




The Actuarial Profession

making financial sense of the future

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Actuaries and ERM

Society of Actuaries, Dublin

21 June 2010

Introduction

-
- What is ERM?
 - ST9
 - CERA
 - Getting involved
 - Actuaries in ERM

What is ERM?

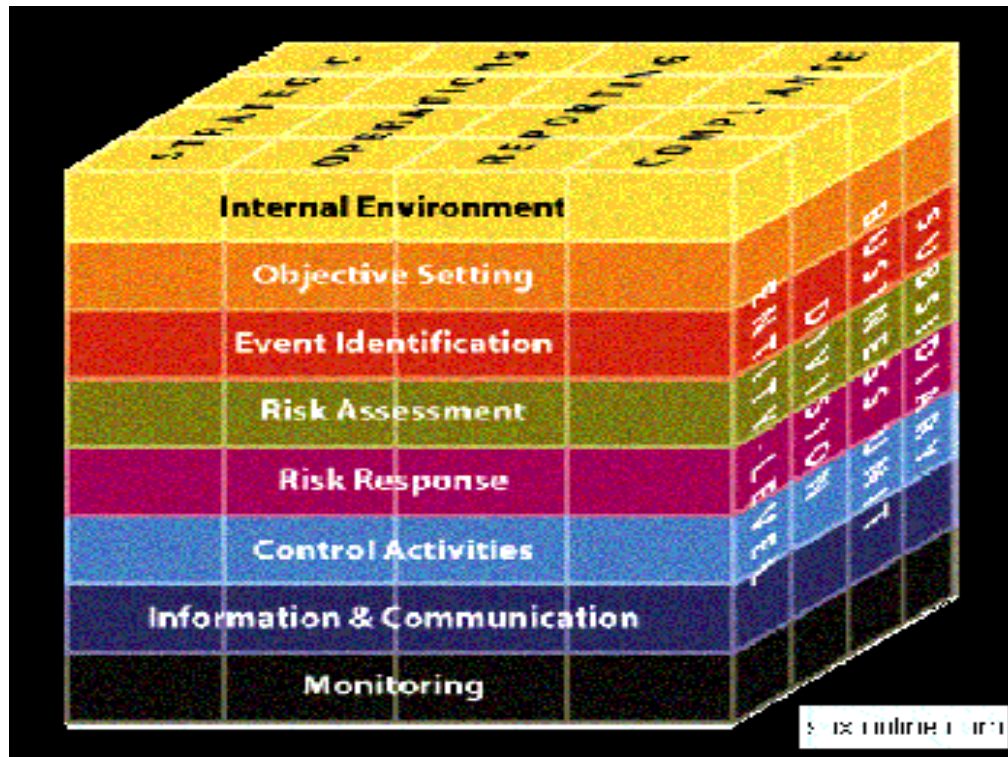
Many definitions of Enterprise Risk Management!

“Enterprise risk management is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.”

The COSO cube

Objectives

Components



Organisation

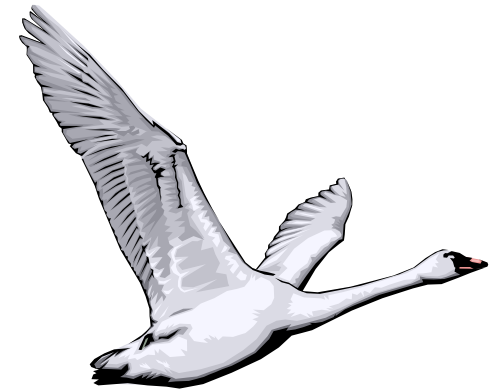
The essence of ERM

- Holistic:
 - All risks
 - Integrated
- Full process / risk management cycle
- Upside as well as downside management
- *Any* type of organisation

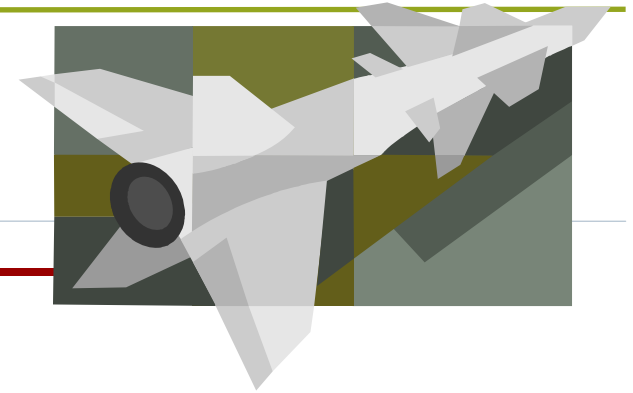


“Black swan” events

- What’s the probability that a randomly picked swan is black?
 - 17th century Europe: “definitely and absolutely ZERO”
 - 18th century exploration of Western Australia:
- Perceived impossibilities CAN happen
 - Internet, 9/11,
- High impact, low probability events
- Avoid “being the turkey”



“Known unknowns”



- US Defense Secretary Donald Rumsfeld Feb 2002:
- “There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we now know we don’t know. But there are also unknown unknowns. These are things we do not know we don’t know. ”
- Confucius: "To know that we know what we know, and that we do not know what we do not know, that is true knowledge."

ST9: ERM Specialist Technical subject

- Core Reading available 1 June 2009
 - Written Core Reading
 - Three textbooks: Lam, Chapman and McNeil et al
 - Three papers / publications (downloadable from website)
 - ActEd courses available since Sept 2009
- First examination April 2010



ST9: ERM Specialist Technical subject

- Specimen exam paper and solutions available on the website
- Any members of the Institute or Faculty of Actuaries can sit the exam
 - Can count as CPD “Study” for qualifieds
- No “SA9”



ST9: A health warning!



- Not the *definitive* recipe for ERM
- Risk cannot simply be reduced without some cost
- ERM needs to be “embraced” not “implemented”
- ERM must complement the commercial side of the business, not burden in
- “Best practice” is subjective and will change over time
- Other people may have different views to your own – and they may be correct!
- Appreciate the bigger picture

ST9 Syllabus: ERM framework

- Best practice ERM framework and structure within an organisation
 - The importance of governance, culture and behavioural aspects
 - Centralised risk function and role of CRO
 - Link to strategic aims
- Risk frameworks in regulatory environments on a global basis
 - Including (but not restricted to) Basel II, Solvency II and Sarbanes-Oxley

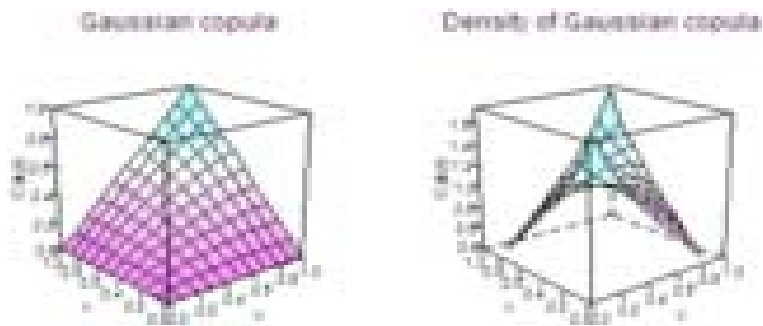
ST9 Syllabus: ERM framework contd

- The role of regulators and credit agencies in the evaluation of risk management functions
- The relevance of ERM to all other stakeholders, including agency risk
- Determination of risk appetite
 - Risk capacity, risk profile, risk tolerance, risk limits
- The overall risk management process / cycle
- Different definitions and concepts of risk
- Risk taxonomy
- Contagion



ST9 Syllabus: Quantitative methods

- Risk measures and their properties
- Analysis of time series, including model selection
 - Financial and insurance data
 - Qualitative as well as quantitative techniques
- Methods of risk aggregation, including:
 - Different correlation approaches
 - Copulas
- Tail distributions, tail dependence and extreme value theory



ST9 Syllabus: ERM modelling

- Risk identification
- Quantifiable v. non-quantifiable risks
- Best practice use of models in the overall ERM decision-making process
 - Model risk and parameter risk
- Assessment of market, credit and operational risks
- Development of an Economic Capital model
- Techniques for allocation of capital across an organisation

ST9 Syllabus:

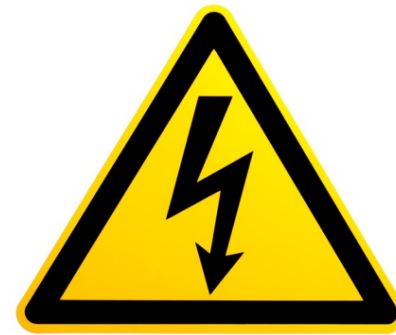
Risk management tools & techniques



- Risk optimisation
- Responses to risk
- Recommendation of different risk mitigation approaches
 - With transfer and without transfer
 - Balancing benefits v adverse impacts / constraints
- Tools and techniques for managing market, credit and operational risks
- Residual risks

ST9 Syllabus: Case studies

- Lessons learned?
 - Enron
 - Barings Bank
 - Equitable Life
 - Maxwell
 - Recent “credit crunch”
 - Many others...
- Examples of good ERM practice too!



CERA

- International working parties
- Minimum learning objectives requirement
 - Includes the IAA basic educational syllabus
- Accreditation process
 - Quality and scope of syllabus and exams
 - Quality of examination process and controls
 - Own accreditation awarding powers
- “CERA” designation = Chartered Enterprise Risk Actuary
 - International recognition
 - Associate + ST9?
 - University route?
 - Qualifieds?



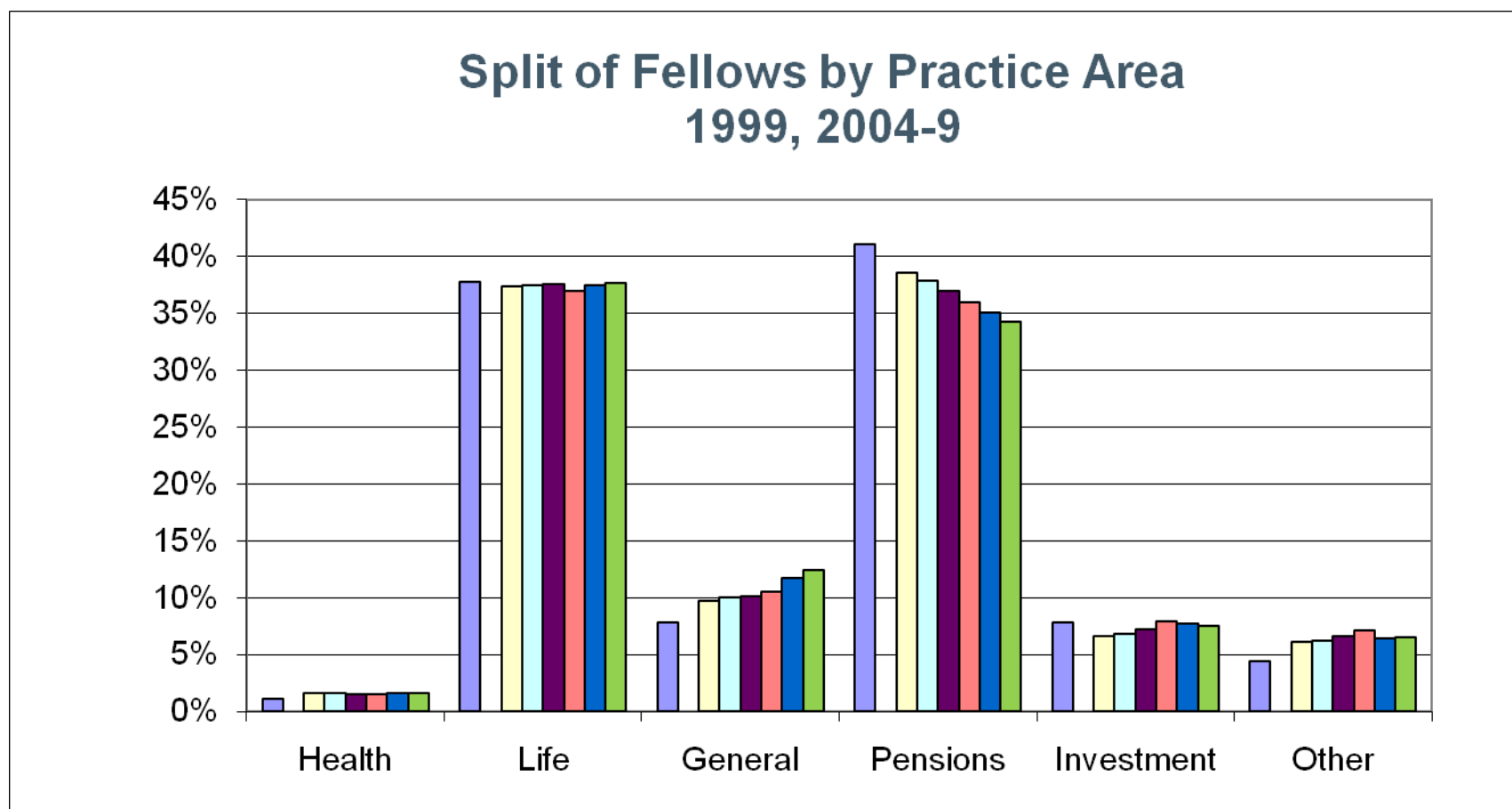
As a part qualified actuary, you might study ST9 because....

- You prefer to continue a more generalist rather than specialised technical route to qualification
- You work in a risk management function or are keen on doing so in future, possibly outside the traditional actuarial fields
- You want to become a risk management specialist Fellow
 - e.g. alongside ST6 and SA5
- You liked the risk management parts of CA1

Or you might study ST9 because....

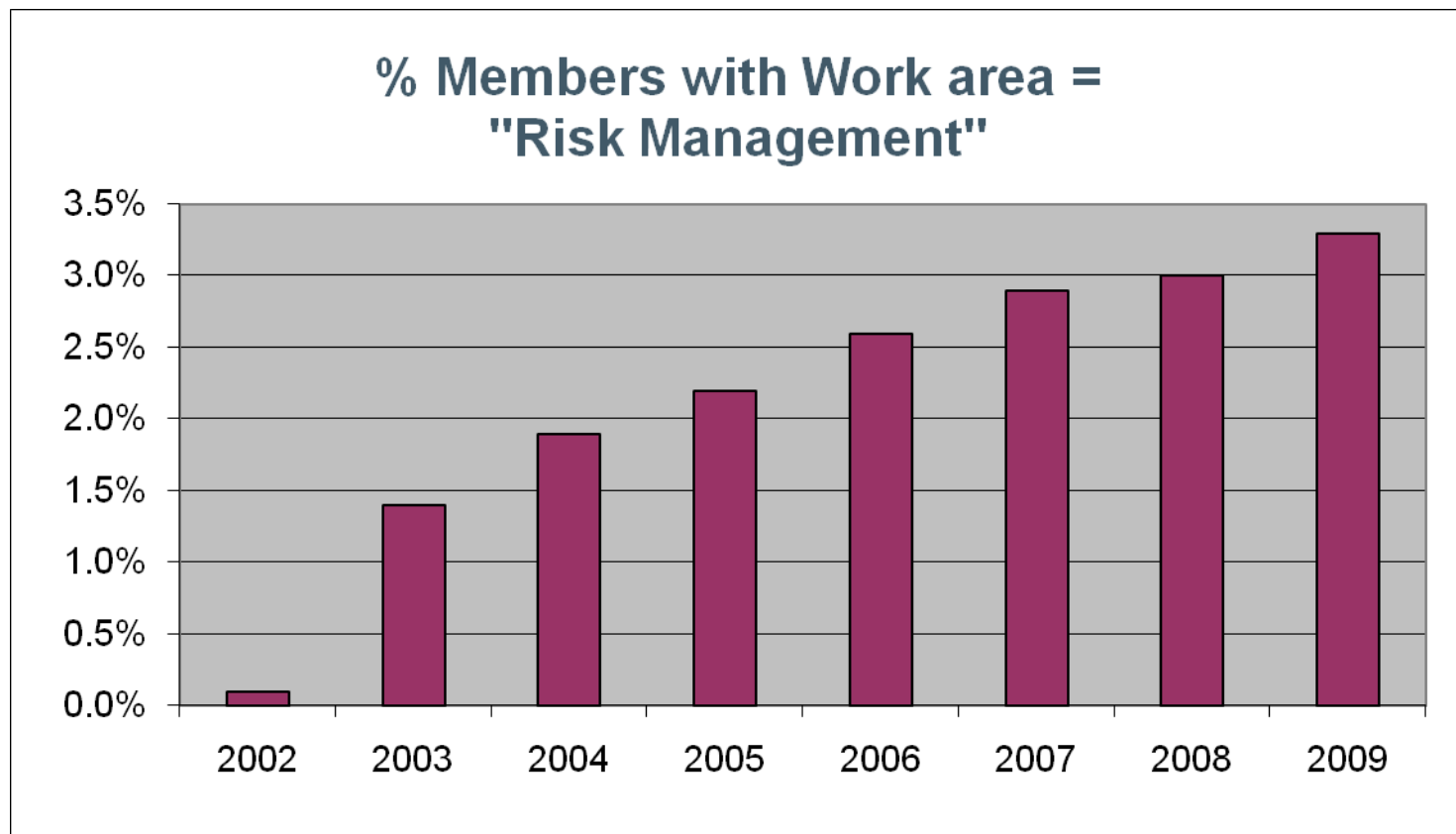
- It fits neatly with any of the other ST subjects: a good “second choice”
- It is not practice specific, so can be tackled by anyone irrespective of their area of work experience
- It is a mix of both qualitative and quantitative learning
- You could end up with a globally recognised additional qualification (CERA) – *to be confirmed!*
- ERM is a buzz word !

Where do actuaries work?



Source: UK Actuarial Profession membership data

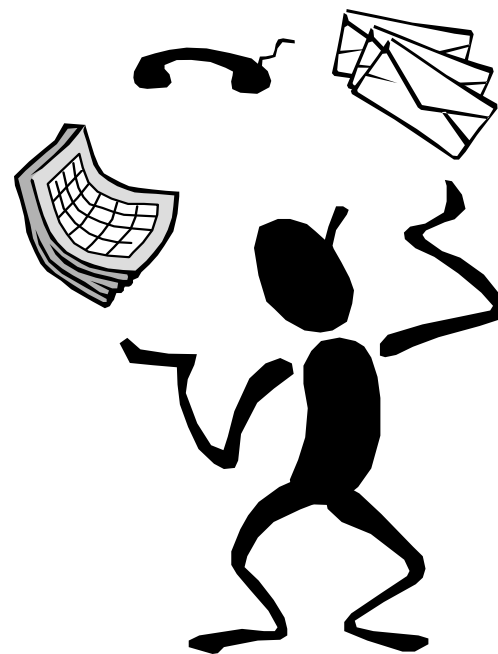
“Risk management” actuaries



Source: UK Actuarial Profession membership data

What do actuaries bring to ERM?

- Experience
 - Financial risks
 - Increasingly, non-financial risks
 - Regulatory environments
- Skills
 - Quantitative and analytical
 - Modelling
 - Application of judgement
 - Communication
- Professionalism



ERM Practice area

The screenshot shows a Windows Internet Explorer browser window displaying the website http://www.actuaries.org.uk/practice_areas/erm. The browser's address bar shows the URL, and the search bar contains the word "Google". The website's navigation menu includes links for [The Profession](#), [Media centre](#), [Jobs](#), [Events](#), [Publications shop](#), [Exams](#), and [CPD](#). The main navigation bar features [Careers](#), [Students](#), [Members](#), [Practice areas](#), [Regulation](#), and [Knowledge services](#).

The page title is "Enterprise risk management" under the "Actuaries | Practice areas | Enterprise risk management" breadcrumb. A sidebar on the left contains a "Home" link and a list of practice areas: [Practice areas](#), [Enterprise risk management](#), [About ERM](#), [People](#), [CPD technical skills](#), [Topics](#), and [Newsletters](#).

The main content area features a photograph of three people (two men and one woman) and the following text:

The Actuarial Profession is founded upon the challenge of quantifying and managing long term risk, particularly in the Financial Services sector. In recent years, many other groups have been carrying out significant amounts of work and research into risk, its analysis and management. Actuaries need to keep abreast with current thinking and to have easy access to the information currently available.

These pages aim to provide one source of that information, and are aimed at:

- Actuaries thinking of moving to risk management from another area
- Non-actuaries wanting to know how an actuary could help them with risk management
- Actuaries already working in risk management

The Enterprise Risk Management Practice Area in conjunction with the Risk Management Interest Group aims to provide effective and focussed communication to members with an interest in ERM and Risk Management. To this end we intend to send out a regular monthly email bulletin to members who signed up on the

On the right side of the page, there is a "Site search" box with a "go" button and an "Advanced Search" link. Below this, a section titled "You may also be interested in:" lists several items:

- In this site**
- [Forthcoming ERM events](#)
- [Risk and investment conference 2010 - visit the new microsite or download the brochure](#)
- [Past Finance and investment conferences and events](#)
- [ERM Guide](#)
- [ST9 - new ERM Specialist](#)
- [Technical subject](#)
- [Knowledge portal](#)
- [ERM CPD material](#)
- [News alerts](#)
- [Global Financial Crisis](#)

The browser's status bar at the bottom shows "Done" and "Internet" with a 100% zoom level.

ERM resources

- Website:
 - News stories
 - Details of events
 - CPD & knowledge resource library
 - Papers/ publications to download
 - “IAA Practice Note on ERM”
 - Links to related sites
 - Discussion boards
 - Biogs
 - Member Interest Groups
- Regular e-news



Getting involved in ERM

- ST9
 - Self study, ActEd, Universities?
- Events
 - Tailored ERM CPD events
 - Joint events with other Practice areas
 - Networking evenings
- Member Interest Groups
- Papers
- Committees



ERM Committees

- ERM Practice Executive Committee
 - Purpose = “To support members and promote high standards of actuarial practice in ERM”
- Sub-Committees:
 - Education, CPD & Career Support
 - Brand & External Relationships
 - Research and Thought Leadership

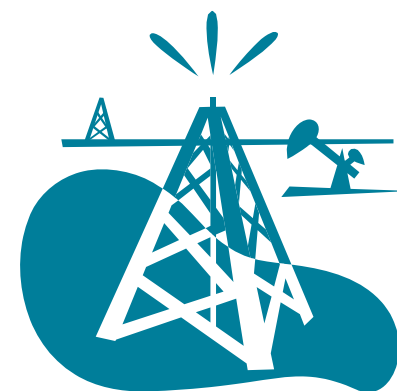


ERM actuaries

- Chief Risk Officers
- Operational / Group risk managers
- Rating agencies
 - Assessing ERM capabilities of international financial companies
 - Development of ERM reviews for non-financial companies
- Consultants developing ERM capabilities in companies
 - Including helping companies integrate their pension scheme risks into their overall corporate risk management programs

ERM actuaries contd

- Risk modelling & research
- International risk and capital assessment technique development
- ART
- Project management and appraisal
 - Energy companies
 - Engineering
 - Aviation
 - Banking / corporate finance



Actuaries and ERM

Any Questions?

