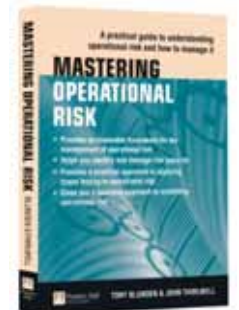


Mastering operational risk

John Thirlwell

IRM Operational Risk SIG
2 December 2010

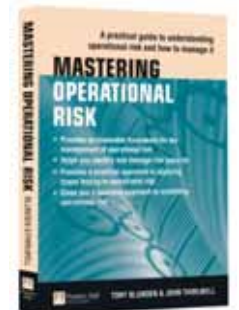


- Writing the book
- What's so special about operational risk?
- The operational risk framework
 - Governance
 - Losses and measurement
- Operational risk appetite
- The benefits of getting it right
- People risk



Operational risk: How to break it down?

- The Framework; putting the Framework to work
- History; the Framework, putting the Framework to work
- History; the Framework, putting the Framework to work; business case; mitigation



Breaking it down

Part 1: Setting the scene

What is operational risk? The business case

Part 2: The Framework

Governance, RCA, Events and losses, indicators

Part 3: Advancing the Framework

Reporting, modelling, scenarios and stress testing

Part 4: Mitigation and assurance

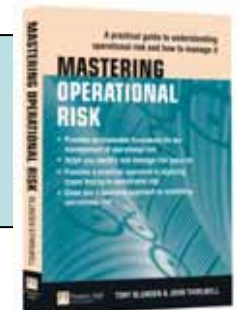
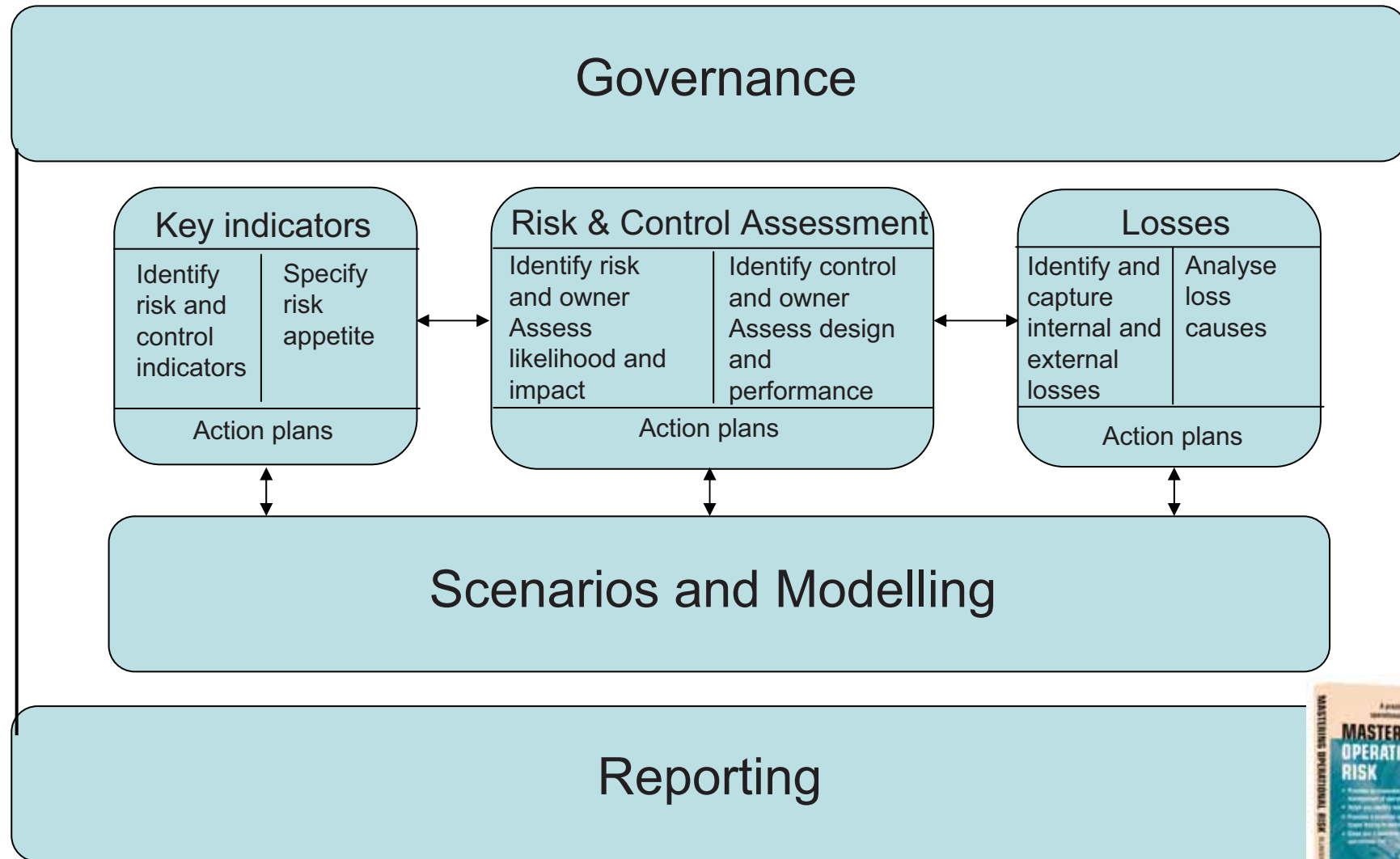
Business continuity, insurance, internal audit

Part 5: Practical operational risk management

Outsourcing, people risk, reputation risk



ORM Framework



- Writing the book
- **What's so special about operational risk?**
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Defining operational risk

‘Operational risk is the risk of direct or indirect losses resulting from inadequate or failed processes, people or systems, or from external events.’ [*Operational risk: the next frontier*. RMA/PriceWaterhouseCoopers, 1999]

‘The risk of **loss** resulting from inadequate or failed **internal** processes, people or systems or from external events’ [Basel II]

- includes legal risk; excludes strategic and reputational risk
- regulatory risk?

‘The risk of loss **arising** from inadequate or failed internal processes, **or from** personnel and systems, or from external events.’ [Solvency II]



Is operational risk different from other risks?

	Credit, market, commodity, liquidity	Operational
Is the risk transaction-based?		
Is the risk assumed proactively ?		
Can it be identified from accounting information e.g. the P&L?		
Can audit confirm that every occurrence of the risk has been captured?		
Can its financial impact be capped or limited?		
Can you trade the risk?		
Is everybody in the firm responsible for the risk?		
Does the risk affect every activity?		





An attempt to frame the unframeable, to assuage fears about the uncontrollable 'rogue others' and to tame the man-made monsters [of the financial system].

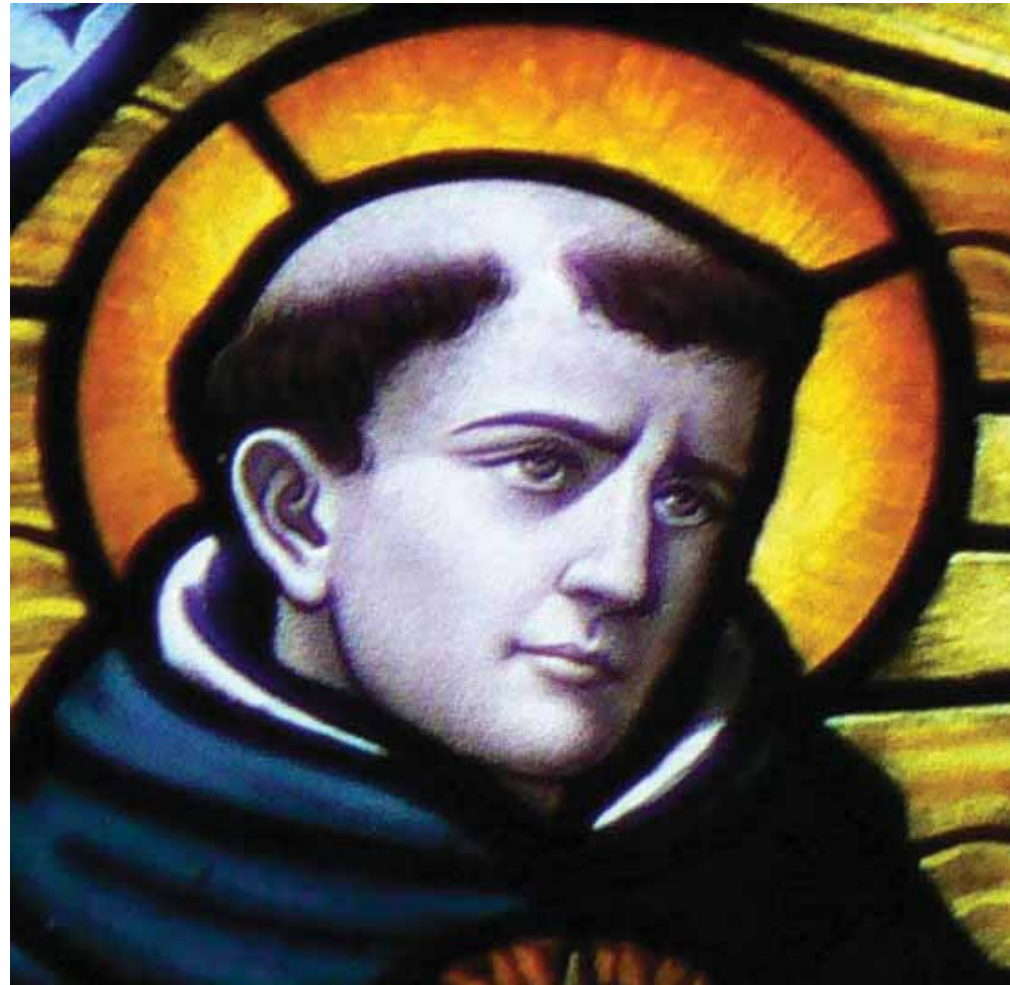
Prof Michael Power, *Organized uncertainty : designing a world of risk management* (OUP, 2007)





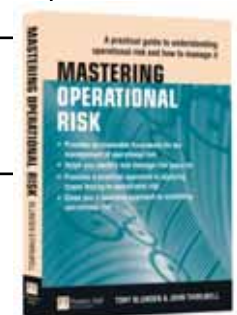
‘The world has never been so full of risk’

(Thomas Aquinas, 1245)



National security strategy (Oct 2010)

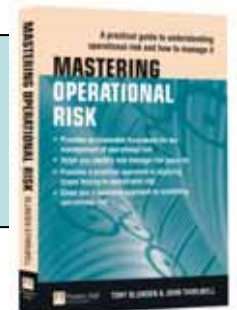
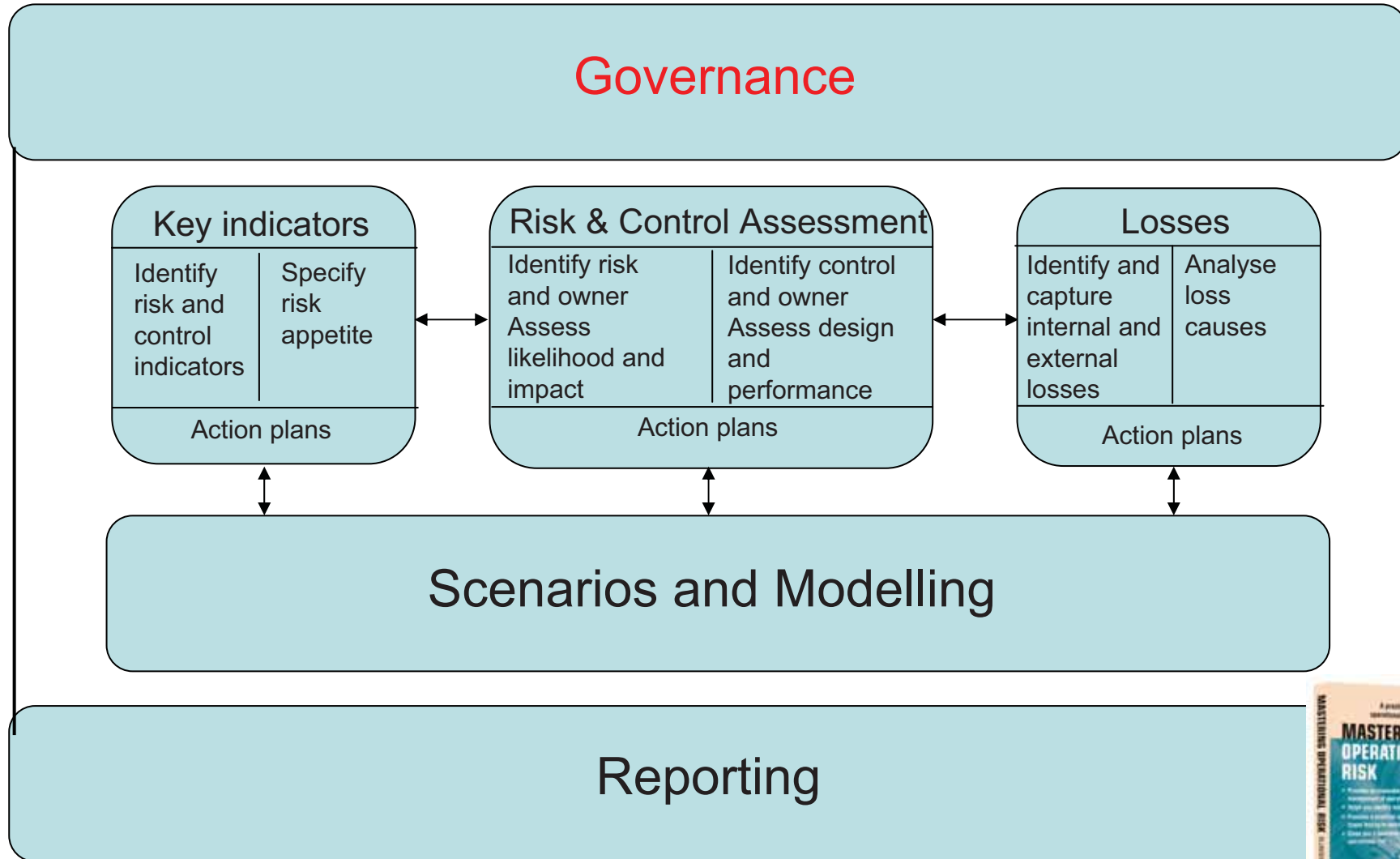
TIER 1	TIER 2
International terrorism	Chemical, biological, nuclear, radioactive (CBNR) weapons
Cyber attacks and large scale cyber crime	Overseas insurgency creating environment for terrorism
Major accident or natural hazard, e.g. extensive coastal flooding, pandemic	Organised crime
International military crisis	Satellite communications disrupted



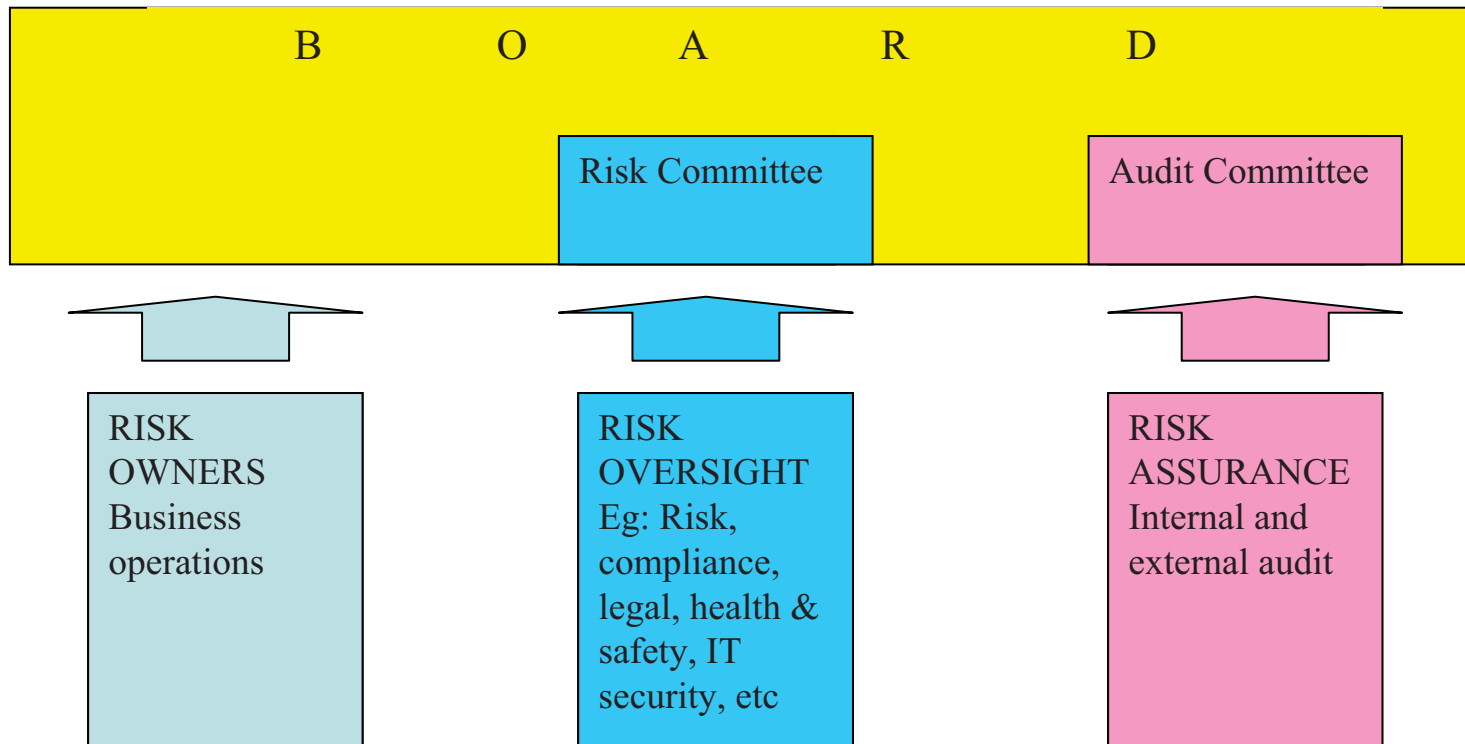
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ORM Framework



The 3 lines of defence

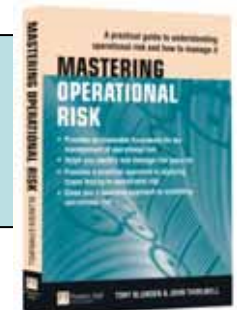
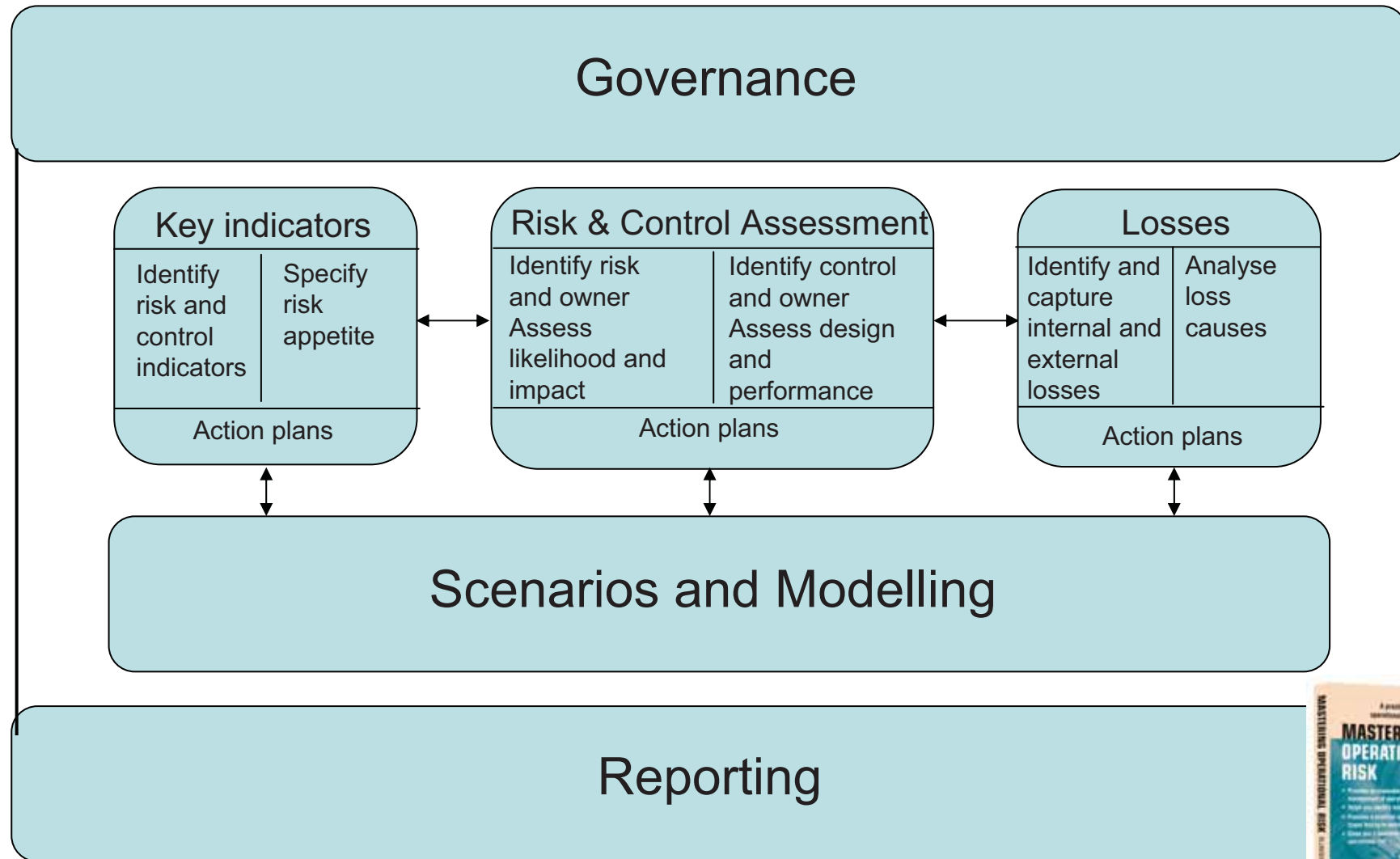


Board

- Leadership
 - Culture
 - Tone from the top / tune in the middle
- Strategy and objectives
- Appetite
- Reporting and communication



ORM Framework

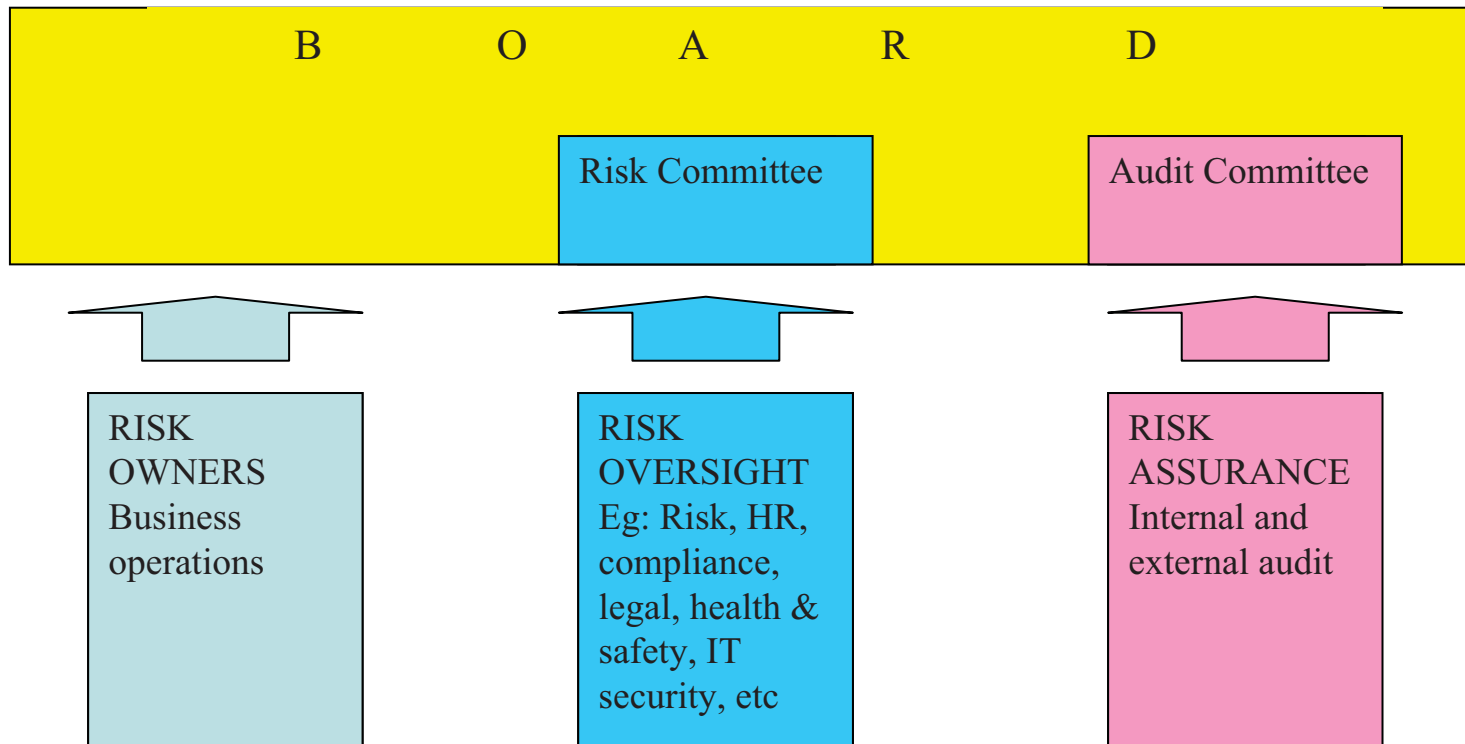


Board

- Leadership
 - Culture
 - Tone from the top / tune in the middle
- Strategy and objectives
- Appetite
- Reporting and communication
- Risk, the Risk function and Risk Committee



Where does the operational risk function sit?

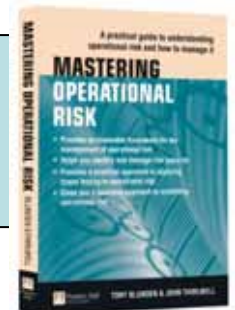
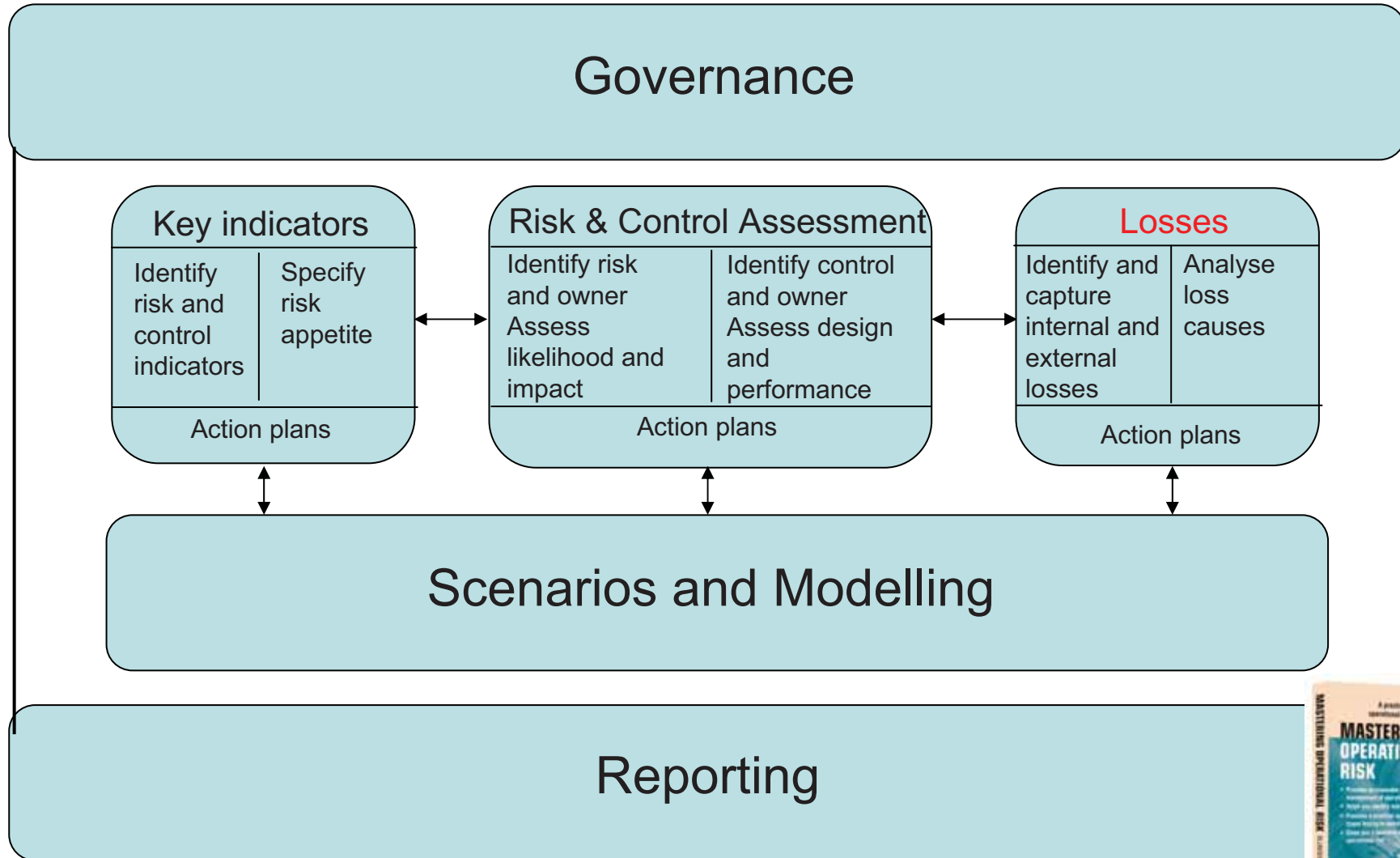


Risk assurance

- Independent
- Internal audit
 - Objectives
 - Status and position in the firm
 - Audit Committee
 - Priorities
- External audit – financial reporting
- Internal audit as consultant
- Internal audit as investigator

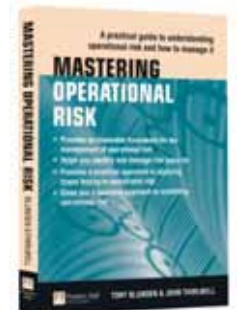


ORM Framework



The risk register

or 'What needs to go right?'



Issues and decisions concerning event data

- Which events?
 - Reporting threshold
 - Near misses
 - “Boundary” losses
 - Gains
- The data
 - Amount (the basis of severity)
 - Date (the basis of frequency)
 - Loss category

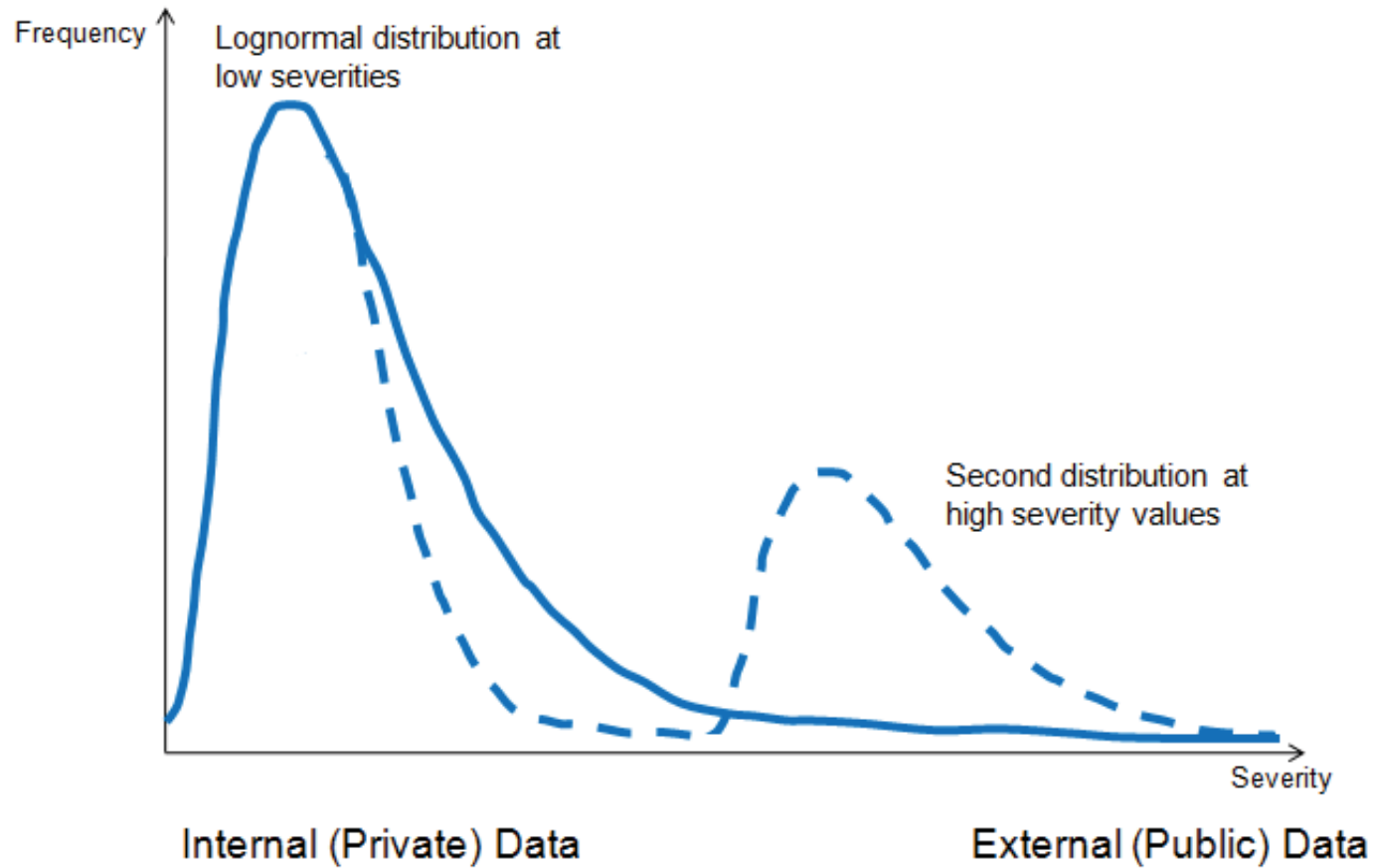


Realities of risk event data

- It will be incomplete, scarce and patchy, even allowing for external data – the ‘tail’ problem.



Lognormal and bimodal distributions



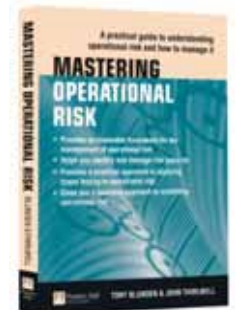
Realities of risk event data

- It will be incomplete, scarce and patchy, even allowing for external data – the ‘tail’ problem.
- It will be inconsistently reported although, once reported, it is auditable.
- It is historic and backward looking. Major events will probably have led to tighter controls, change of policy etc. The external environment will change.

However

- It can validate indicators, risk and control assessments and scenarios
- It is the beginning of the essential chain of:
Data → information → knowledge → understanding

BUT THAT ONLY COMES WITH . . .



Felix qui potuit rerum cognoscere causas
(Vergil, *Georgics*)



Felix qui potuit rerum cognoscere causas

(Vergil, *Georgics*)

It is the cause, it is the cause, my soul.

(Shakespeare, *Othello*)

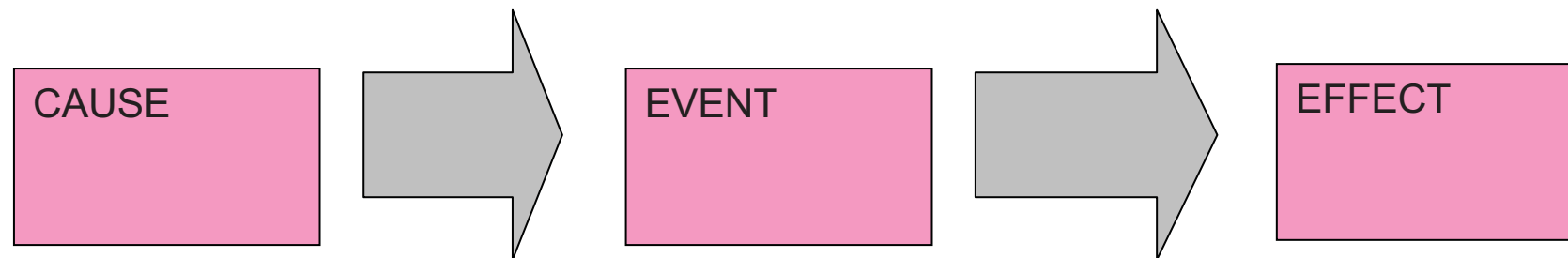


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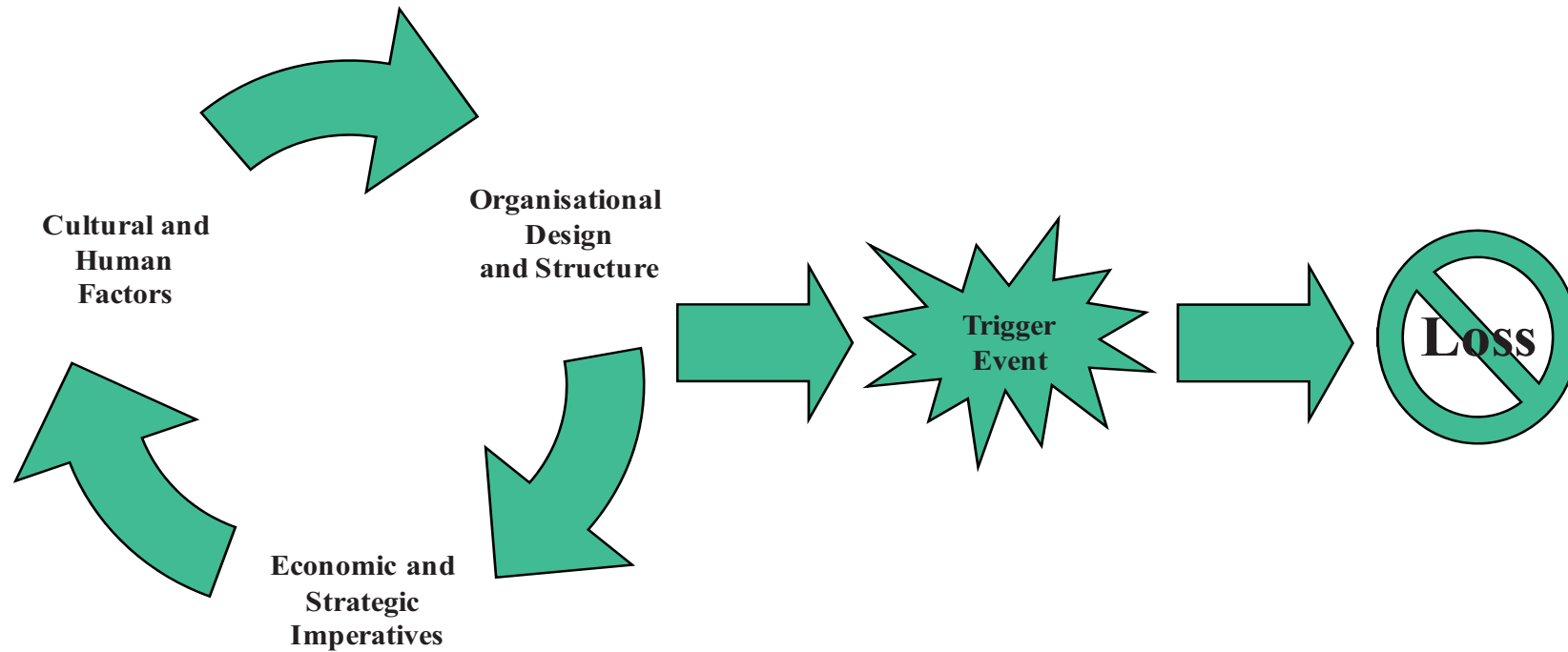
(Vergil, *Georgics*)

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A Typical Crisis Model



Dr Simon Ashby, *The 6 C's of the financial crisis*, (Financial Services Research Forum, Nottingham University Business School: April 2010)

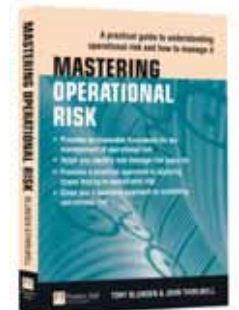


Unlike the position that exists in the physical sciences, **in economics and other disciplines that deal with essentially complex phenomena, the aspects of the events to be accounted for about which we can get quantitative data are necessarily limited and may not include the important ones.**

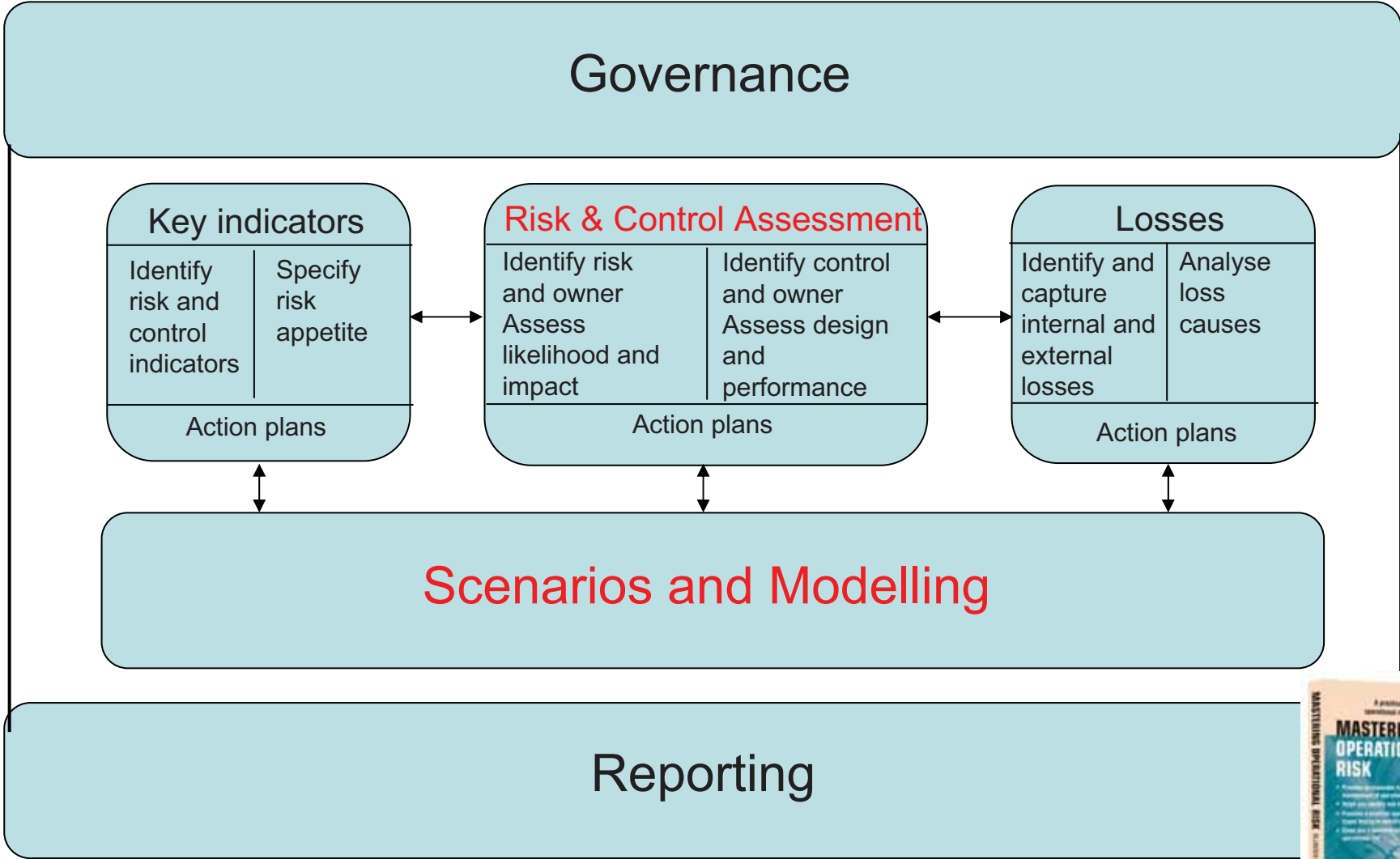
Friedrich von Hayek, *Pretence of Knowledge*, Nobel acceptance speech 1974.

Our knowledge of the way things work, in society or in nature, comes trailing clouds of vagueness. **Vast ills have followed belief in certainty.**

Kenneth Arrow, *I know a hawk from a handsaw* (CUP 1992)



ORM Framework



Modelling operational risk - a qualitative approach

- Use existing risk and control assessments
- No need to wait for adequate loss history
- How it might work:
 - Set up ranges
 - Assess impact and likelihood of risks
 - Assess failure probabilities of controls
 - Correlate risks (if possible)
 - Challenge input
 - Run Monte Carlo simulations
 - Assimilate results and reports



- Writing the book
- What's so special about operational risk?
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- **Operational risk appetite**
- The benefits of getting it right
- People risk

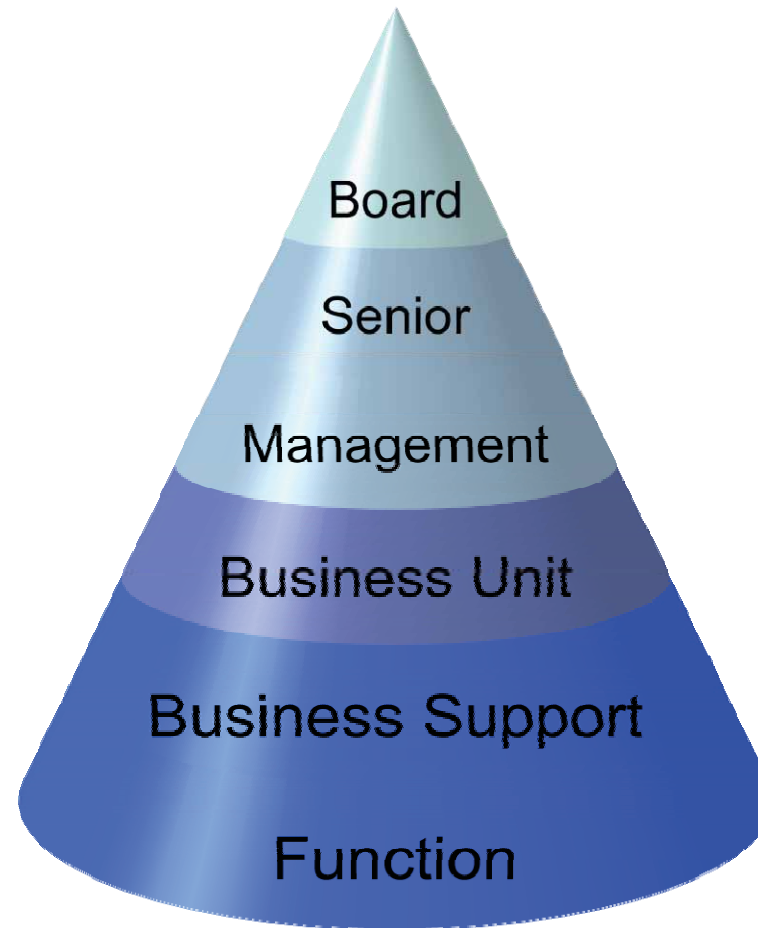


Operational risk appetite

- Risk of loss a firm is willing to accept for a given risk-reward ratio [over a specified time horizon at a given level of confidence]
- Some examples
 - No/minimal appetite for losses arising from financial crime, reputation, legal, regulatory events
 - Unmitigated losses no more than $x\%$ of PBT in any 3-year period
 - No individual OR losses above $\text{£}x$ or cumulative losses above y over 12 month period. Losses above $\text{£}z$ to be reported to Risk or Audit Committees.
- But do these mean anything in the world of op risk?



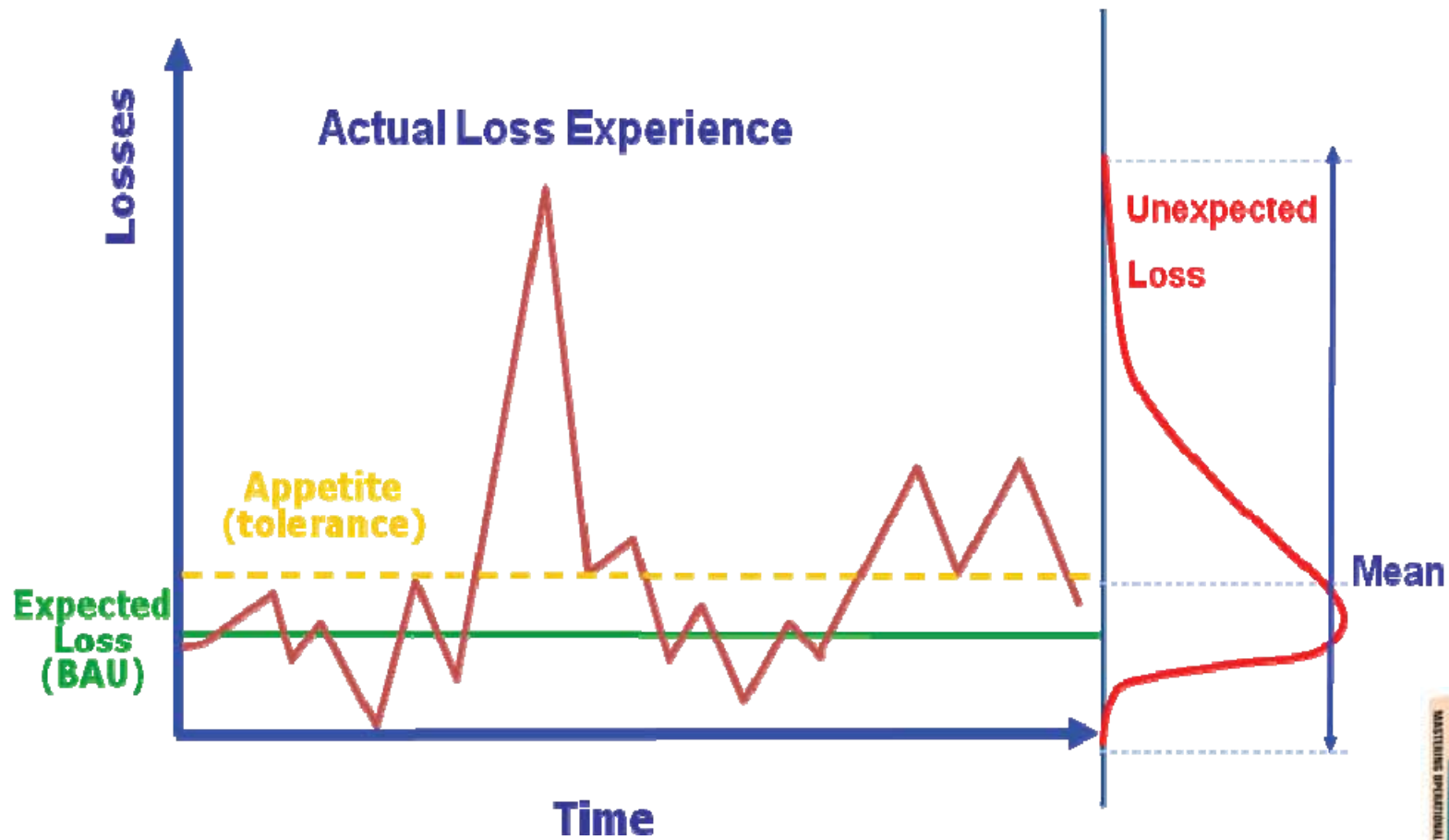
Whose appetite is it anyway?



Risk appetite – some principles

- Requires well-defined business objectives and well-defined objectives of appetite
- Should inform business decisions
- Will be defined in quantitative and qualitative terms; requires multi-criteria components
- Tied in to business performance and reward

Risk appetite in relation to loss experience



Risk appetite using risk assessment scores (1)

Annual Loss Thresholds	
Low	25,000
Acceptable	100,000
Warning	450,000
Catastrophic	1,500,000

Impact per event (£)				
	<u>L'bound</u>	<u>U'bound</u>		<u>Mid point</u>
Low	0	50,000		25,000
Med-low	50,000	150,000		100,000
Med-high	150,000	500,000		325,000
High	500,000	1,500,000		1,000,000

Likelihood of event (per annum)				
	<u>L'bound</u>	<u>U'bound</u>	<u>Alternative label</u>	<u>Mid point</u>
Low	0.04	0.10	10% likely in next year	0.07
Med-low	0.10	0.33	30% likely in next year	0.22
Med-high	0.33	1.00	Very likely in next year	0.67
High	1.00	12.00	Several times in next year	6.50

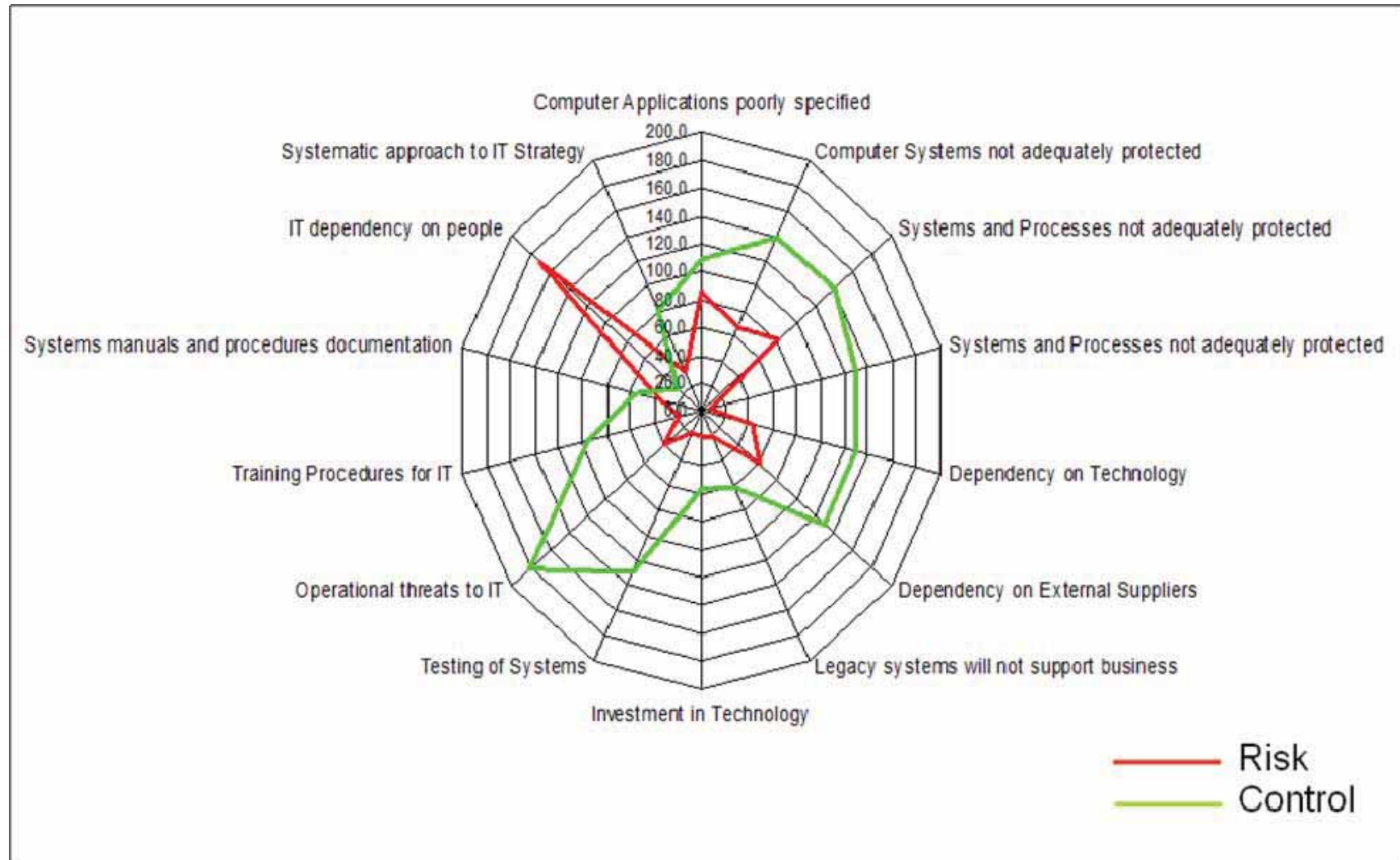


Risk appetite using risk assessment scores (2)

IMPACT		LIKELIHOOD			
		10% likely	30% likely	Very likely	Severe
High		70,000	220,000	670,000	6,500,000
Med-high		22,750	71,500	217,750	2,112,500
Med-low		7,000	22,000	67,000	650,000
Low		1,750	5,500	16,750	162,500



Optimising resource through risk and control assessments



Risk appetite using Key Risk Indicator thresholds for 'Number of help desk queries'

Red	Amber	Green	Amber	Red
2 or less	3 to 7	7 to 15	16 to 25	over 25

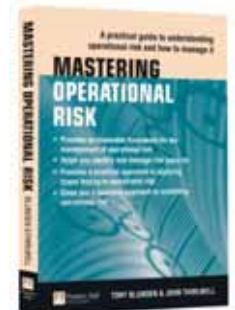
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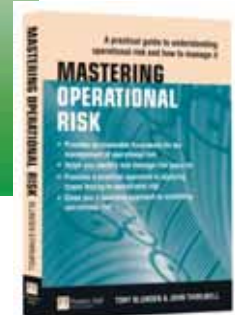
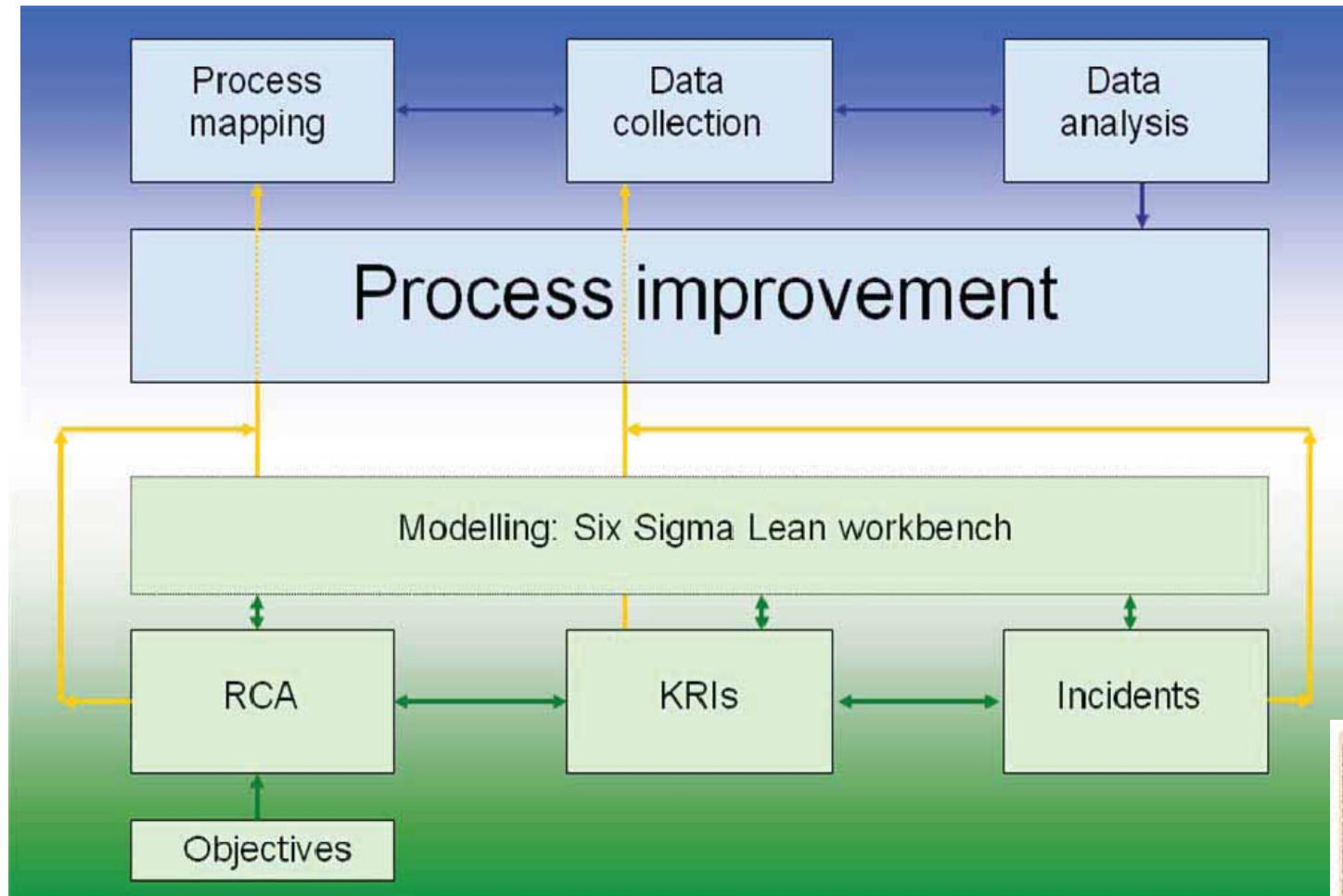
Benefits of an effective operational risk management framework

Informed decision making

- Placing [operational] risk decisions in the right context (governance)
- Distinguishing your operational risks and optimising control resource (RCA)
- Assessing past problems (losses)
- Knowing where you are now (indicators) . . .
- . . . and where you may be heading (scenarios)
- Allocating capital (modelling)
- Getting the *right* information (reporting)



Interaction of operational risk management and Six Sigma and Lean



Other benefits of operational risk management

- Business continuity planning
 - Will you be a survivor?
 - Will you be back in business first?
- Insurance buying
- Outsourcing
 - Managing the core
 - Better customer service
 - Higher activity levels
- Project management
- Reputational risk
 - Preventing it
 - What to do if it happens
- People risk management



- Writing the book
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People risk

- Operational risk is the **risk of loss from inadequate or failed** internal processes, **people** and systems or from external events.
- ‘80% of operational risk is down to human error or management failure.’
(Jonathan Howitt, ex Head of operational risk, Dresdner Kleinwort Benson, 2004)



People risk – the financial crisis

Financial crisis

- Asset bubble
- Politicians, regulators, central banks
- Failure to apply good risk management
- Failure to apply good risk governance
- Human behaviour (greed, herd instinct)



People risk essentials

- Leadership and culture
 - Openness and transparency
 - Communication
- Corporate strategy and objectives
 - Excellent behaviours defined
- Change and flexibility



Senior people risk

- The people risk of the CEO
- The people risk role of the CEO
 - Instilling the risk culture enterprise-wide
 - The CEO's behaviour
 - Tone from the top
 - Walk the talk
- The people risk of risk management



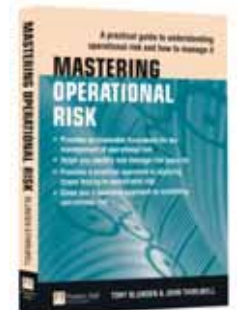
People risk controls and indicators

- Objectives and, through them, behaviours are the drivers for key people risk controls:
 - Selection
 - Appraisal and performance management
 - Training
 - Reward
 - Succession planning
- People risk and reputation risk
- People risk indicators



People risk and HR

- Is HR a transactional or a risk function?
- Much risk is managed by good HR. How much is managed by a good HR department?
- Understanding and predicting risk is highly dependent on understanding human and organisational behaviour. HR has a role as senior management's guide.
- Would the HR Director be on the short-list for CEO or COO?



- All risks should be viewed through a people lens and all people issues viewed through a risk lens



- Good people management
is good risk management
is good operational risk
management



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