

Operational Risk Management

How it fits in the ERM framework.

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Zurich North America

Agenda

- Key Foundational Issues
- Zurich's ERM Program
- Operational Risk Process Overview
- Key Risk Indicators
- Loss Event Management
- Quantification & Modeling
- Reporting & Monitoring
- Integrated Approach
- Summary

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- Key Foundational Issues

Operational Risk

Key Foundational Issues

- Definition of risk – OpRisk v. strategic risk definitions?
- Clarifying the boundary between OpRisk and other risks such as investment/financial, credit, insurance and strategic risk
- Appropriate classification schedule (cause, event or effect?)
- Modeling – what distribution, methods, statistical tests are appropriate?
- Data
- Use of scenarios
- Optimization of risk/reward within risk appetite/tolerance and context of cost benefit analysis

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- Zurich's ERM Program

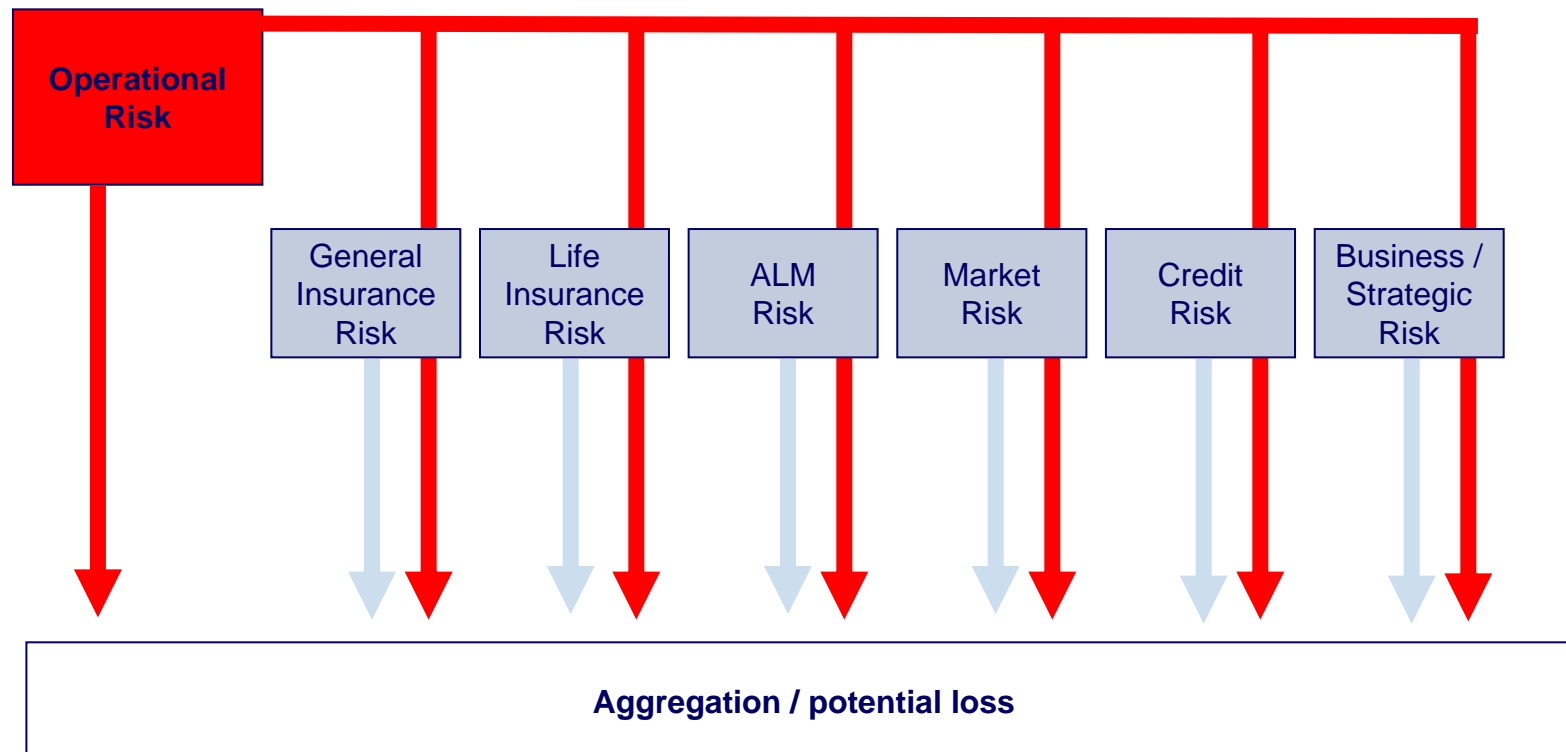
Zurich's ERM Program

Linkage from risk categories to Zurich Governance Committees

Risk Categories	Example risks	Supporting committees/processes
Investment and Financial Risk	<ul style="list-style-type: none"> • Solvency • Market liquidity risk • Financial reporting integrity 	<ul style="list-style-type: none"> • Balance Sheet Committee • Asset Liability Management Investment Committee (ALMIC) • Disclosure Committee
Credit Risk	<ul style="list-style-type: none"> • Reinsurance recoverable • Counterparty risks 	<ul style="list-style-type: none"> • Balance Sheet Committee • ALMIC • Group Credit Policy
Operational Risk	<ul style="list-style-type: none"> • Compliance • Crisis Management/Business Continuity/Disaster Recovery • Fraud 	<ul style="list-style-type: none"> • Risk and Control Committee • Pension and Savings Committee • ZHCA Audit Committee
Insurance Risk	<ul style="list-style-type: none"> • Reserving • Cycle management, • Exposure management • Accumulation management • Emerging Risks 	<ul style="list-style-type: none"> • Reserve Committee • CAT Committee • Balance Sheet Committee
Strategic Risk	<ul style="list-style-type: none"> • Capital structure • Risk tolerance/concentration • Competition • Reputation 	<ul style="list-style-type: none"> • Balance Sheet Committee • ZNA Senior Staff

Bridging the Risk Silos

- Operational risk is a result of the various operations undertaken by the Group and is further impacted by the interdependency between risk types
- Unlike other risk types, an increase in operational risk is not usually rewarded by higher returns



Zurich's ERM Program

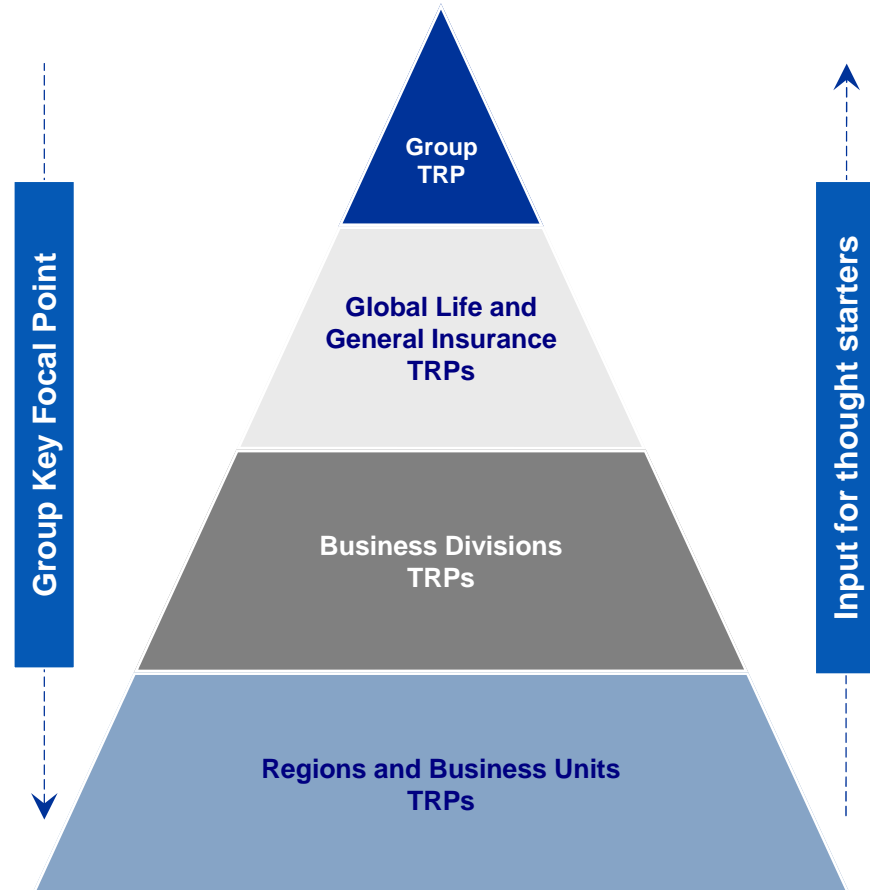
Comprehensive TRP strategic risk identification

process

① Generic TRP process ...



② ... at all levels of the company

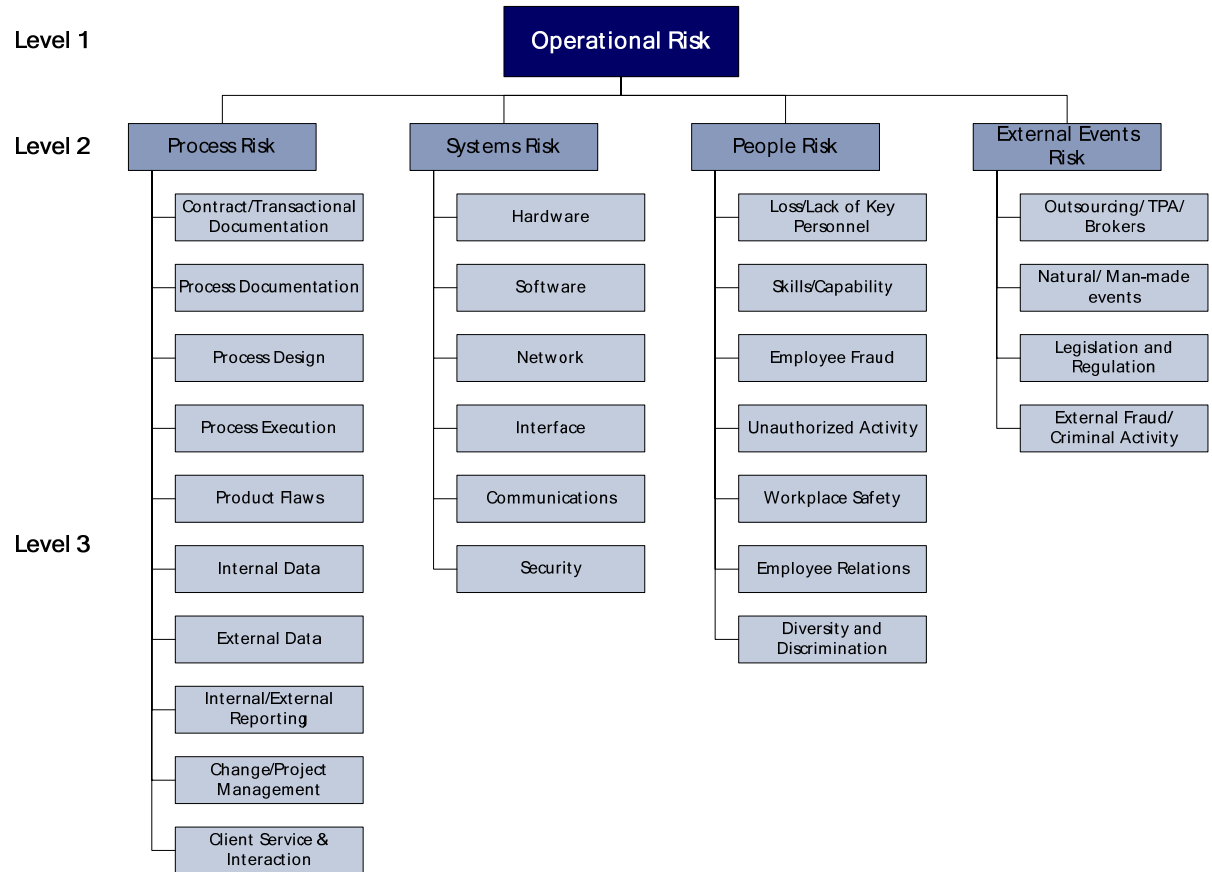


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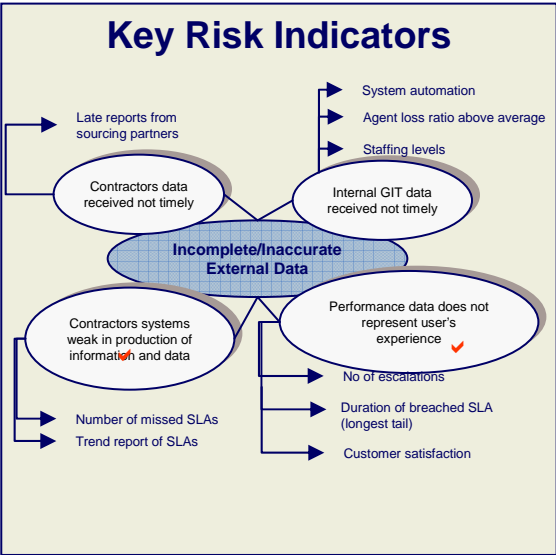
Op Risk Defined

Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.

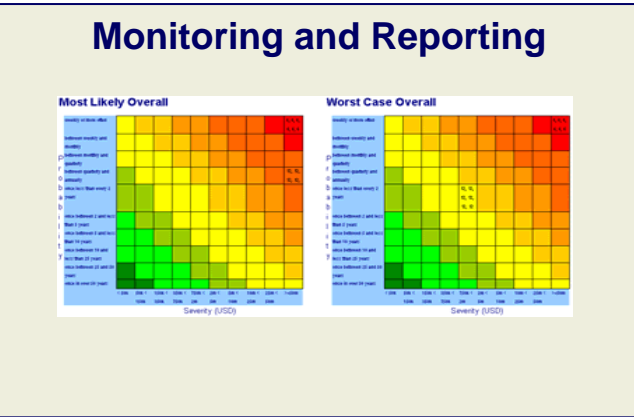
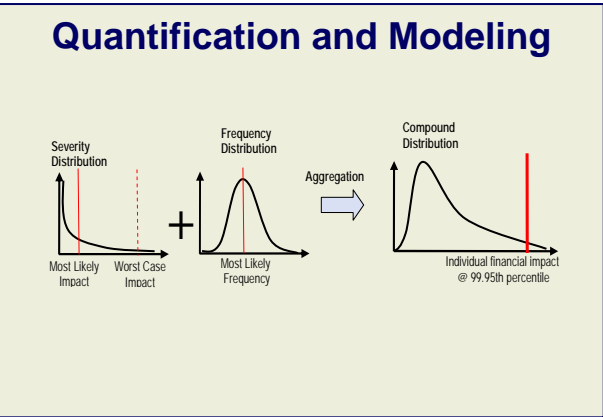
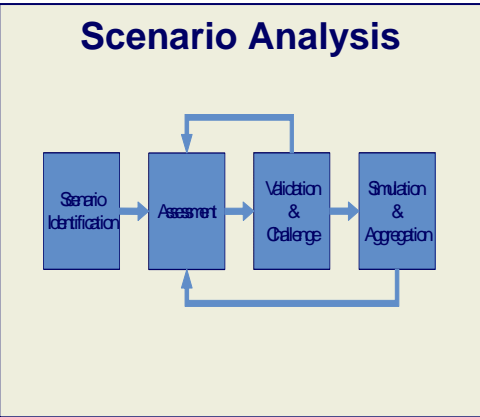


Zurich's ERM Program

The OpRisk Toolbox

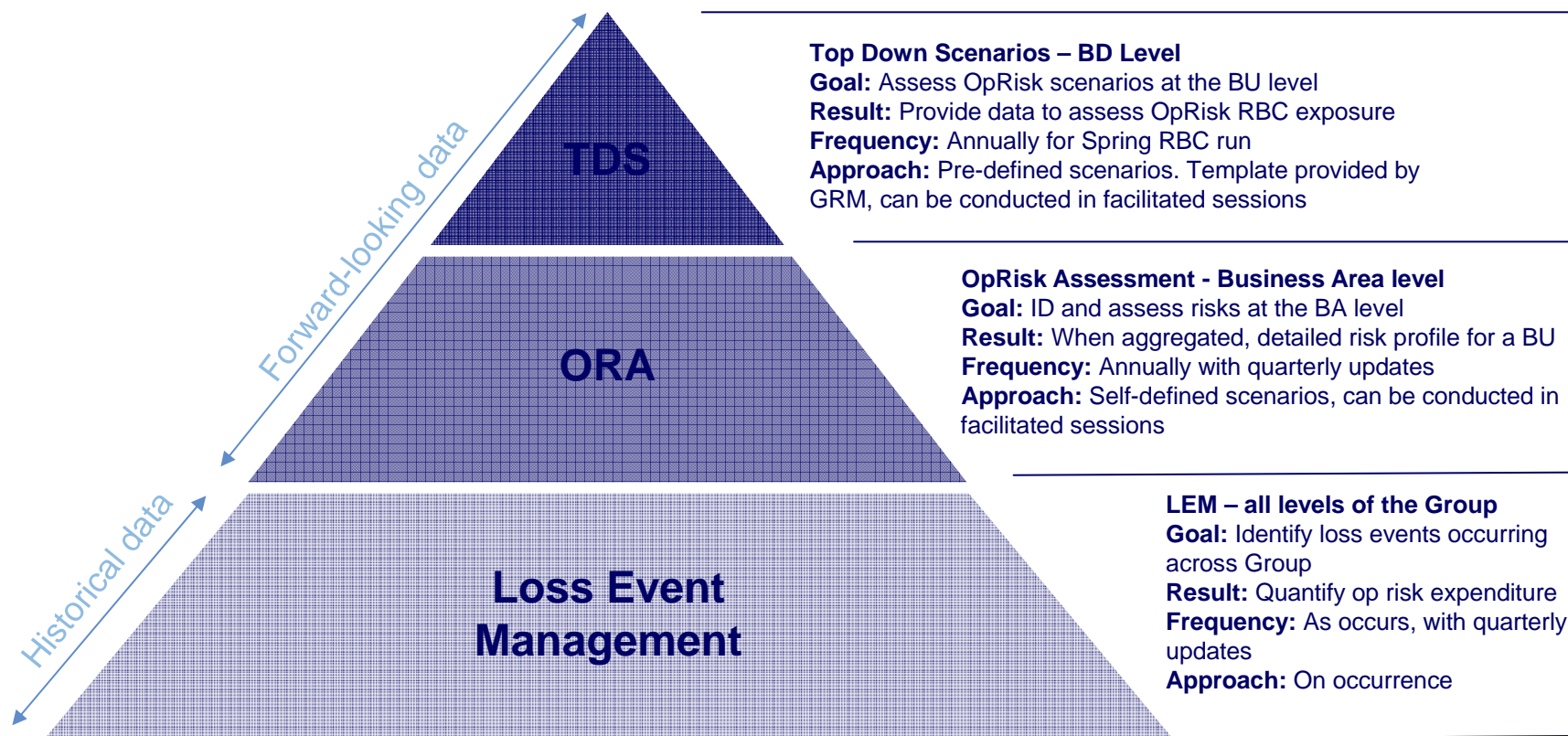


Issue and Action Management



Zurich Operational Risk and Control Framework

Operational Risk Assessments – relationship between the assessments



Information Flows:

1. TDS risks feed ORA scope
2. ORA risks feed ratings on TDS
3. ORA risks identify sources of potential loss events
4. Loss event data could show where risks need to be mitigated
5. Loss event data feeds ORA ratings
6. Loss event data feeds TDS ratings

OpRisk

Bottom Up vs. Top Down – Similar objectives but differing approaches

	Self Assessment	Scenario Analysis
Perspective	Bottom Up	Top Down
Assessment Level	Business Area	Business Unit
Risk Identification	Self-defined scenarios	Pre-defined scenarios
Assessment Owner	Business Area Head	Business Unit CEO

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- Key Risk Indicators

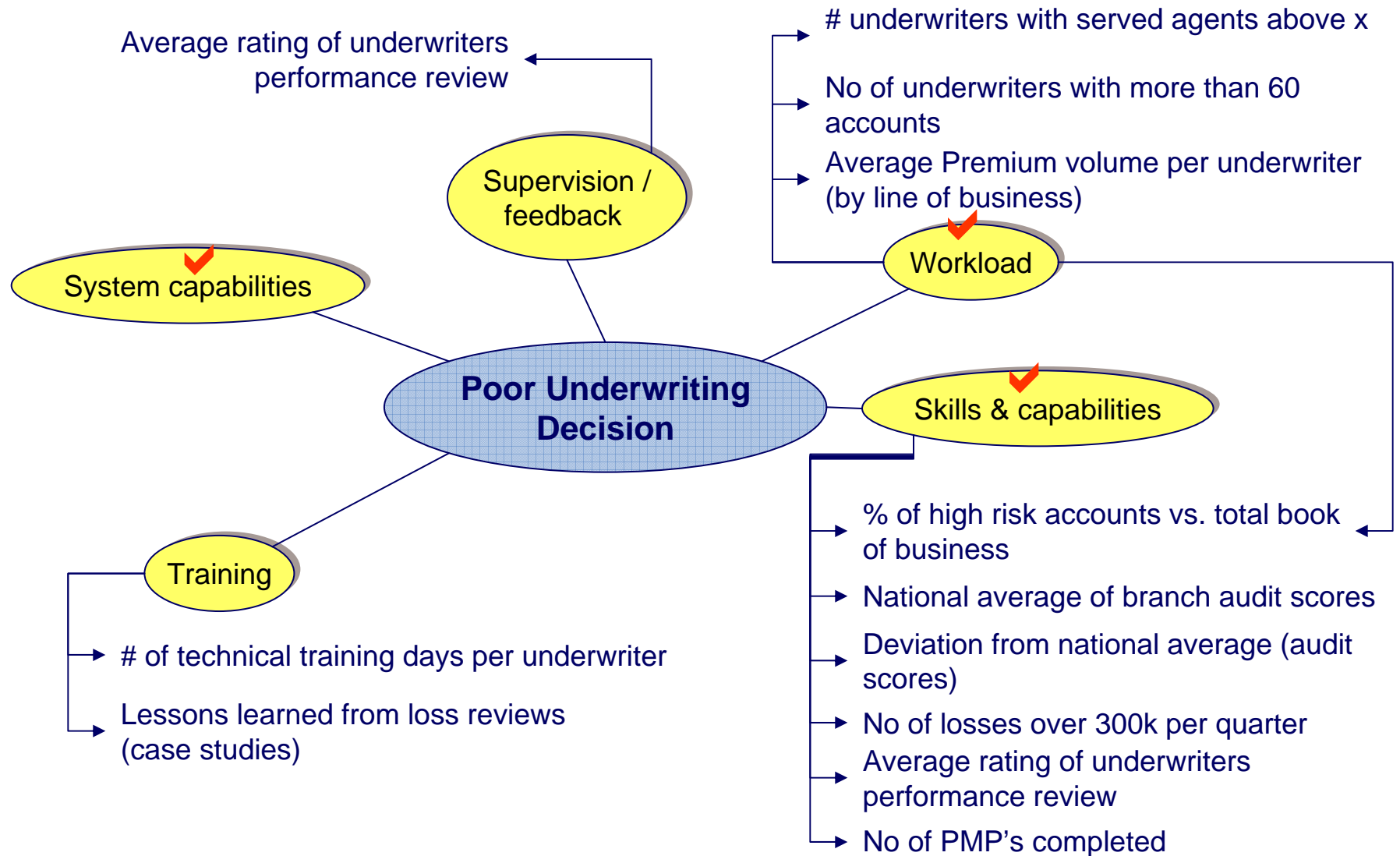
Key Risk Indicators - monitoring changes in the profile

- Key Risk Indicators are used to monitor changes in the risk profile on an ongoing basis
- Which KRIs should we use?
 - Senior management only want a few -> but local management wants to review those relevant to their business...
- Lead or lag indicators?
 - This is the key to making KRIs really useful
 - Wouldn't you like to know that a risk is going to crystallize before it crystallizes?

KRI: Benefits

- KRIs differ from loss events because they are more **prospective** than retrospective. They are not associated with specific losses, but indicate the **general level of operational risk**
- Help the business to understand, and provide tangible evidence, as to where risks and controls exist and at what levels
- From a modeling standpoint, the goal is to find relationships between specific risk indicators and corresponding rates of loss events. If such a relationship can be identified, then risk indicators can be used to **identify periods of elevated operational risk.**
- KRIs allow the business to monitor changes in the risk profile of the business quickly and monitor the risk profile against the agreed threshold limits.

KRI: Example



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Tackling Loss Event Management

- A loss event occurs when a risk crystallizes into an event
- Provides the organization with backward vs. forward looking data
- Collection and analysis of loss events supports a learning environment that seeks improvement in processes
- Best Practices – mostly driven by Basel II -> no real consensus on reporting thresholds for insurance companies

Where can I find Loss Event Data?

- Daily observations
- Peer reviews / technical reviews
- Regulatory fines and penalties
- Customer complaints / service failures
- Transaction errors
- Unauthorized transactions
- Vendor delivery and disputes
- Incorrect process documentation and execution
- Incorrect payments
- Product design
- Product (and/or literature) defects
- Accounts payable / receivable
- Accounting errors and tax obligations
- External reporting
- System outages, network outages
- Employee health and safety
- Financial crime

What losses should we capture?

- Based upon historical data from the banking industry...

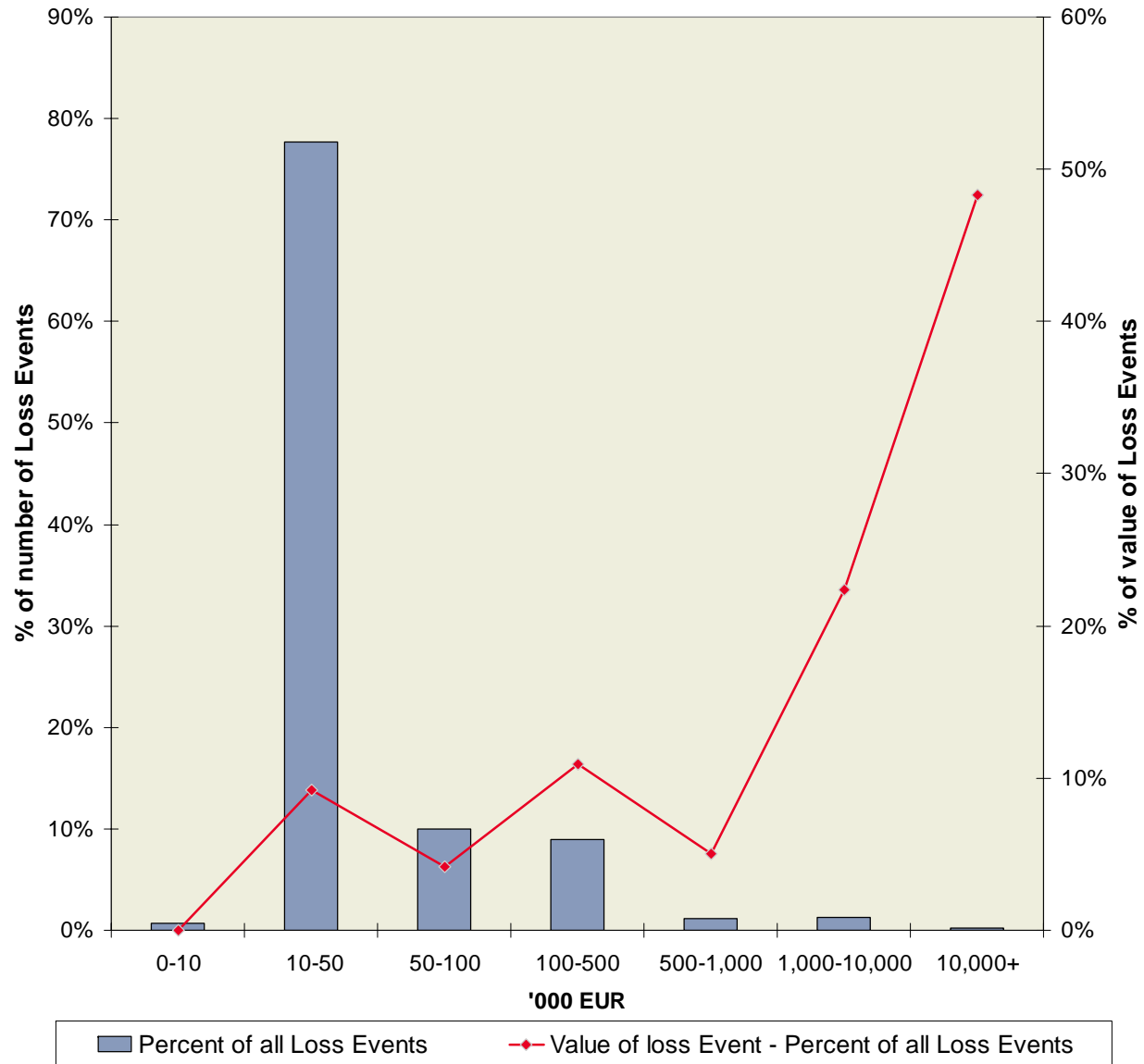
Gross Loss Amounts ('000 Euros)	Number of Loss Events		Value of Loss Events	
	Number of Loss Events	Percent of all Loss Events	Value of Loss Event ('000 EUR)	Value of loss Event - Percent of all Loss Events
0-10	313	0.70%	1934	0.02%
10-50	36745	77.70%	720489	9.20%
50-100	4719	10.00%	324783	4.20%
100-500	4217	8.90%	847645	10.90%
500-1,000	563	1.20%	387818	5.00%
1,000-10,000	619	1.30%	1748752	22.40%
10,000+	93	0.20%	3764104	48.30%

Source: The 2002 Loss Data Collection Exercise for Operational Risk: Summary of the Data Collected. BIS, March 2003.

Data from Banks with a minimum cutoff lower than 10.000 EUR

Weighing the options...

Loss Events - Number of events and Values



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Quantification and Modeling OpRisk Exposure

- Feasibility is driven by the nature of operational risks faced and also level of resources and dedicated to OpRisk
- Uses qualitative and quantitative data -> approach should consider data available within the business to support these efforts
 - Data quality is crucial in order to have reliable modeling results!
- Early implementation of scenario analysis will allow a consistent pool of data for modeling purposes while other processes are being implemented

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Consistent Reporting and Efficient Monitoring

Reporting:

- Integrated, automated and intuitive
- Provide a review, analysis and summary
 - Visual summary for streamlined high level analysis

Monitoring:

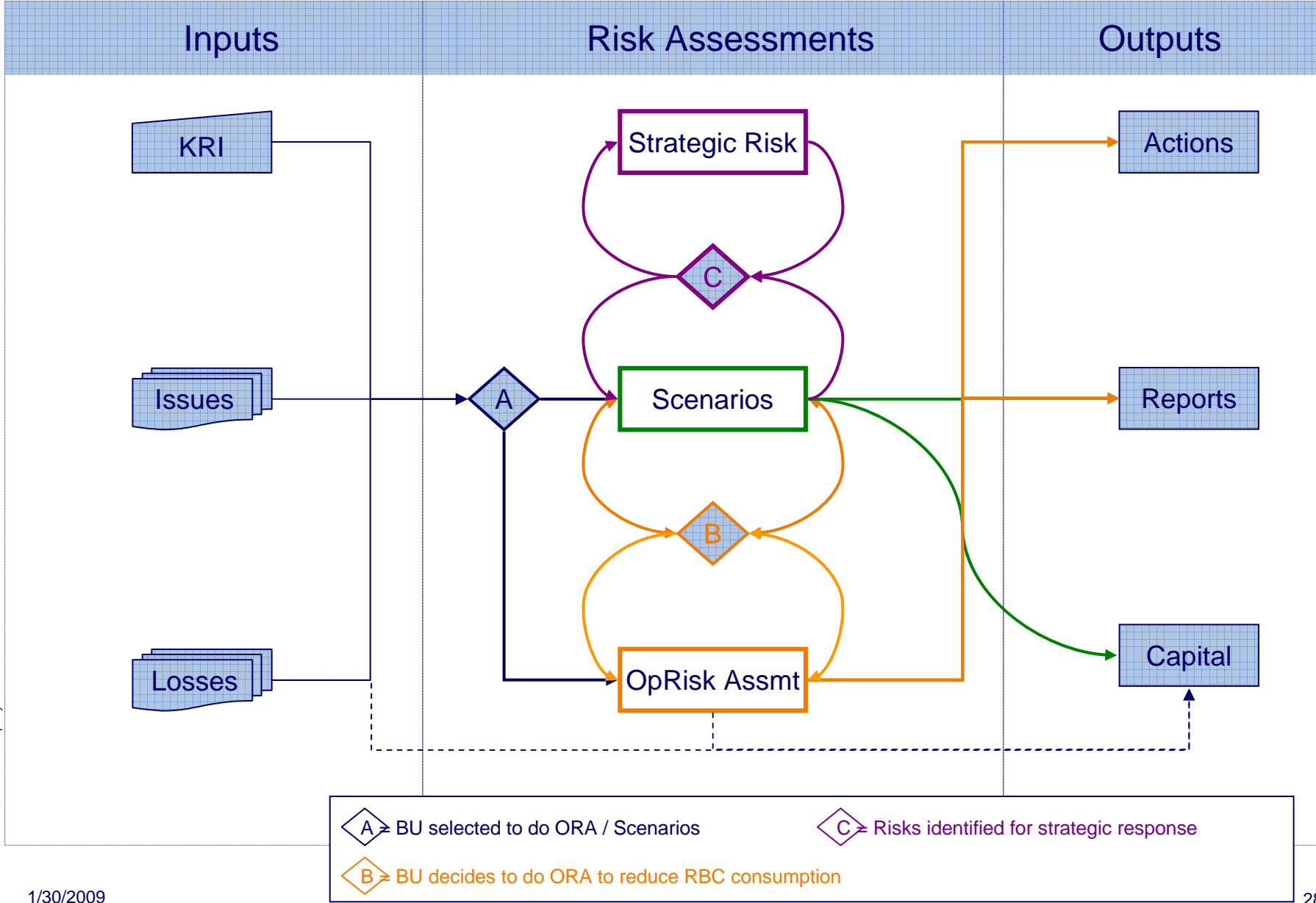
- Should coincide with the meetings of key risk/management committees
- Minimum of quarterly review

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Zurich's OpRisk Program

Pulling It All Together



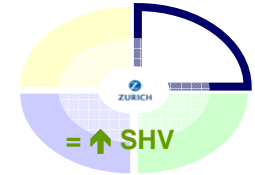
OpRisk

Sound Principles to Consider

- Embed OpRisk framework as part of a wider Risk Governance
Mission and Vision -> align it to the strategic objectives and culture of the firm
- Risk management should be embedded in the business -> this is where the 'risk taking' happens!
- Risk managers should support the business in accepting risk in a controlled environment
- Audit supports risk efforts by providing assurance with regard to all levels of risk management

OpRisk

Benefits - Shareholders



There are at least three primary ways that OpRisk enhances shareholder value:

- Capital efficiency (see Regulators and Ratings benefit slides).
- Cost reduction - primary as a result of reduced losses, and secondarily due to process efficiencies.
- Revenue enhancement - successful implementation of OpRisk framework creates a competitive advantage in the form of an ability to more aggressively grow the business in a controlled manner.

OpRisk

Benefits - Management

Local management

- **Avoid** unexpected operational **losses** by better managing operational risks
- **Provides tools** to managers to manage and track their risks and risk management actions
- Increases the chance of **achieving business objectives**
- Culture of **transparency** and clear risk **ownership**

In addition for senior management

- **Embedding** of **responsibility** to manage operational risks into existing management process and **increased awareness** of operational risks promotes **risk based decision making**
- **Consistent, effective and efficient** approach to manage and report on operational risks across the Group

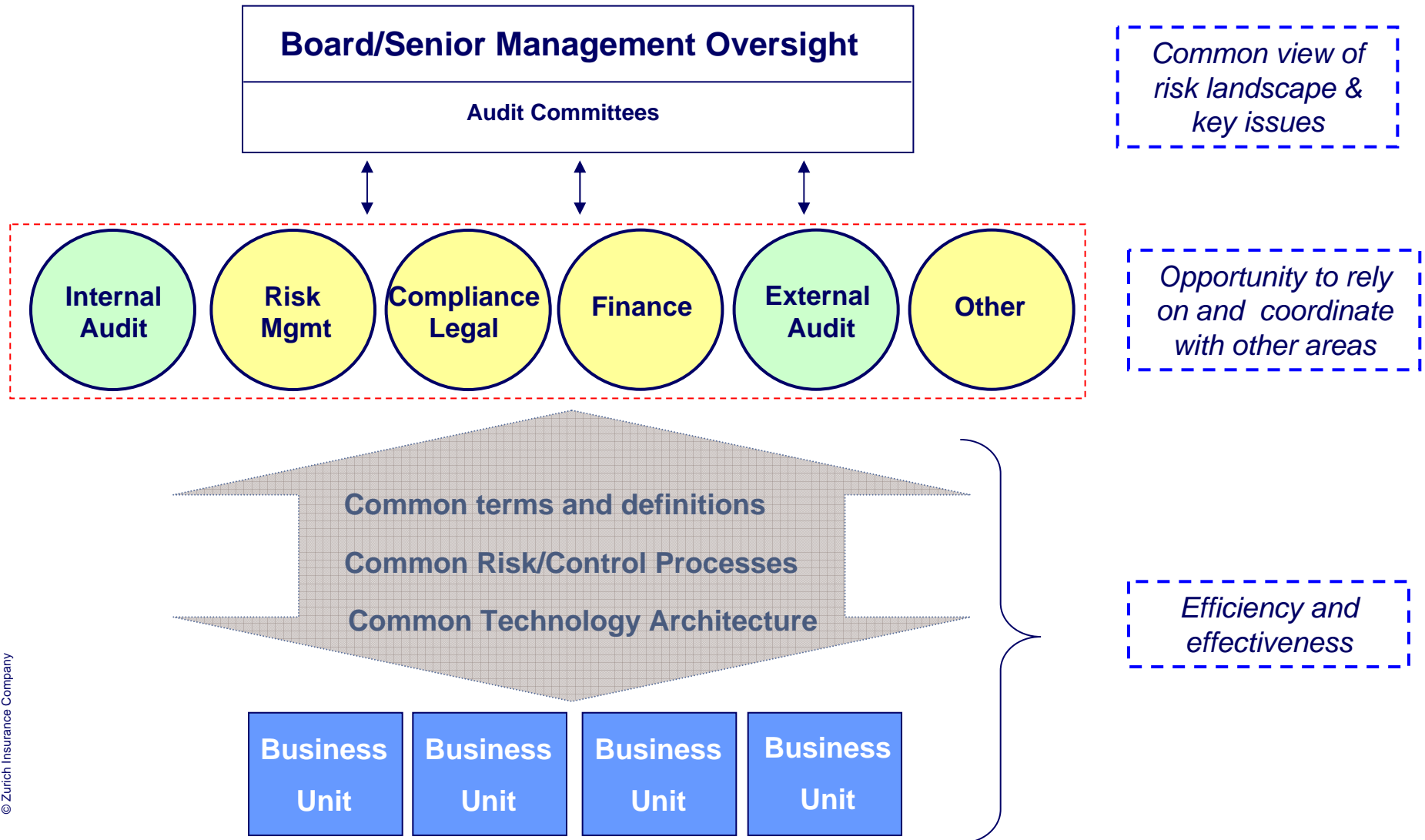
OpRisk

Having an integrated approach

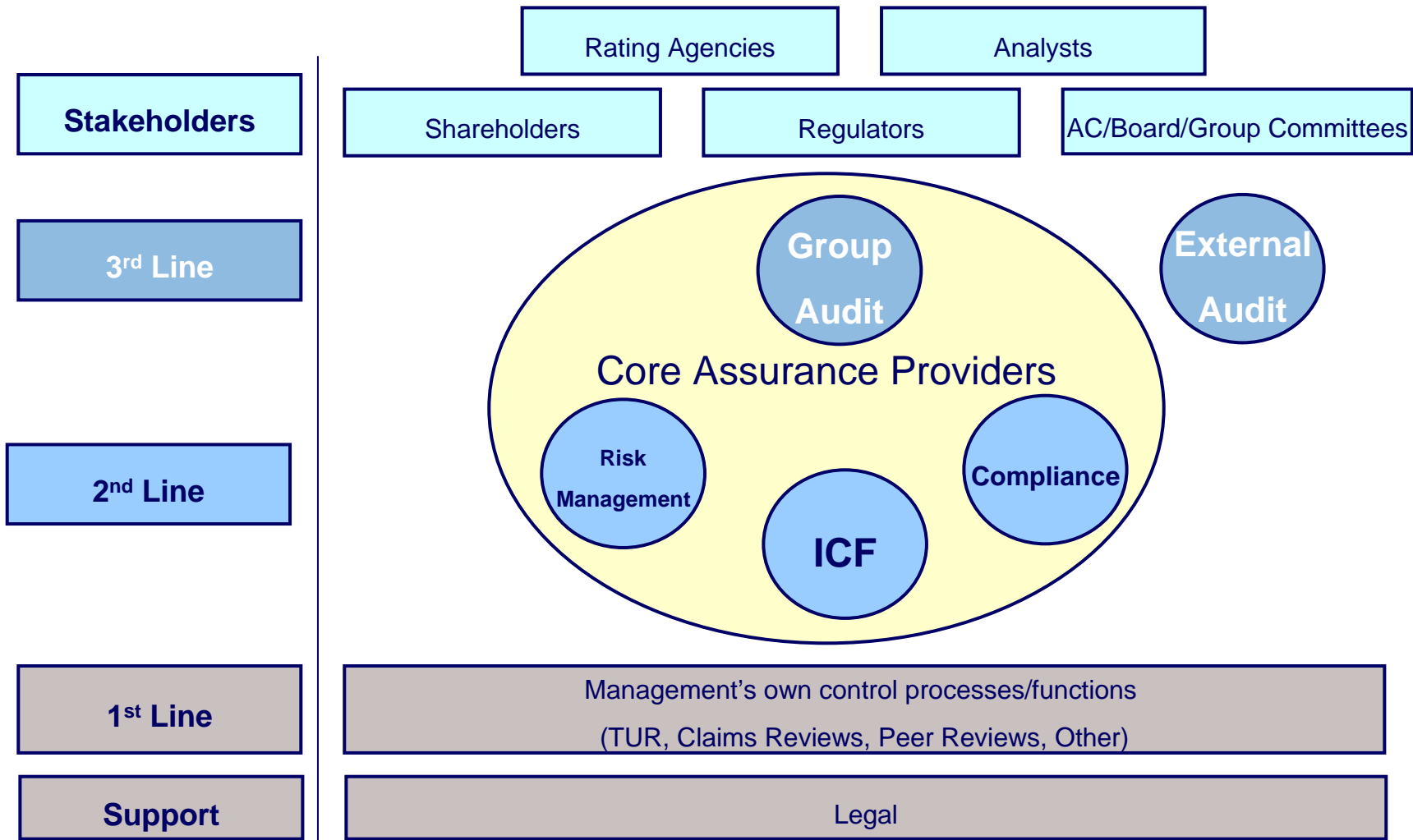
- Break down the silos
 - Create a road map showing the links across the business between risk and other assurance providers
 - Leverage, to the extent possible, their work (e.g. Compliance, Audit, Legal, Controls, etc) to find an integrated approach for OpRisk
 - Create a feedback loop across all assurance functions

Zurich's ERM Program

Collaboration between functions provide an integrated view of risks

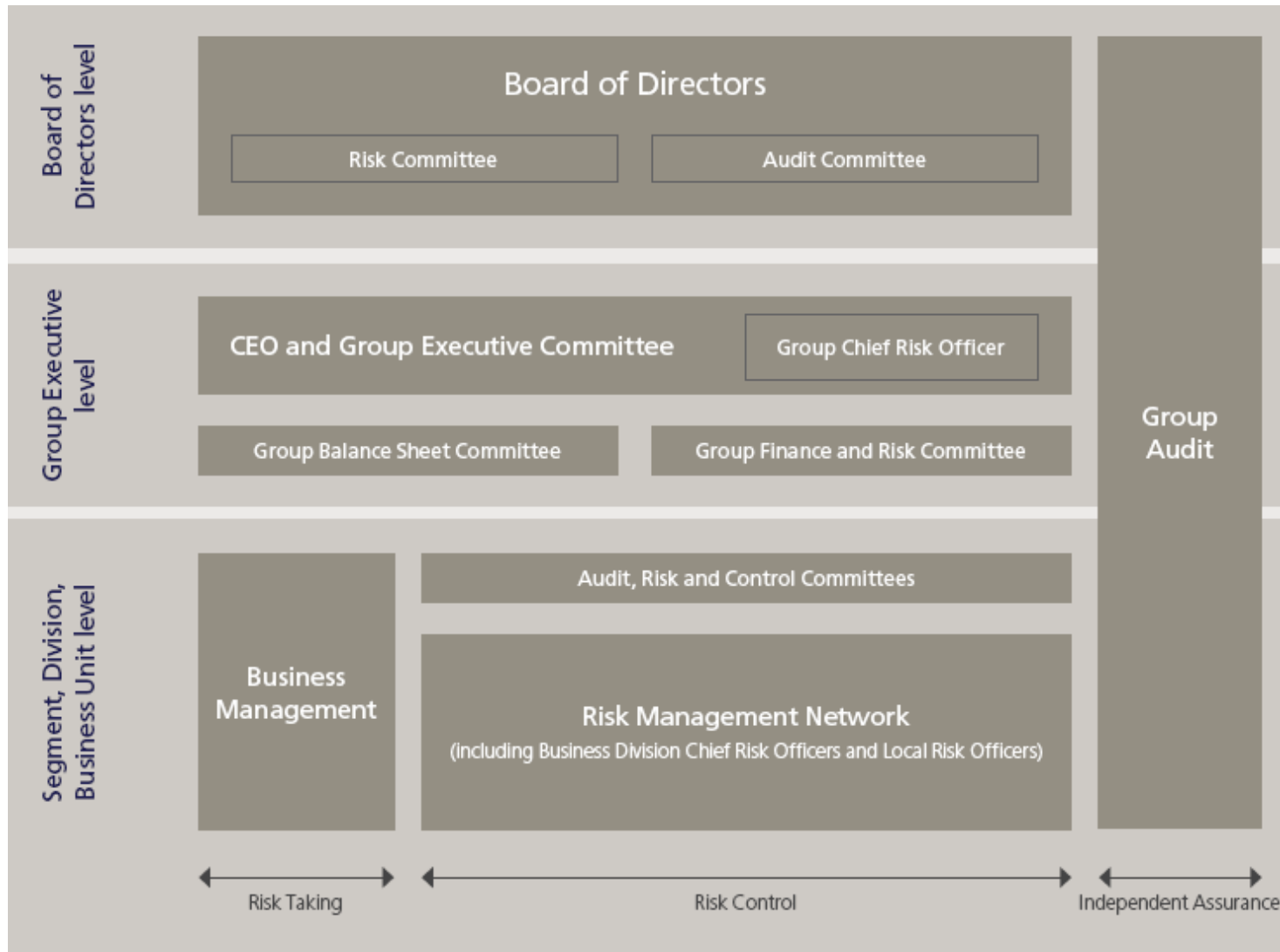


Overview of the Relationship between Zurich's Assurance Providers



Zurich's ERM Program

Zurich's Enterprise Risk Management and Control Framework



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To sum it up...

- Obtain the necessary support *You need their help to succeed...*
 - Executive Management
 - Buy-in from the organization
- Increase awareness of operational risk *Make it relevant...*
- Have an integrated approach *Leverage those with similar processes and requirements...*
- Focus on quality *Make it part of the process...*

Characteristics of Successful ORM

- OpRisk should be **PACED**:
 - **Proportionate** to the needs of the business and the nature of risks faced
 - **Aligned** with strategic and operational objectives
 - **Consistent** in scope and deliverables
 - **Embedded** and integrated through a risk-aware culture
 - **Dynamic** and responsive to change

Questions?