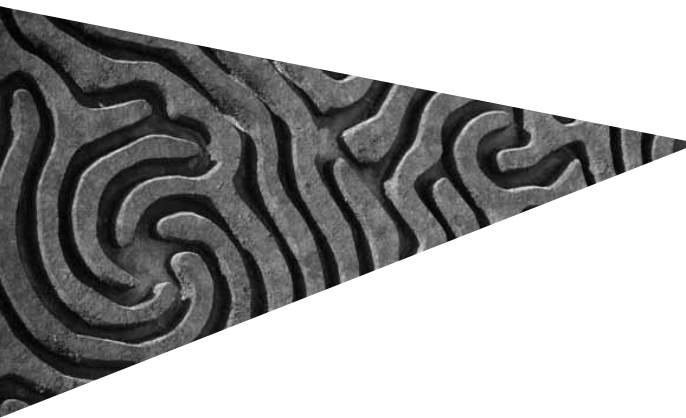


Risk in business situations

Learning from the financial crisis to improve the management of risk



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Current Market Drivers

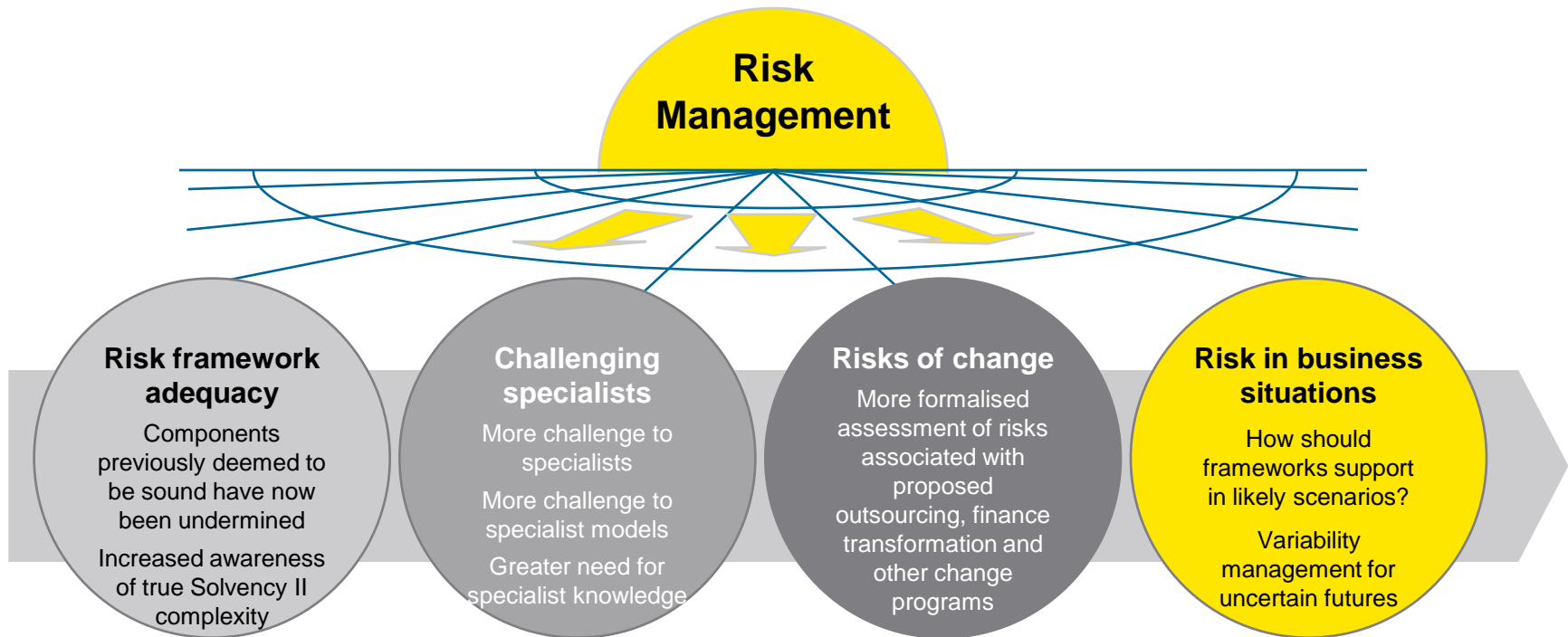
As a result of the current financial crisis, there is a desire to have more confidence that:

- ▶ Risk frameworks and departments will respond appropriately in the midst of crisis and a challenging business environment
- ▶ The risk-related effect that cost reduction measures in one part of the value chain can have on other parts of the organisation is understood... before the decision is made to make the change
- ▶ Cross-departmental, integrated assurance frameworks are efficient ie, focused on the most important business activities and without overlaps that incur unnecessary cost
- ▶ Risk and control assessment frameworks are comprehensive and robust and can form a solid base for more dynamic risk navigation and variability management
- ▶ Recent investment in risk-related initiatives will be leveraged
- ▶ Increasing regulatory/rating agency scrutiny will not add unexpected workload in relation to risk frameworks

Increased desire for the things Risk Managers wanted before the crisis
Increased awareness of (and desire for) new things that would be useful

New light on risk management in financial services companies

The financial crisis has shed new light on ways that risk management could be improved. With that comes increased expectation that it will be

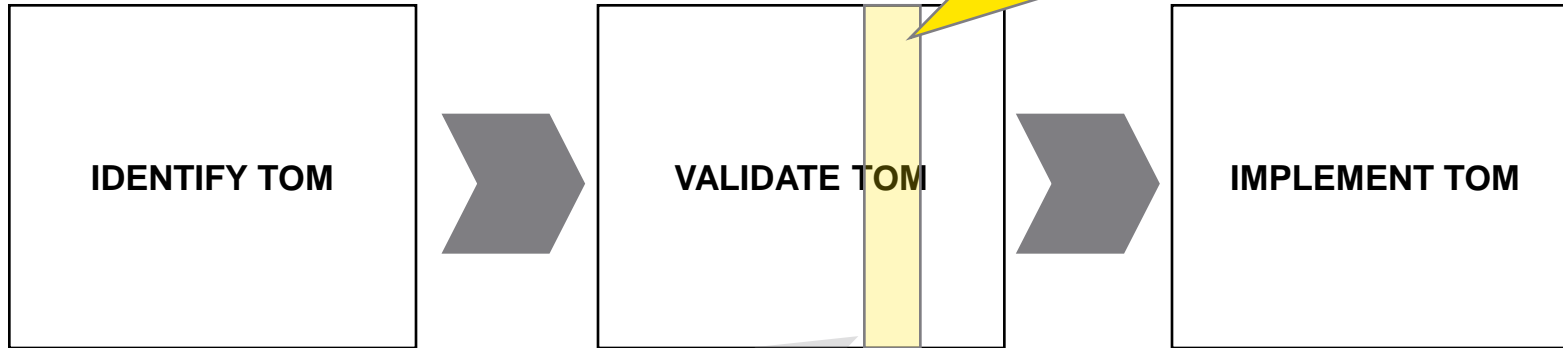


The opportunities for improvement are clear. Some will be driven by new regulation, others by a desire for greater contribution from the risk management framework to the running of the business – particularly in chaotic circumstances.

Structured Risk Assessment in Cost Reduction & Transformation Programs - simplified model



By implementing a structured risk assessment step into the validation of each component of the TOM, the change in risk brought about by the proposed operational changes can be understood and managed explicitly



Risks of proposed changes

Comparing the changes in risk to the other effects of the proposed changes

Proposed Operational Changes	Capital	Risk	Revenue	Cost
XXXXXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy
XXXXXXX	yyyyyyy	yyyyyyy	yyyyyyy	yyyyyyy

Building in the risk assessment phase plugs a gap often left by:

- 1) Conventional operational risk management frameworks which rarely participate directly in assessing the risks of possible changes
- 2) Program risk assessments which often focus on risks to/in the program rather than risks of changes to be brought about by the program



The future is uncertain but variability can be planned for.

A proactive and structured approach to planning for and managing variability across the organisation can improve a firm's capability and confidence in dealing with uncertainty in all activities ranging from Underwriting & Claims Management to Finance & IT

- ▶ Future events, decisions and actions cannot always be planned with levels of certainty that we would like.
- ▶ Difficult-to-predict situations can arise from complex business environments as a result of the range of uncertainties that will exist and be influenced by factors ranging from binary choices to the effect of chaos.
- ▶ Future combinations and permutations of events, decisions and actions will be useful to deal effectively with situations that businesses will face in the future.
- ▶ The more organised businesses can be in planning for and managing variability, the more they increase their chances of improving the top line and protecting the business assets successfully.
- ▶ The more consistent the methodology across top line related and asset protection related activity then the more effective cross-business decisions and prioritisation can be.
- ▶ However, current information on and preparedness for this future variability is limited in some organisations with the “last resort” of a capital safety net is sometimes the “first resort” for advances in measuring the level of uncertainty that exists.
- ▶ Traditional risk management techniques have tended to be backward-looking and often focused on capital adequacy rather than front-line management of uncertainty and variability. Variability management is focused on the future and is grounded in front-line planning and action management.

Variability management has been developed in relation to IT systems and software and technical processes with a particular focus on the development of heterogeneous production.

Broadening its application to wider business uncertainties in insurance and reinsurance companies is a breakthrough

Variability management helps businesses plan for and manage in real-time the uncertainties in their business and in the markets in which they operate



VARIABILITY MANAGEMENT IN INSURANCE COMPANIES

Variability of possible outcomes as a result of external and internal uncertainties presents continual challenge to senior management.

A formalised approach to planning for those uncertainties and managing consequent uncertainties as they arise is known as variability management.

Good variability management has been described as *“the missing link between operational risk management frameworks and real-time management of the business”*.



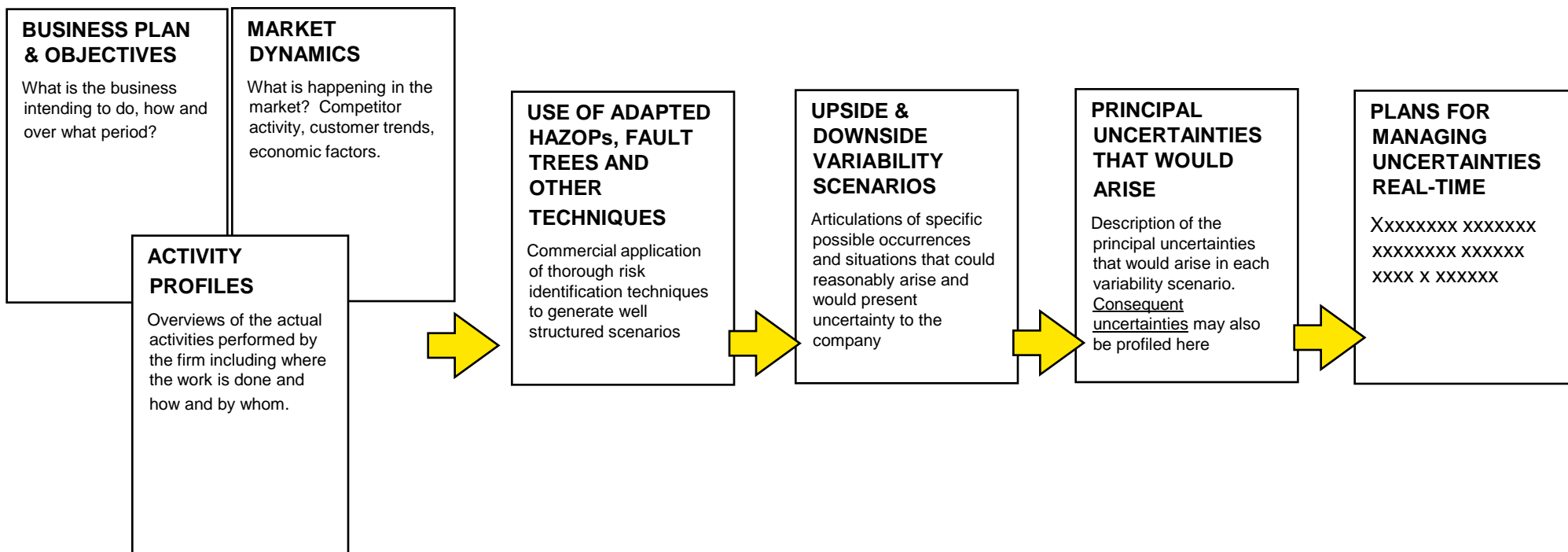
Variability Management & Scenario Planning In Insurance Companies

CONVENTIONAL SCENARIOS FOR CAPITAL	CONVENTIONAL OPERATIONAL SCENARIO PLANNING	VARIABILITY MANAGEMENT APPROACH TO OPERATIONAL SCENARIO PLANNING
<p>Focused on high level scenarios for stress testing of capital adequacy.</p> <p>The outcome is seldom linked to operational plans or action.</p>	<p>The use of scenario planning is often limited to a single set of uncertainties</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Scenario A</p> <p>Scenario B</p> <p>Scenario C</p> </div> <div style="width: 30%; text-align: center;"> <p>Action 1</p> <p>Action 2</p> <p>Action 3</p> <p>Action 4</p> <p>Action 5</p> <p>Action 6</p> </div> <div style="width: 30%; text-align: center;"> <p>Goal</p> </div> </div> <p>PRE-DETERMINED ACTION</p>	<p>In reality, consequent uncertainties will arise "further down the line"</p> <div style="border: 1px dashed black; padding: 10px;"> <p style="text-align: center;">Approaches & Actions</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Scenario A</p> <p>Scenario B</p> <p>Scenario C</p> </div> <div style="width: 30%; text-align: center;"> <p>Consequent uncertainties</p> <p>Consequent uncertainties</p> <p>Consequent uncertainties</p> </div> <div style="width: 30%; text-align: center;"> <p>Further consequent uncertainties</p> <p>Further consequent uncertainties</p> <p>Further consequent uncertainties</p> </div> </div> <p style="text-align: center;">← ITERATIVE →</p> <p style="text-align: center;">← ITERATIVE →</p> <div style="width: 30%; text-align: center;"> <p>Goal</p> </div> </div> <p>PRE-DETERMINED APPROACHES TO REAL-TIME MANAGEMENT OF UNCERTAINTY</p>
	<p>Conventional Stress and Scenario planning often has shortcomings relating to methods & performance, strategic planning, integrated firm-wide view, regulatory compliance, contingency planning, management buy-in</p>	<p>A key aspect of variability management is addressing the way in which consequent uncertainties will be identified and managed IN REAL TIME when further uncertainties will materialise</p>

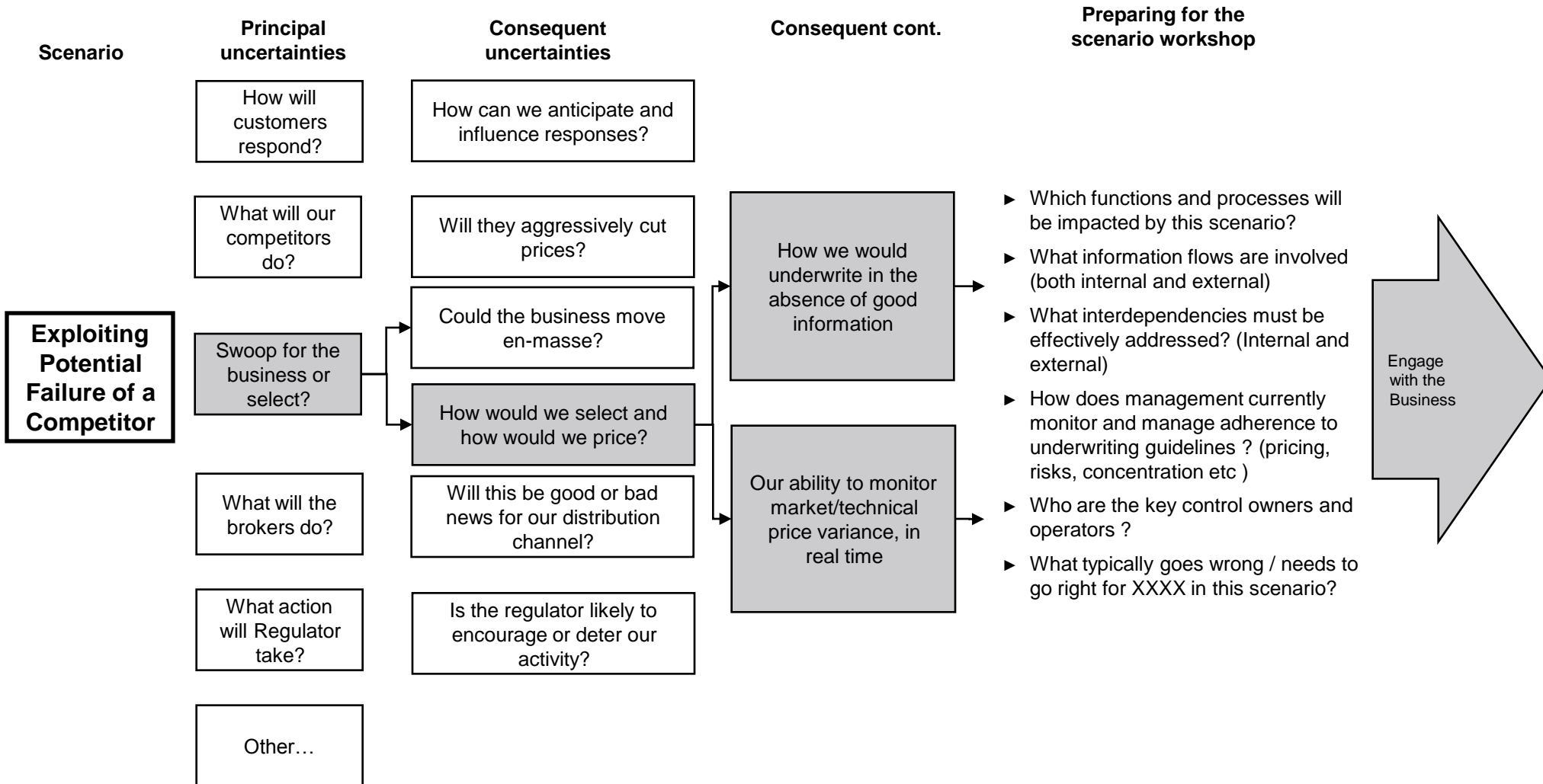


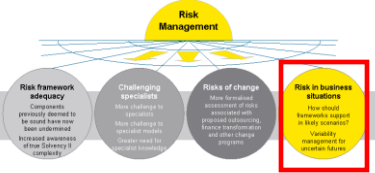
Scenario generation and evaluation

- ▶ Scenarios and stress testing is traditionally undertaken in relation to capital modelling and as such tends to focus on rare but significant occurrences.
- ▶ In variability management, risk management techniques are used for more day to day and less extreme events... to generate scenarios and to evaluate the likely impact and consequent uncertainties presented under each scenario
- ▶ Traditional risk assessment techniques including HAZOPS and fault trees provide structured approaches to the identification and evaluation of hazards in the business and risks to the achievement of certain objectives. They tend to focus on the potential downside of risk.
- ▶ Variability management uses similar techniques but applies them to all uncertainty (not just downside uncertainty).
- ▶ They are used in such a way as to assist in the identification of possibly scenarios and events that could occur in certain business activities.
- ▶ The rigour brought by the use of the tools enriches the quality of the possible scenarios/ events identified which provides an improved platform for subsequent work on addressing the scenarios identified

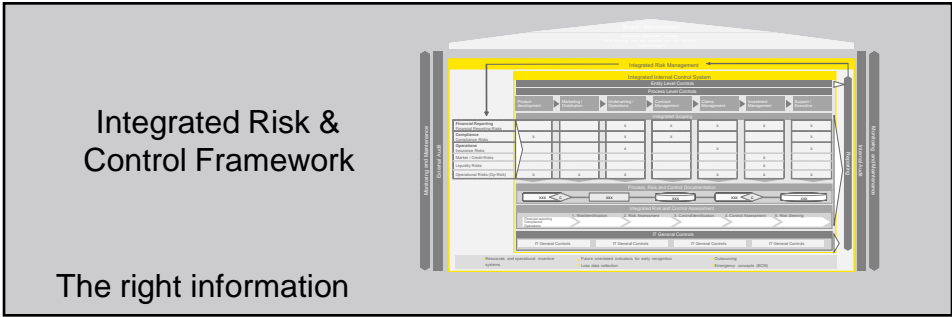


Illustrative example – Exploiting competitor weaknesses





Illustrative example – Scenario Analysis Workshop



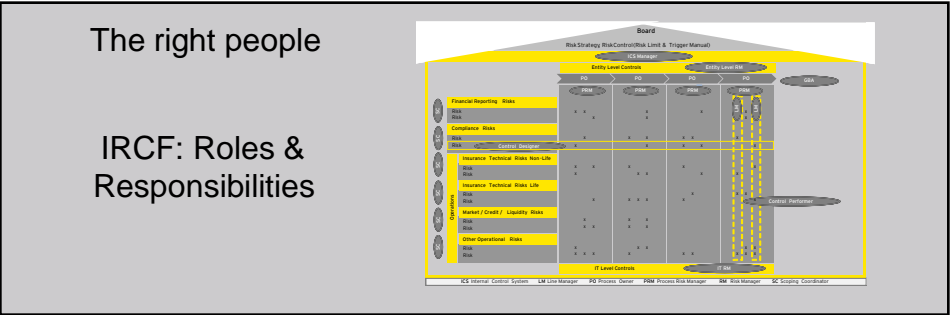
“Failure of a competitor – Select customers and price their business – effective underwriting without good data – monitoring price variance in real time”

Facilitated discussion around

- ▶ Which functions and processes will be impacted by this scenario?
- ▶ What information flows are involved (both internal and external)
- ▶ What interdependencies must be effectively addressed? (Internal and external)
- ▶ How does management currently monitor and manage adherence to underwriting guidelines ? (pricing, risks, concentration etc etc)
- ▶ What could go wrong / needs to go right for XXXX in this scenario?

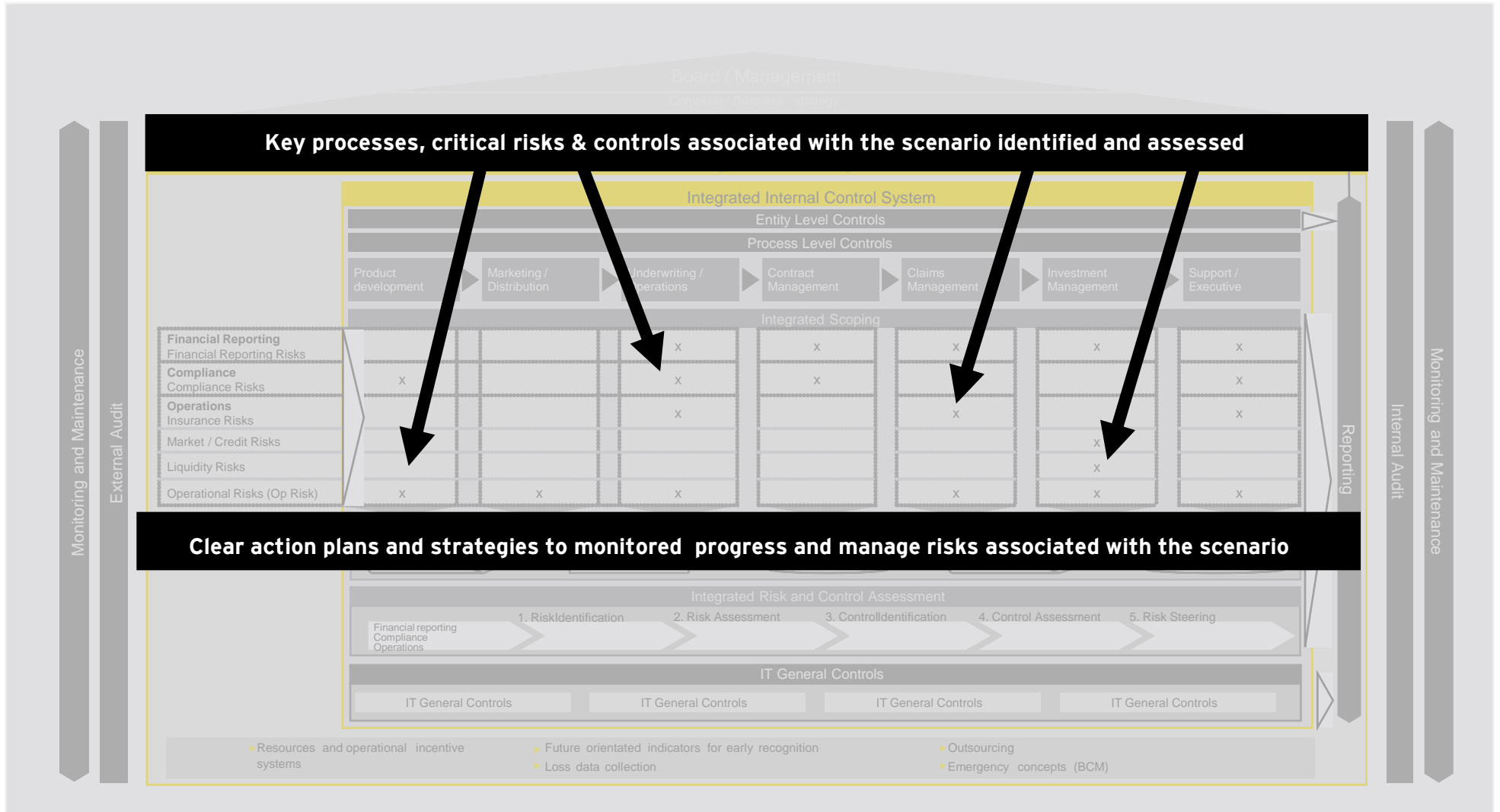
Develop a consensus view of:

- ▶ What risks arise from this scenario / prioritise them
- ▶ Which processes and controls would come under stress and how robust are they?
- ▶ Do we need to make any trade off's in terms of cost / benefit of information or our risk appetite ? And what are the implications of these?
- ▶ How can XXXX effectively monitor and manage their response to this scenario?
- ▶ What additional (control) activity must we implement to manage the risks associated with our response to this scenario





Illustrative example – Embed results into the Integrated Risk & Control Framework



Evolution of Variability Management in (Re) Insurance companies

Core Risk Management

Risk Management fundamentals often designed and operated from the centre. Some fairly explicit regulatory requirements detailing how things should be.

Generally good in UK insurance companies

ORM FRAMEWORK

- ▶ Risk Governance
- ▶ Risk Policy
- ▶ Risk Appetite
- ▶ Risk Procedures
 - ▶ Risk & Control Self Assessment
 - ▶ Loss Events Data
 - ▶ Key indicators

Applied Risk Management

Application of the framework into business –as-usual processes and activities local processes.

Application is “patchy” in UK insurance companies and tends towards a retrospective focus on things that have already happened although some learning from past incidents feeds into future use

IMPLEMENTED FRAMEWORK

- ▶ R&CSA Undertaken by business units against pre-set activity/process lists
- ▶ Structured and usually involving regular reporting with escalation procedures
- ▶ Sometimes includes SOX related reporting
- ▶ Typical activities include:
 - ▶ Underwriting
 - ▶ Claims Management
 - ▶ Reinsurance Administration
 - ▶ Technical Pricing
 - ▶ Financial Reporting

LINK TO CAPITAL MANAGEMENT

- ▶ Linking quantification of operational risks to capital adequacy and management
- ▶ Intended to be future focused but frequently constrained by availability of “retrospective” data only

PROJECT RISK MANAGEMENT

- ▶ Operational risks are managed in projects to ensure appropriate delivery of the project and benefits
- ▶ Applied to a wide variety of projects using standard methodology often set by central program management office teams

Variability Management

Front-line use of techniques to manage uncertainties in the business – often on a real-time basis and always forward-looking. Operated by line management but sometimes supported by central functions.

Widely used in an informal way but formalised approaches are limited to date in UK insurance companies and frequently not used beyond IT

LAYERS

Development of pre-populated templates to help businesses develop plans for managing uncertainties produced under different scenarios

SITUATION SPECIFIC/ EVENT DRIVERS

The way in which uncertainties are managed in particular situations eg:

- ▶ Issues causing increasing reinsurance default uncertainties
- ▶ Market cycle increasing uncertainty on erratic market behaviour on renewal pricing/ Managing through adversity
- ▶ Development of a particular new product or Entry into new market/ distribution channel

SCENARIO PLANNING

Use of techniques to generate scenarios and to evaluate the likely impact and consequent uncertainties presented under each

Assessment and improvement of readiness to manage operational uncertainties under different possible scenarios

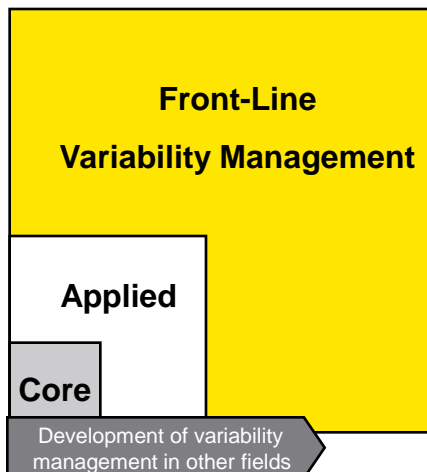
- ▶ Used where range of possible outcomes highlight consequent uncertainties
- ▶ Pre-planning of how those consequent uncertainties would be identified, evaluated and controlled on a real time basis should the scenario occur

STRATEGIC RISK MANAGEMENT

Identification of key strategic value drivers and the operational uncertainties associated with each. Prioritisation of planned activity to address the uncertainties, based on direct linkage back to strategic value drivers

BUSINESS PERFORMANCE REVIEW

Ability to agree promises relating to business uncertainties in the next quarter. Capability to demonstrate how promises relating to business uncertainty have been kept from the previous quarter



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