Model



- **Variability of scale in devices and systems**
- **Dynamism and the temporality of connections between devices**
- **The heterogeneity of actors capable of interacting within IoT ecosystems**
- **The glue that binds these systems**

Why current Risk Assessments Fail ?

- Shortcomings of periodic assessment
- Changing systems boundaries yet limited system knowledge
- The challenge of understanding the glue
- Failure to consider assets as an attack platform

The dynamics of IoT systems will make risk assessment using current practices challenging

Need for New Approaches !

- **Need for automated and continuous risk assessment approaches**
 - **Development of Support Tools**
 - **Simulation and modelling (predictive power)**
- **Consider variability of relationships**
- **Better assess the glue that binds IOT systems**
 - **Development of Support Tools**
 - **Real Time Risk Assessments**

The dynamics of IoT systems will make risk assessment using current practices challenging

Thank You