

# Risk appetite

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SII, London, 11 October 2007

- Defining risk appetite
- Measuring risk appetite
- Approaches to appetite setting
- Expressing risk appetite in risk policies

# Definition

The amount that a firm is willing to risk (for a given risk-reward ratio)

What do we mean by *risk*?

What do we mean by risk in the context of operational risk?

# Is operational risk different from other risks?

	Credit risk/ Market risk	Operational Risk
Is the risk transaction-based?		
Can each risk event be identified from accounting information, e.g.the P&L or General Ledger?		
Can you hold a position in the risk, i.e. can you close out or sell it?		
Is the risk assumed proactively?		
Can its financial impact be limited or bounded?		

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# Measuring operational risk – some issues

- The operational risk definition: people, process, systems, external events.
- Cause → Event → Effect
- The operational risk management framework:
  - Losses
  - Risk and Control (Self-)Assessment
  - (Key)(Risk/Control/Performance)Indicators
  - Scenarios

# Frequency and severity – traditional view of assessing op risk

High (3) Frequency	3	6	9
Med (2)	2	4	6
Low (1)	1	2	3
	Low (1) Severity	Med (2)	High (3)

# Frequency and severity - modern operational risk management

High (3) <b>Frequency</b>		n/a	n/a
Med (2)			n/a
Low (1)			
	Low (1) <b>Severity</b>	Med (2)	High (3)

# Appetite for loss

- Losses – sole or aggregate?
- Banding losses for risk assessment – and appetite

e.g.

Expected loss (annual and therefore budgeted)

Unexpected loss (e.g. 5% [1:20] confidence level)

Catastrophic loss (e.g. 99.5% [1:200] confidence level)

or more . . .

# RCA in monetary terms

## Annual Loss Thresholds

Low	25,000
Acceptable	100,000
Warning	450,000
Unacceptable	1,500,000

## Expected Loss Per Event

£	Lbound	Ubound	Alternative label	Mean
Low	250	1,000	Low	625
Medium/Low	1,000	5,000	Medium/Low	3,000
Medium	5,000	50,000	Medium	27,500
Medium/High	50,000	100,000	Medium/High	75,000
High	100,000	1,500,000	High	800,000

## Annual Frequency

frequency	Lbound	Ubound	Alternative label	Mean
Once / 5 yrs	-	0.20	Rare	0.10
Once / 2 yrs	0.20	0.50	Low	0.35
Once a yr	0.50	1.00	Moderate	0.75
Once a month	1.00	12.00	Very Likely	6.50
Once a day	12.00	365.00	Almost Certain	188.50

# RCA – evaluating controls

	Mean Loss without Controls	Mean Loss after Controls	Control Efficiency %	Mean Value of Control
Risk 1	36,159	22,092	39	14,067
Risk 2	35,136	7,704	78	27,432
Risk 3	49,776	5,055	90	44,721
Risk 4	5,859	1,716	71	4,143
Risk 5	3,201	225	93	2,976
Risk 6	1,659	147	91	1,512
Risk 7	1,851	165	91	1,686
Risk 8	5,484	2,808	49	2,676
Risk 9	3,162	2,457	22	705
Risk 10	2,208	489	78	1,719
Risk 11	375	63	83	312
Risk 12	246	66	73	180
Risk 13	282	225	20	57
Risk 14	132	21	84	111
<b>TOTALS</b>	145,530	43,233		102,297

# The RCA spider



# Key (risk) indicators

<u>Key Indicator data</u>	<u>Period</u>	<u>YTD</u>	<u>Target for YTD</u>	<u>General Trend</u>	<u>Importance</u>
Staff Turnover rate against forecast (E)	2006	6	12	Stable	Low
Morale Tracker (Satisfaction Levels) (E) - 'staff surveys etc'	2006	Satisfied	Very Satisfied	Improving	Medium
Average Age (E)	2006	45 years	35 years	Improving	High
Staff Capability/Training (S)	2006		Highly Qualified	Worsening	High
<b>(E) Existing KI</b>					
<b>(S) Suggested KI</b>					
<u>Event experience</u>	<u>Date of Loss</u>	<u>£1000's</u>	<u>Provision / Budget</u>	<u>Unexpected Loss</u>	
Loss of 4 people from the Technology Department	2006	50	185	0	
<b>Totals</b>		<b>50</b>	<b>185</b>	<b>0</b>	

# Risk indicators - an Audit Committee perspective

## NB almost all Y/N

*[Audit Committee Institute (KPMG) – Shaping the Audit Committee agenda, May 2004]*

Inappropriate tone at the top	Unusually rapid growth
Frequent organisational changes	Unusual results or trends
Lack of succession plans	Industry softness or downturns
Inexperienced management	Exposure to rapid technological changes
Lack of management oversight	Late surprises
Management over-ride	Autocratic management
Overly complex organisational structures or transactions	Ongoing or prior investigations by regulators or others
Untimely reporting and responses to audit committee enquiries	Lack of transparency in business model and purposes of transactions

# Scenarios (99.5%; 1 in 200 years)

## – some examples

- Wording dispute – major claim conceded. Other policies with same wording expose insurer to further unexpected claims. Staff levels at firm not sufficient to process claims volumes. Work-force overworked. Senior claims manager leaves; replacement cannot be found for 12 months.
- Loss of largest underwriting team to competitor. Profitable niche market, so high recruitment costs and long lead time resulting in loss of profits. Poor maintenance of documentation resulting in inability of firm to fully service claims.
- Bomb in City. Major damage to insurer and to Lloyd's building. Access to Lloyd's building denied for extended period. Loss of life of key underwriters and/or senior management. BCP invoked. Firm not running at full capacity.

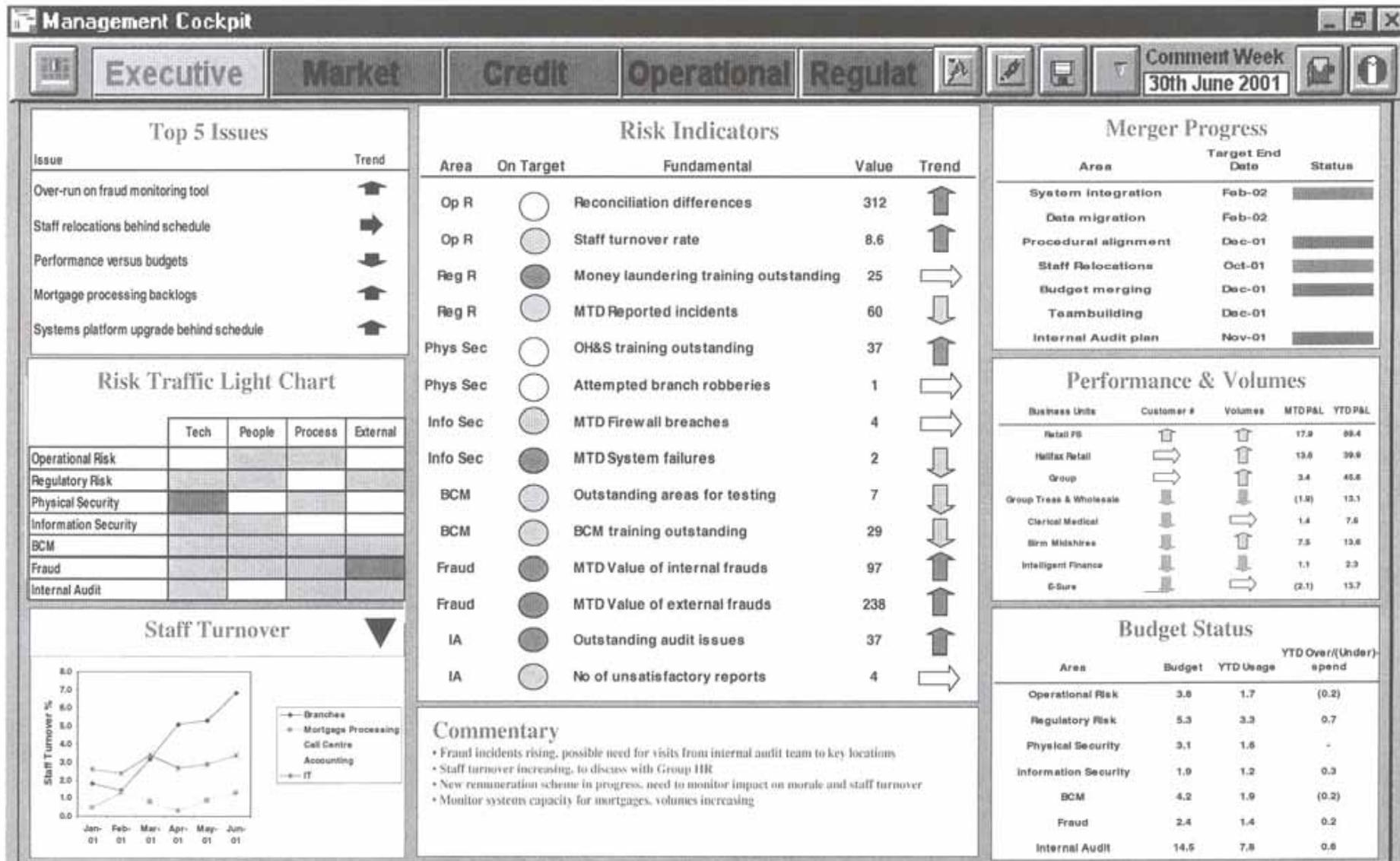
[Extracted from Lloyd's ICA Guidance 2007]

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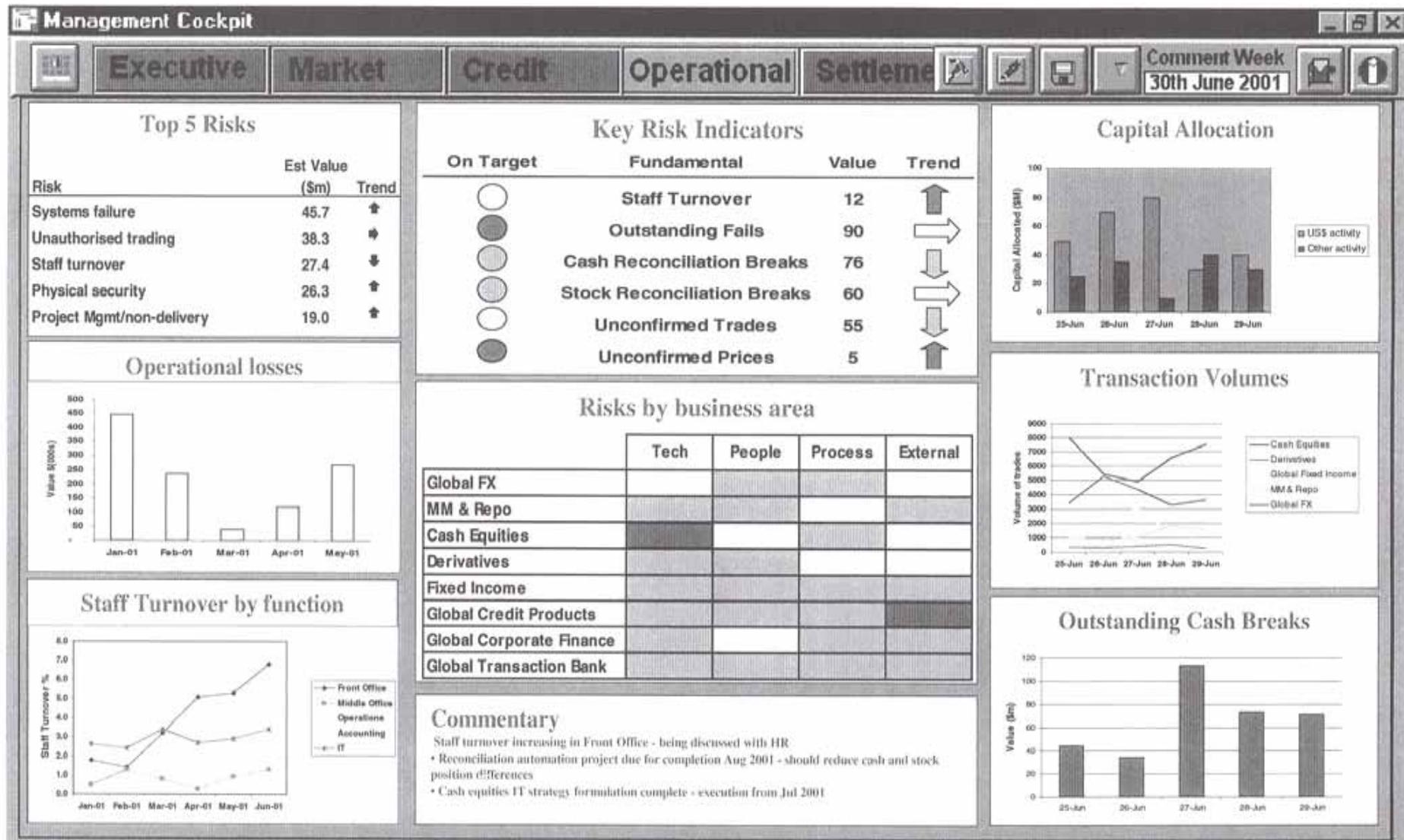
# How to approach risk appetite setting

- Board/senior management (top down)
  - Identify threats to business objectives
  - Related to capital/earnings/assets
  - Scenarios
- Line management (bottom up)
  - RCA
  - KRIs
  - Losses (aggregate)

# Executive dashboard (level 1)

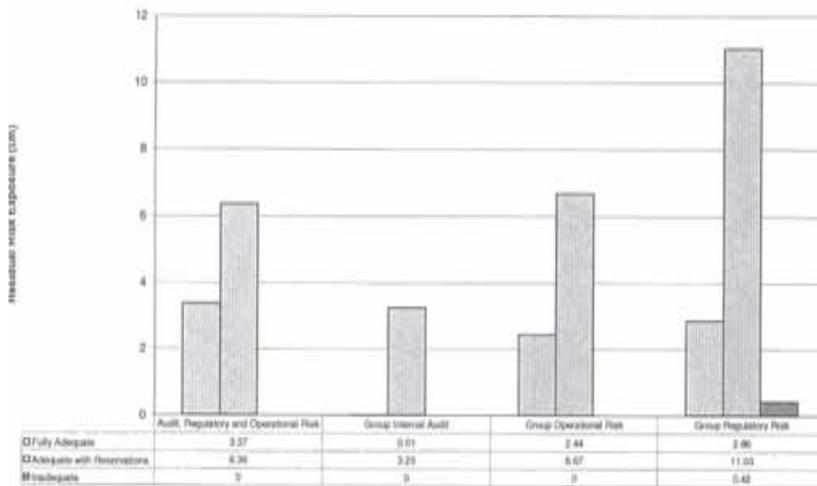


# Operational dashboard (level 2)

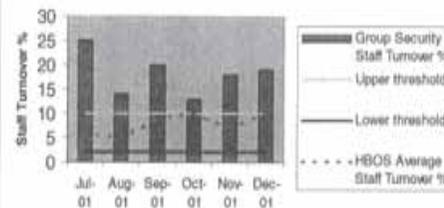


# Core systems report (level 3)

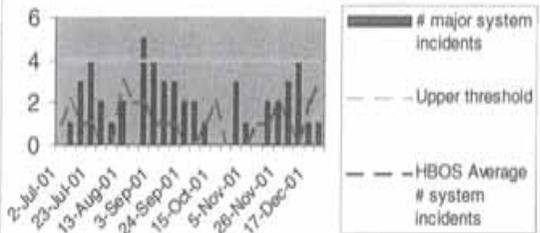
Residual Risk Exposure by Control Adequacy - Audit, Regulatory and Operational Risk as at 30th June 2003



Group Security - Staff Turnover %



Group Security - Number of Major System Incidents



Mandatory Fields Indicated by \*

\*Organisation Unit: Audit, Regulatory and Operational Risk

## Risk Record

*Review Period	Status	*Risk Type	Risk No	Key Risk
31st Dec 2003	No Action Taken	Adopted	18036	Yes

\*Risk Owner: Ammy Seth/Arthur Selman/David Fryatt

\*Risk Title: The risk that the technology does not deliver the intended benefit due to ineffective project management or non-performance from a service provider.

Risk Description: The risk that ineffective project management leads to key functionality being absent from the system or significant time delays in implementation, together with increased costs. Alternatively, lack of control and influence over a non performing service provider (e.g. GBS, Algorithmics, SunGard) leads to the same result as above.

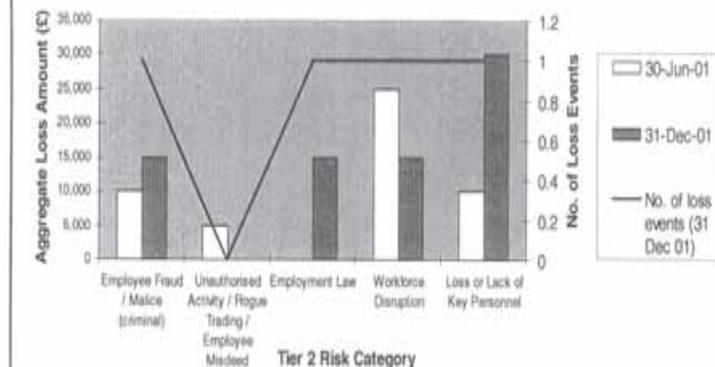
## Risk Record - Details

*Risk Category - Tier 1	Risk Category - Tier 2	Risk Category - Tier 3
Systems	Systems Development and Implementation	No Option Selected

*Potential Causes	*Potential Impacts
Insufficient service provider resource Insufficient service provider skill sets Poorly defined specifications Poor build of systems Poor delivery process Lack of co-ordinated approach by GAROR in using limited GBS resource	Non delivery of core functionality Users select alternative solutions - groupwide disparity Data reported are inaccurate/misleading Regulatory scrutiny Non Basel compliant

*Current Controls	Control Weaknesses
3rd party agreements and SLA's Steering committee for OpData Project Minimum Standards Group PPG GORRC RMDP ORWP	Ineffective SLA with service providers, leading to lack of control and influence over resourcing decisions made by internal or external service providers

Loss Events by Tier 2 Risk Category



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# Risk policies

- Background
- Definition of risk
- Overall objectives
- Principal sources of risk
- Governance
- Measurement, monitoring and reporting
- Overall risk appetite
- Stress testing

# Expressing risk appetite in risk policies

- Direct financial loss, or specific measures
- Non-financial statements
  - The Group's appetite for operational risk is that which achieves a satisfactory trade-off between the level of risk and the size of the likely returns. This principle applies across all types of operational risk loss and decisions on operational risk appetite must always be taken on the basis of this cost:benefit analysis.
- Appetite and tolerance
  - Continuity plans exist for business critical areas. The plans aim to ensure that, following an event, the Group is open for business the next working day and addresses the timely resumption of business as usual. The Group has no appetite for periods beyond those specified in the plans.
  - There is no appetite for reputational risk. On all outward announcements the group chief executive has to approve the final wording *or*  
The Group has no appetite for adverse media coverage and will use every effort to ensure that events that could potentially lead to such coverage are avoided

# Some closing thoughts

- There will be appetites for every risk
- They will be based on an assessment of risk and the cost (including quality) of 'controls'.
- Even where the appetite is zero (often involving operational risks which cannot be avoided), determine levels of tolerance which, again, will be subject to cost-benefit analysis.
- There will certainly not be a universal number or universal approach.
- Nobody said it was going to be easy!

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