



The Actuarial Profession
making financial sense of the future

Trends in insurance risk management
Taking risk to the next level

Steve Wilson
Zurich Insurance Company Ltd

© 2010 The Actuarial Profession • www.actuaries.org.uk

Content

- Scope
- Trends
- Reactions
- Adding value

Current scope of the CRO

- CRO provides a 360 degree view of risk, i.e. covers is all risk types
 - Insurance
 - Investment / ALM
 - Strategic
 - Operational
- Ownership of risk types usually distributed over the enterprise
 - insurance risk with underwriters & actuaries
 - risk capital and tail risk with finance / quants / actuarial
 - ALM with investment management
 - operational risk – distributed, often not well defined

© 2010 The Actuarial Profession • www.actuaries.org.uk

2

Trends

- Existing risks require better quantification
- More advanced mathematics
- Interconnectivity now a major factor
- Operational risk more material

Increasingly
analytical

- New and emerging risks more relevant
 - Cyber
 - Reputation
 - Sustainability / corporate responsibility
 - Climate related

Broader scope

© 2010 The Actuarial Profession • www.actuaries.org.uk

3

Trends

- Broadened and strengthened assurance role
 - Corporate governance
 - Regulation
 - 3 line of defence model

Increasingly
independent

- Management want insight and value
 - Leverage skills
 - Raise bar through challenge
 - Problem solving

Deeper interaction

© 2010 The Actuarial Profession • www.actuaries.org.uk

4

Reactions - trends create conflicting outcomes

Increasing analytics

- CRO is a quant or actuary

Broader scope

- CRO is a generalist

Independent assurance

- CRO is independent from management

Deeper interaction

- CRO is integral to management

© 2010 The Actuarial Profession • www.actuaries.org.uk

5

Some practical suggestions to add value

Methodology

- Use classic RM techniques and force quantification even if very subjective
- Strive for balance between analytics and pragmatism
- Connectivity – developing an understanding beyond copula's?

Approach

- Be a facilitator of discussion – the magic is outside of the crystal ball
- Be a driver and take strong positions – make management think (and act!)

Capabilities

- Ensure a range of skills in the team: actuaries, op risk experts, economists

© 2010 The Actuarial Profession • www.actuaries.org.uk

6

Use classic RM techniques and force quantification even if very subjective

- To assign a value to operational risk, a combination of qualitative and quantitative risk management methods can be used.
- Commonly available indicators are used to estimate monetary consequences
- The estimations give a range of consequences that can be used to map potential scenarios on a grid

USD million	Impact		
Scenario assumption	25%	50%	75%
Top-line	(X)	(Y)	(Z)
Bottom line	(p)	(q)	(r)
Capitalized value	(A)	(B)	(C)

At least annually		1. Weakening of customer relationships	
1-3 years		2. Damage to reputation	
3-5 years	3. Employee engagement		
5-10 years			
Capital value of earnings			

7

Balance between analytics and pragmatism

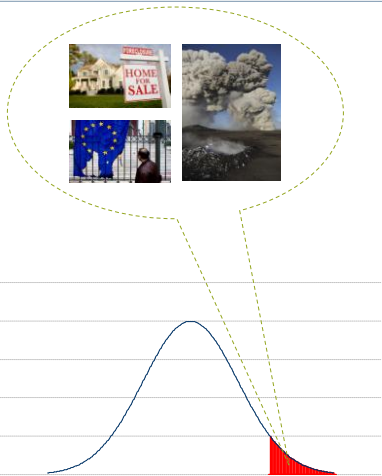
- Emerging risks (e.g. casualty) with little historical data are difficult to quantify with traditional actuarial methods
- Order of magnitude quantification helps to identify focus areas for in depth analytics
- Threat-grids compiled by subject matter experts are an efficient method for an initial assessment

Casualty Catastrophe focus areas	Aging Workforce	Alternative Energy	Asbestos Replacement Products	...
Agriculture Production – Crops	1	3	1	
Agriculture Production - Livestock	1	2	1	
Metal Mining	1	1	1	
Cole/Lignite Mining	1	2	1	
Oil and Gas Extraction	1	4	1	
Printing and Publishing	1	1	1	
Petroleum & Coal Products	1	1	2	
Primary Metal Industries	2	1	1	
...				

8

Connectivity – can reverse stress testing show the path beyond correlations?

- Modeling correlations between tail events is not an effective approach for assessing inter-connections
- Recent events such as Icelandic volcano, US sub-prime and Euro crisis have drawn greater attention to this problems
- As a result, we may be “wrong footed” in our efforts to mitigate broader risk types



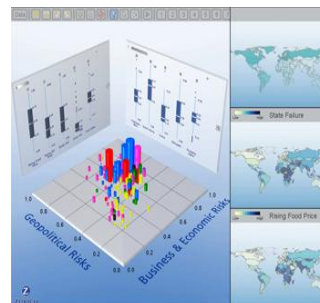
9

Be a facilitator of discussion

Be a driver of discussion

Facilitate

- For many risk assessments, conventional risk profiling can be used to great effect
- For more complex assessments, more advanced tools such as the Zurich Risk Room can help visualize risk interconnectivities



Drive

- Bringing strong views to the table can stimulate much better discussion
- CROs should leverage external sources and should have a comprehensive understanding of global risks