The Actuarial Profession
making financial sense of the future

Health and Care Conference
Wayne Ratcliffe

Embedding ERM into your business

19th May 2011

Embedding ERM into your business

1	ERM Background
2	Embedding ERM at Board and Management levels
3	Embedding ERM across the company
4	Managing ERM Development

ERM - Introduction

Traditional Risk Management

- Risk Identification
- Risk Assessment
- Risk Response

In silos (e.g. UK Critical Illness)

ERM

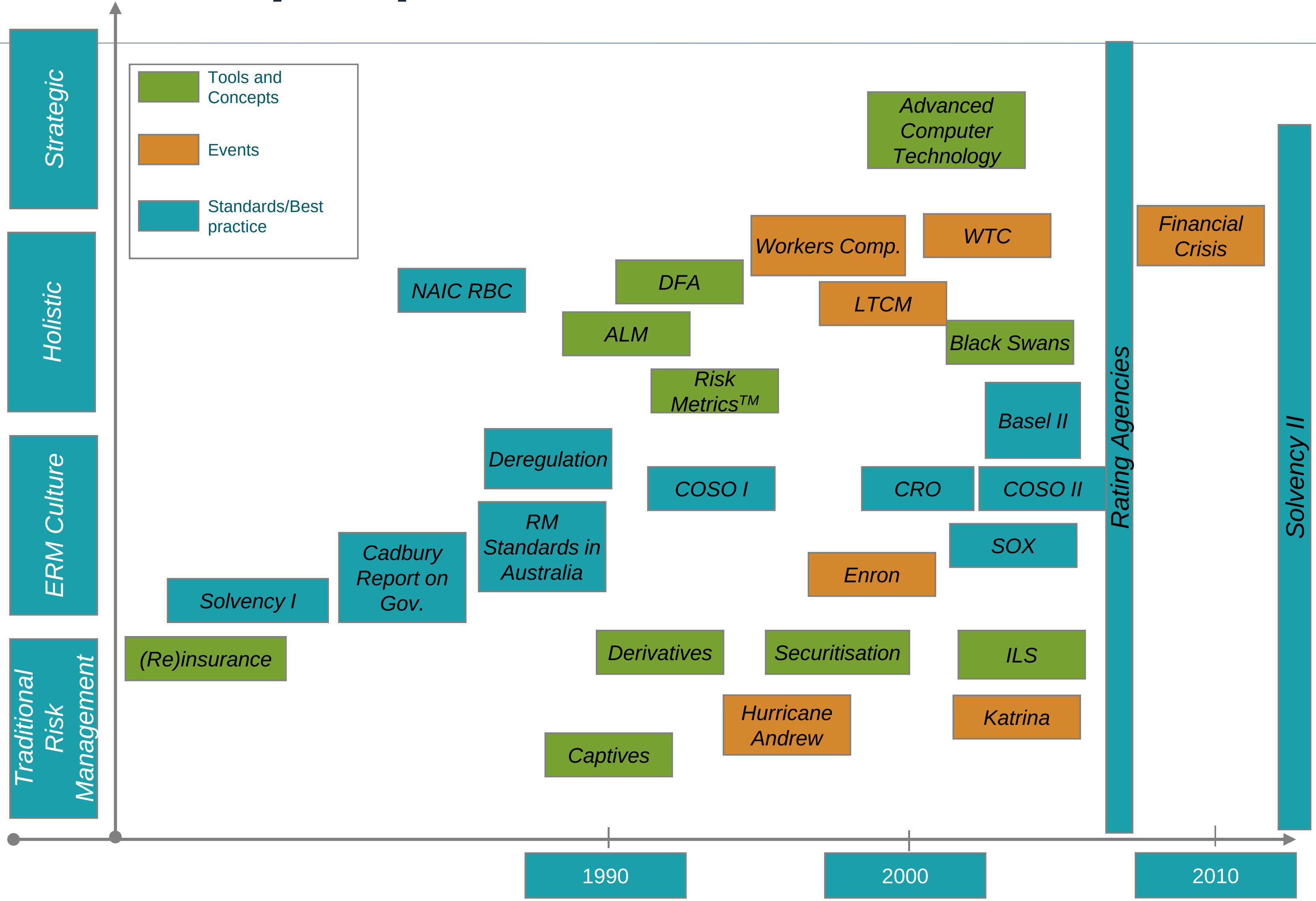
- Traditional Risk Management +
- Holistic view (across all silos) +
- ERM Culture +
- Strategic Risk Management (capital optimisation)

ERM – Specific to each company's needs

Situation	ERM Component	Objective
a. Complex risk structure	Holistic	➢ Identify accumulations, dependencies and diversification benefits
a. Complex company structure b. Weak corporate culture	ERM Culture	➢ Efficient information flows on risks ➢ Increase transparency ➢ Increase staff awareness of all company's critical risks
a. Low capital adequacy ratio b. Limited access to financial markets c. Shareholders' main objective is high ROE	SRM* SRM SRM	➢ Optimise use of capital ➢ Risk/Capital planning ➢ High risk appetite with sufficient capital to respect risk tolerances

** SRM: Strategic Risk Management*

ERM in the financial services industry – A historical perspective



ERM lessons learnt from the financial crisis

Risk decision takers must…

- have accountability for **all** the bets they take, not just for the winning bets.
- realise that risk history is not destiny.
- realise that modelling is only an analytic tool to provide input for the decision taking process.
- not be rewarded for excessive risk taking.

Risk managers must…

- keep challenging the answers.

Source : North American Actuarial Associations – September 2009.

Rating Agencies' influence on ERM

- Increasing focus on ERM in last 5 years.
- Initially only financial institutions but now extended to other companies.
- ERM criteria and recommendations generally aim at "**best practice**"
- Historically been more demanding than regulatory requirements (pre-Solvency II).

Example: Standard & Poor's

In 2005, S&P introduced a rating category "ERM", with five sub-categories.

Specific ERM assessment: Weak-Adequate-Strong-Excellent

- ERM Culture
- Extreme event / Emerging risk management
- Risk and capital models
- Strategic Risk Management
- Risk Control

ERM – Solvency II Perspective

S & P Criteria	Solvency II
ERM Culture	Pillar 2
Extreme Events/Emerging Risks	Pillars 1 and 2
Risk and Capital models	Pillar 1
Strategic Risk Management	Pillar 2 (partially)
Risk Control	Pillar 2

1 ERM Background

2 Embedding ERM at Board and Management levels

3 Embedding ERM across the company

4 Managing ERM Development

Risk Appetite Framework (1)

	Description	Example
Risk appetite	The quantity of risk that the company wishes to accept to achieve a desired level of profitability.	A target risk profile consistent with an average long-term return of 9% above risk free (3 year) rates.

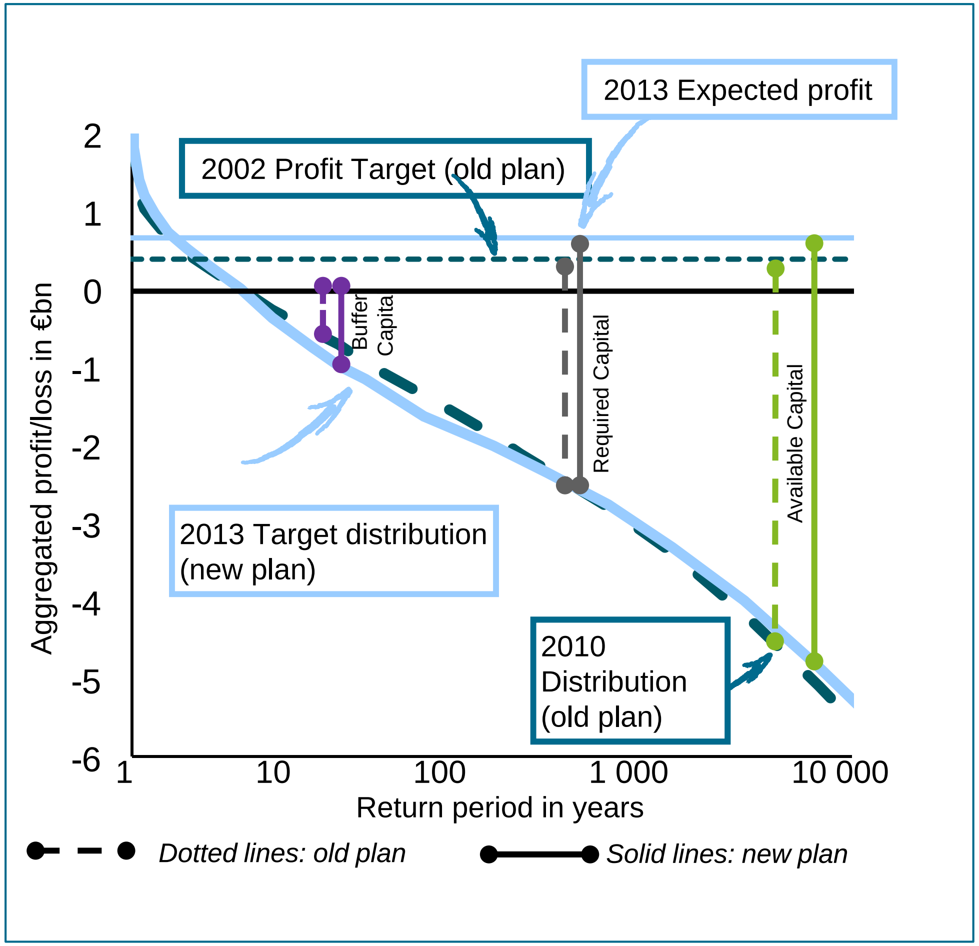
Risk Appetite Framework (2)

	Description	Examples
Risk Preferences	Qualitative descriptions of the risks which the company is willing to accept.	➢ Critical illness risks on high net worth assured. ➢ Premium guarantees limited to 20 years. ➢ No appetite for operational, reputation, legal, regulatory or tax risks. ➢ Low appetite for market risk.

Risk Appetite Framework (3)

	Description	Examples
Risk Tolerances	1) Limits by LOB.	➢ Retained exposure for the **Critical Illness portfolio** is limited such that an **annual loss** (probability 1:20) from the portfolio <5% of the company's available capital.
	2) Limits by extreme scenario.	➢ Retained company exposure to a **major pandemic** (probability 1:200) is limited to an **event total loss** <15% of the company's available capital.
	3) Limits required by the company's stakeholders (e.g. minimum capital adequacy ratios).	

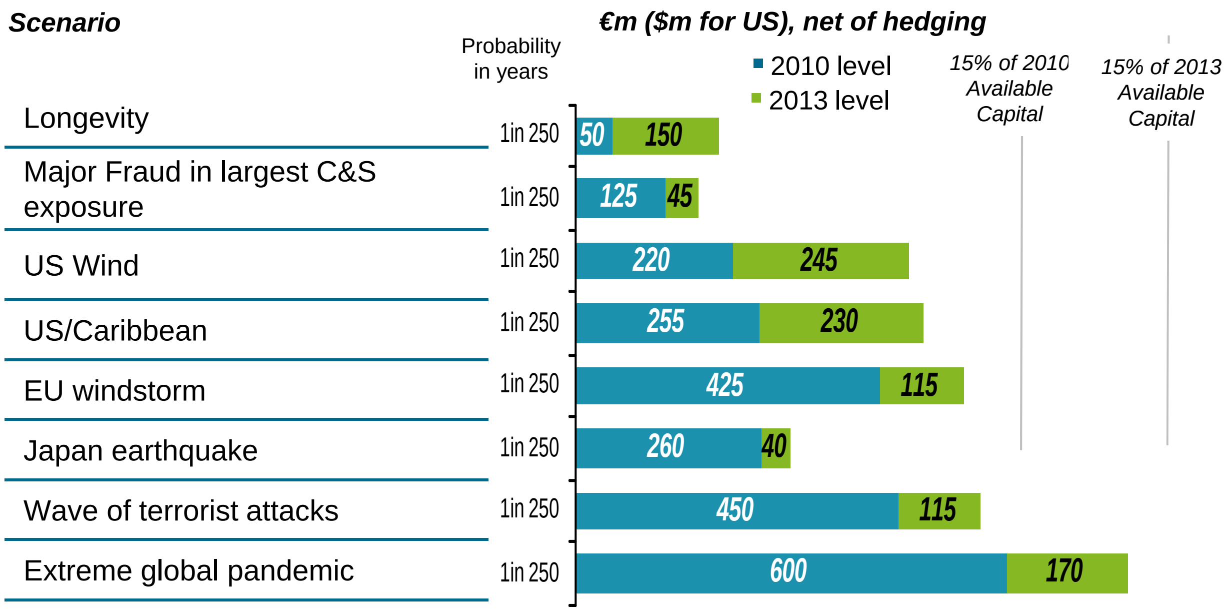
Risk Appetite Framework used in strategy setting



In the new strategic plan the risk appetite increases in the belly of the distribution, not in the tail, in combination with an increase in the expected profitability

Risk Tolerances – *(SCOR Example)*

Estimated Extreme Scenario losses checked against risk tolerances



- ❑ The increase in extreme losses mainly reflects the growth of underlying business volumes
- ❑ No diversification gain is taken into account
- ❑ No Extreme Scenario loss exceeds 15% of available capital

Risk Dashboard – Illustrative template

Risk Category	Risk	Trend
Strategic Risks		
• Capital	●	→
• M&As	●	→
• Strategic Initiatives	●	→
• Strategic Projects	●	→
• Extreme Scenarios	●	→
• Emerging Risks	●	↗
Underwriting		
• Critical Illness	●	↗
• Long-Term Care	●	→
• Disability	●	↗
• Mortality	●	→
Reserving Risk	●	→
Market Risk	●	→
Credit Risk	●	↗
Catastrophe Risk	●	→
Operational Risk	●	↗
Retrocession	●	↗
ALM	●	→
Liquidity Risk	●	→

Comments

- Simple, comprehensive report on key risks to Management and Board.
- Promotes dialogue, challenge and decisions.

- Each risk category is monitored,on a regular basis, by a dedicated risk manager
- Obliges risk owners to explain risks and mitigation methods.

Risk Committees – Illustrative Missions

Board Risk Committee	Management Risk Committee
⇧ Communicate to the Board • recommendations for risk appetite framework • key aspects of risk exposures and risk management. ⇩ Ensure Management have implemented robust ERM mechanisms and processes ⇩ Provide strategic guidance to Management.	⇧ Inform the Board Risk Committee of the main risk exposures ⇩ Ensure risk management mechanisms and processes are in place. ⇩ Ensure regulatory compliance in relation to risk and capital management. ⇩ Facilitate the spreading of risk culture. ⇩ Steer the company’s risk profile in line with its risk appetite framework.

⇧ Upwards communication ⇩ Downwards communication

1	ERM Background
2	Embedding ERM at Board and Management levels
3	Embedding ERM across the company
4	Managing ERM Development

Extreme Scenarios - Purpose

- To assess potential accumulations to an extreme scenario.
- To ensure exposures remain within the risk tolerance limits.
- To suggest response actions.
- To calibrate the Internal Model.
- To facilitate a regular dialogue between the risk experts in the operating entities and the risk managers.

Extreme Scenarios – CI Product Development (Illustration)

- Large unexpected claims and major reserve increases due to:
  - a massive increase in cancer rates due to pollution, stress, radiation fallout etc.
  - product misprice since data provided was not representative of risk.
  - poor definitions.
- Major impact on the company's reputation due to:
  - intervention of Ombudsman following persistently high level of claims rejection.
  - product mis-sold though a new distribution channel with insufficient experience/training.
  - outsourcing (e.g. management of personal data, claims administration, etc.)

Extreme Scenarios - Process

- **Shortlist** of extreme scenarios for company's specific situation; cross-checked regularly.
- Scenarios **approved by a Risk Committee**.
- **Dedicated working groups**, consisting of risk managers, actuaries, business producers, asset managers, and others.
- **Risk Management function steers** all working groups.
- Identification and **description of scenarios** for specified return periods, e.g. 1 in 50 years, 1 in 250 years, etc.
- Estimate of **TOTAL net cost for the company**.

Reporting to the Group CRO

(including recommended responses for decision)

Emerging risks – Description

- Developing risks which include new (unknown) risks and changing risks which are known but evolving.
- High uncertainty: little information available.
- Difficult to:
  - assess frequency and severity.
  - anticipate degree of perception/knowledge of the public and potential future claims.
- More idea /concept than quantifiable.
- Sources of risks : social, political, economic, legal, regulatory, technology, natural environment, etc.

Emerging risks – Illustrations

Social	➢ Gradual changes in diets. ➢ Increase in sedentary lifestyles. ➢ Increasing stress.
Natural environment	➢ Impact of climate change on health (e.g. erosion of ozone layer). ➢ Increasing numbers of bacterial genes (e.g. New-Delhi-Metallo) resistant to all known antibiotics. ➢ Mutations producing lethal viruses.
Economic	➢ Deteriorating economic conditions. ➢ Reduction in health spending.
Medical	➢ Medical progress (risk for Longevity type products). ➢ Improving medical diagnoses.

N.B. Trends are particularly important for long-term guaranteed rates/benefits

Emerging risks – Process

- Identify emerging risks using:
  - the knowledge and experience of **expert staff**.
  - **external sources**, e.g. the World Economic Forum, industry-wide expert groups, law or insurance-specific publications.
- Report them through an **information gathering system**.
- Measure **impacts** on existing business operations or strategic implications.
- Ensure that such risks are **mitigated** (avoided, reduced, transferred or commuted) or deemed to be acceptable.
- Implement **early warning systems.**

Emerging risks – Results template *(SCOR Example)*

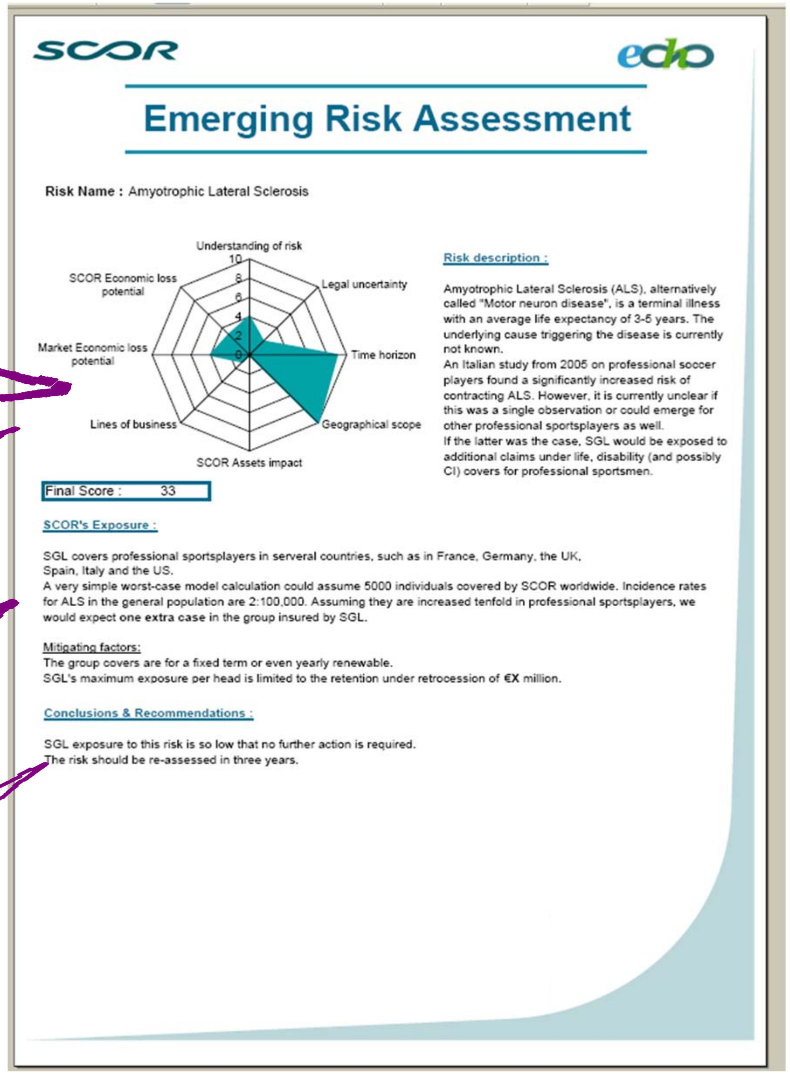
"Spiderweb" allows quick visual assessment of experts' views. Dimensions are:

- Understanding of risk
- Legal uncertainty
- Time horizon
- Geographic scope
- Assets impact
- Lines of business
- Market economic loss potential
- Company economic loss potential

Final overall score to rank emerging risks.

Company-specific exposure discussed.

Conclusions and recommendations, e.g. further analysis, mitigation actions, early warning systems.


SCOR

Emerging Risk Assessment

Risk Name : Amyotrophic Lateral Sclerosis

Final Score : 33

Risk description :

Amyotrophic Lateral Sclerosis (ALS), alternatively called "Motor neuron disease", is a terminal illness with an average life expectancy of 3-5 years. The underlying cause triggering the disease is currently not known.
An Italian study from 2005 on professional soccer players found a significantly increased risk of contracting ALS. However, it is currently unclear if this was a single observation or could emerge for other professional sportsplayers as well.
If the latter was the case, SGL would be exposed to additional claims under life, disability (and possibly CI) covers for professional sportsmen.

SCOR's Exposure :

SGL covers professional sportsplayers in serveral countries, such as in France, Germany, the UK, Spain, Italy and the US.
A very simple worst-case model calculation could assume 5000 individuals covered by SCOR worldwide. Incidence rates for ALS in the general population are 2:100,000. Assuming they are increased tenfold in professional sportsplayers, we would expect one extra case in the group insured by SGL.

Mitigating factors:
The group covers are for a fixed term or even yearly renewable.
SGL's maximum exposure per head is limited to the retention under retrocession of €X million.

Conclusions & Recommendations :

SGL exposure to this risk is so low that no further action is required.
The risk should be re-assessed in three years.

Extreme Scenarios and Emerging risks - Challenges

- Organisation and motivation of multidisciplinary working groups.
- Limited availability of staff and experts.
- Imagination (i.e. do not only use experience of past events).
- Reluctance to take “longer term impacts” seriously.

1	ERM Background
2	Embedding ERM at Board and Management levels
3	Embedding ERM across the company
4	Managing ERM Development

ERM Development influenced by several factors

- Past crises for the company/industry.
- Competition.
- Past Mergers & Acquisitions.
- Rating Agency pressure.
- Regulatory changes.
- Board and Management.
- Dedicated ERM department.

Monitoring ERM maturity – ERM Framework *(SCOR Example)*

	Strategic	Operations	Reporting	Compliance
Internal Environment	Risk Culture Embedded Governance	Organisation Structure	Human Capital Employee Motivation	ERM policies IT system
Objective Setting	Strategic Goals Risk Appetite Framework IT Strategy Capital allocation	Operational plan & guidelines Operational Performance Management	Reporting Goals	Compliance Plan
Event Identification	Economic & Market Intelligence	Risk Dashboard Process Risk Landscape Risk Enquiry Emerging Risks Credit Risk Reserving		Compliance Landscape
Risk Assessment	ALM Capital Model Extreme Scenarios			
Risk Response	Retrocession Management Response			Compliance Response
Control Activities	Business Process Controls IT General Controls			
Information & Communication	Communication of Strategy	Internal Communication External Communication		Communication of Compliance
Monitoring	Internal Audit charter / plan Continuous Improvement of ERM	ICS Assurance		Compliance Dashboard

Risk Management functions

- **Independent** function **reporting to CRO** which **does not own risks** but facilitates the management and reporting of risks.
- **Defines the ERM Framework** and risk management standards.
- Provides regular **internal reports** on the company's risk profile.
- Manages **Extreme Scenarios and Emerging Risks processes**.
- **Controls** M&As, new product developments, large block deals.
- **Monitors the maturity** of the ERM Framework.
- **Develops** the ERM framework (e.g. new risk management processes and reports).
- Internal and External **Communication** of ERM.

Some ERM Development Challenges

Obstacles

1) Negative attitude towards risk managers (portrayed as business inhibitors).
2) Fear of loss of power.
3) Concepts (e.g. probability, models) difficult to grasp.
4) Difficult to appreciate the value added of reducing the probability of a loss.
5) Seen as "just another fad".

Solutions

1) Risk managers should support business development.
2) Emphasis common interests.
3) Explain in language familiar to staff.
4) Use real examples. Create short-term wins.
5) Emphasise common sense.

Conclusion

ERM is:

- ➔ Company specific.
- ➔ Dynamic and evolving in the light of new developments.
- ➔ Extremely important for rating agencies and Solvency II.

Critical success factors:

- ➔ Sufficient staff with relevant skills and experience:
  - ✓ Wide knowledge of company's risks.
  - ✓ Excellent communication and organisational skills.
  - ✓ Open attitude to new concepts and ideas.

- ➔ Organisation:
  - ✓ Clear roles, responsibilities and reporting lines.
  - ✓ High level RM committees.

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.