

BUILDING A GLOBAL ACTUARIAL PROFESSION

IAA Fund 4th International Meeting
In Asia and the Pacific

The multiple actuarial practice areas



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International Actuarial Association
Nusa Dua, Bali, September 2005



Early history

- At the last IAA meeting in Rome, the President of the Istituto distributed what is likely the oldest actuarial document stating life expectancies at different ages
- The Roman author remains unknown but in later years we can associate DeMoivre, Pascal, Huygens and others with actuarial concepts of annuities, probabilities, insurance and risks
- Edmond Halley is better known for the comet that bears his name but he created in 1693 the first table for calculating the present value of annuities on a sound actuarial basis
- The first life insurance company to use actuarially calculated premium rates was the Equitable of London founded in 1762 and the mathematician was James Dodson



From a garden to many gardens

- The traditional scope of the profession was pension and insurance and many actuaries covered all areas of practice:

- an actuary was an actuary

- Gradually the growth of the core body of actuarial knowledge, the fiscal and regulatory environment, the sophistication of the markets forced individuals to specialise into

- Life actuary

- Non-life actuary

- Pension actuary

but still many cross-overs between areas of practice



Defining « actuarial »

- The UK Institute, our most senior association, writes
 - Actuaries apply financial and statistical theories to solve real business problems. These business problems typically involve analysing future financial events, especially when the amount of a future payment, or the timing of when it is paid, is uncertain. A lot of actuaries' work might be thought of as 'risk management', assessing how likely an event may be and the costs associated with it.
- The Canadian Vision statement reads
 - « for actuaries to be recognized as the leading professionals in the financial modeling and management of risks and contingent events »
- Our Australian neighbors state that
 - wherever there is uncertainty of future financial outcomes, actuaries are sought after for their valued advice and authoritative comment.



« The Actuary at Risk »

- Most definitions or vision statements used now by our member associations refer to risk as a central and common thread
- "Risk" is the possibility that an undesirable event will occur
- The theme of the 13th EAAC that was held here this week is an interesting play on its double meaning:
 - *The risks are many and varied and relate not only to the work that we do, but also the risk to our reputation – as individuals and as a profession*



The growth in uncertainty

- **The future is full of uncertainty and the uncertainty of the uncertainty has increased: there is more riskyness!**
- **Our world has become more complex and more sophisticated; it is wonderfully productive but it is also manufacturing new and greater uncertainties making us vulnerable to a growing variety of risks.**
- **To design and manage programs that control risk takes a combination of strong analytical skills, business knowledge and understanding of human behavior**
- **These new challenges have created new area of practices in the management of risks and financial engineering**



The demand for Managers of uncertainty

- **The impact of undesirable events can be both emotional and financial.**
 - **Reducing the likelihood of these events helps relieve emotional pain.**
 - **Some events, such as death, cannot be totally avoided. Reducing their financial impact is very important.**
- **Actuaries are experts in:**
 - **evaluating the likelihood of future uncertain events,**
 - **designing creative ways to reduce the likelihood of undesirable events,**
 - **decreasing the impact of undesirable events that do occur.**



From gardens to wider fields

- Around the world « homo actuaris » has evolved to occupy a variety of niches and areas of practice
- Individual actuaries are now found not only in insurance companies or in pension but in banking, consulting, teaching, research, regulation & supervision, management, human resources
- We have developed new methodologies like the
 - Actuarial control cycle that offers a dynamic analysis of a reality that is not frozen each December 31st
 - Stochastic projections that deliver us from the corset of the mean and allow us to present with more transparency the probability of results over a range of estimates
 - The tools Financial economics help actuaries to extend and deepen their work in the financial area

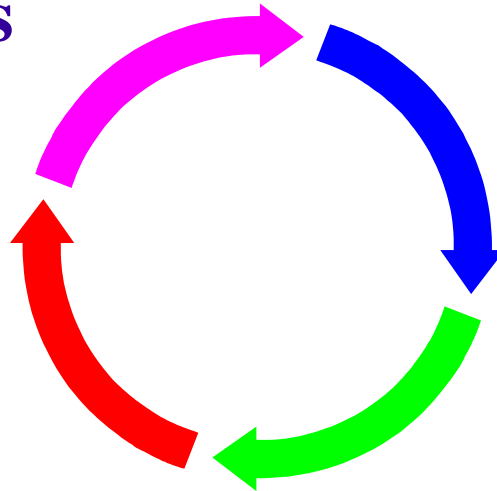


The Actuarial Control Cycle

Financial Projections

Risk analysis

**Adjust
Operation
parameters**



**Revise
design and
model
parameters**

**Monitor
Performance
Collect data**

Financial Economics

- **Mathematical modeling of financial markets**
 - Stochastic processes
 - Evaluation of probabilities, cost of guarantees and options
 - Black Scholes (Merton)
- **Asset pricing**
 - CAPM (Capital Asset Pricing Model)
 - Efficient portfolios
- **Corporate finance**
 - Pension fund investment
 - Accounting



Expansion in the public area

- Many factors are driving changes
- Aging and demographic issues have widened the practice in the areas of retirement income and health
- Repeated economic crisis have made institutions more nervous about solvency and sustainability, looking at risk based approach for enhancing the financial stability net
- The electronic revolution has interconnected the financial markets globally and fears of domino effects motivated efforts to develop financial stability nets
- The actuarial profession is entering the world and contributing to the quantification of policy options thus putting actuarial expertise to the service of the public interest



Beyond the basic practices

So we now have many flavors of actuaries

- Life actuary
- Casualty actuary
- Marketing actuary
- Social security actuary
- Reinsurance atuary
- Union actuary
- Company actuary
- PI/WC actuary
- Dividends actuary
- Risk actuary
- Modelling actuary
- Trust actuary
- Accounting actuary
- Pricing actuary
- Investment actiuary
- Health actuary
- Securities actuary
- DFA actuary
- International actuary
- ALM actuary
- Marine actuary
- Actuarial evidence actuary
- Regulatory actuary

Some designations correspond to a specific function

Enrolled actuary

Appointed actuary

Valuation actuary

Gouvernement actaury



Actuaries in Business areas

- **The UK web site offers an interesting set of links**
 - **The actuary and financial consumers**
 - **The actuary in education**
 - **The actuary in general insurance**
 - **The actuary in health and care**
 - **The actuary and institutional investment**
 - **The actuary in investment**
 - **The actuary in life insurance**
 - **The actuary in pensions**
 - **The actuary and retirement issues**



SOA 18 Special Interest Sections

Actuary of the Future

Information about new applications for actuarial science, new skills and new ways of thinking.

Education & Research

Read about learning opportunities and the latest research projects.

Futurism

Learn about the field of futurism through meetings, seminars, research studies and more.

Health

Examine the many facets of the field of health insurance and health benefit plans.

International

Explore the areas of international insurance, pensions, social security systems and international areas of practice.

Investment

Tap into information about the investment of insurance company and pension fund assets.



The next 6 Sections

Life Insurance Company Financial Reporting

Learn about the field of life insurance company financial reporting through seminars, research studies and the generation and dissemination of literature.

Long Term Care Insurance

Discover the many issues related to long-term care insurance.

Management & Personal Development Section

Information on the implementation and promotion of management and business skills development for members.

Nontraditional Marketing

Methods of marketing financial products to potential customers other than through conventional channels, and specialty products particularly well suited to alternative methods of distribution, are explored.

Pension

The field of pension planning is explored in depth.

Product Development

Information on new product innovations and their development.



The last 6 Sections

Reinsurance

Reinsurance topics of current interest are examined in detail.

Risk Management Section

Learn more about leading risk management techniques.

Smaller Consulting Firm

Explore the educational, research, networking and other special needs that arise in smaller consulting firms.

Smaller Insurance Company

Study the unique challenges that face actuaries employed by smaller life insurance companies.

Taxation

Advance the actuarial profession by assisting members of the section with the educational, research, networking and other specialized needs that arise in matters related to taxation.

Technology Section

Find the latest developments in all aspects of computer



Acrobatics actuary

- **Sorry, my list of actuaries was incomplete; I had missed the « Circus actuary »**
- **Most of you heard about « Cirque du Soleil »**
- **Head-Quartered in Montréal, they have 5 touring shows and 3 residents shows**
- **They employ 2 500 people from 33 countries and perform in America, Europe and Asia-Pacific**
- **The mixture of international laws, government programs and the risks exposure of acrobats generate interesting challenges**
- **Enough to keep an ASA busy as HR development Advisor**



Harnessing creativity

- We have a diverse collection of guidelines, niches, standards of practice, special interest sections, specialist certificates, statutory functions, tracks of professional development
- Our members are displaying great creativity but the actuarial profession has a collective responsibility both to its members and to those that rely on actuaries for advice to ensure a high quality of professional services
- The challenge is achieving the right balance between all of these potentially competing and conflicting interests and the reasonable expectations of all stakeholders
- We can seek guidance in some basic principles



What makes us a profession

- ***A Profession is an occupation in which an individual***
 - ***uses an intellectual skill***
 - ***based on an **established body of knowledge and practice*****
 - ***to provide a specialized service in a **defined area,*****
 - ***exercising independent judgement***
 - ***in accordance with a code of ethics and in the public interest***



Professionals in wider fields

- An actuary must at all times be mindful of the obligation imposed by the *Code of Professional Conduct* not to perform professional services unless qualified to do so
- Thus for each defined area of practice there must be an established body of knowledge and practice
- An actuary must be able to establish and maintain his qualifications which mean basic education, experience and continuing professional development
- It must be possible to validate compliance with professional requirements, conduct peer review and implement the code of ethics
- Thus the profession must have defined these requirements so the actuary can demonstrate his/her qualification and must provide the necessary guidance and support



Criteria for defining an area

- **The definition must encompass an area of expertise that is broad enough to cover a substantial portion of actuarial practice.**
- **The area should have been in existence long enough to have given rise to an established body of knowledge so that actuaries could be qualified to work in the area through past experience.**
- **The area should be broad enough so that a significant number of members will qualify and not be so limiting as to remove opportunities for job and expertise movement by almost all other actuaries**



Current practice areas

- **With variations between countries, we can list**
 - **Life actuary**
 - **Non-life actuary**
 - **Health & Care actuary**
 - **Retirement/Pension actuary**
 - **Investment/finance actuary**
 - **Consulting actuary**



How many is enough?

- **Practical and operational considerations limit the number of practice areas since the existence of a practice area requires that the actuarial profession**
 - Set qualifications and entry requirements
 - Ensure the availability of basic education and examination
 - Up-grade constantly the basic core of knowledge
 - Determine practice standards
 - Provide guidance
 - Provide CPD facilities
 - Ensure peer review
 - Implement discipline procedures
- **Practice areas may be complemented by specialisation certificates or other means**
- **New demand for special expertise will arise and the profession will need to expand its intellectual capital in order to add or upgrade practice areas**



The role of a professional association

- Under the principle of subsidiarity each actuarial association has first responsibility for defining an area of practice and providing the necessary support
 - This includes educational material, actuarial libraries, research, seminars, workshops, colloquia
- This role is in harmony with the fact that in many cases the requirements are influenced by local conditions: legal framework, taxation, industry structure, cultural traditions However it imposes a high burden on small or emerging associations. A review of web sites shows variations in support offered by local associations



Actuarial Standards of Practice

- **The US Actuarial Standards Board has adopted 42 different actuarial standards of practice (ASOPs)**
- **The UK Institute offers 19 CPD Certificates in 3 categories:**
 - **Core Technical, Specialist technical, Specialist applications**
- **The Canadian Institute has a Consolidated General Standards of Practices plus 17 more specific Standards**



Complementary support from IAA

- **Access to our common intellectual capital through a virtual Global Actuarial Library completed by an Automated translation facility**
- **Scientific Sections that cover the main areas of practice**
- **Committees that pool the intellectual contributions of volunteers from around the world to provide additional support**



The IAA Sections

- Open to all individual IAA members plus other eligible party
- A Life section is in formation; should be created in June 2006
- The Sections are the research and scientific arm of the IAA; contribute to renew intellectual capital and provide continuing education to members
- A special section, *Actuary without frontiers*, was formed in 2003 to link situations in need of actuarial skills with financial resources and with actuarial volunteers



ASTIN

- **Actuarial Studies in Non-Life Insurance**
- **formed in 1957**
- **To promote actuarial research particularly in non-life insurance**
- **2000+ members in 50 countries**
- **Activities include ASTIN Bulletin, annual Colloquia and emerging countries program**



AFIR

- **Actuarial Approach for Financial Risks**
- **Formed in 1986**
- **About 2000 members**
- **To promote actuarial research in financial risks and problems**
- **Principal activity is annual Colloquia**



IACA

- **International Association of Consulting Actuaries formed in 1968 and became a section in 1999**
- **To promote and facilitate the sharing of ideas amongst international consulting actuaries**
- **Principal activity is a biennial conference**



IAAHS

- **IAA Health Section formed in 2003**
- **To promote and facilitate an international sharing of views, advice, research and practical information among actuaries involved with public and private health issues**
- **Principal activities include seminars, Colloquia on-line exchanges, other meetings and publishing works**



PBSS

Pensions, Benefits, Social Security Section formed in 2003

- **To serve actuaries around the world who have personal, professional, educational or research interests in social protection and the commercial, social and public policy issues concerning the provision of pensions and other benefits**
- **Principal activities include seminars, Colloquia on-line exchanges, other meetings and publishing works**



IAA Insurance Accounting Committee

- coordinate the IAA's response to documents of the IASB and the International Federation of Accountants (IFAC) related to insurance financial reporting and auditing;
- address professional issues of international relevance for actuaries, accountants and auditors, including development and maintenance of IAA actuarial standards of practice relating to insurance financial reporting and auditing;
- liaise with IASB and IFAC, and to assist the IAA Insurance Regulation Committee in its liaison role with the IAIS.

Actuarial Standards (*Subcommittee reporting to the Insurance Accounting Committee*):

- develop recommendations regarding international actuarial standards of practice for preparing or reviewing values or information relative to IASB financial reporting standards for insurance contracts and for certain financial instruments, provisions, contingent liabilities and contingent assets.



IAA Insurance Regulation Committee

- **Liaise with the regulators and other interested bodies at the international level on issues relating to the regulation and supervision of insurance companies and to assist in the development of international guidelines or standards.**
 - **Reinsurance Subcommittee**
 - address and coordinate actuarial issues of particular relevance to, but not limited to, reinsurance as well as the relevance of reinsurance to direct insurance.
 - **Solvency Subcommittee**
 - continue the work of the IAA in the area of solvency and risk assessment of insurers
 - be a point of contact for IAIS (International Association of Insurance Supervisors) efforts in solvency and risk assessment
 - coordinate related projects with various actuarial associations interested in this area.



IAA Pension Committee

- **Pensions and Employee Benefits**

- coordinate the IAA's response to the IASB Employee Benefits Accounting standard and to deal with matters arising out of the promulgation of that standard; to address any professional issues of international relevance for actuaries working in the field of occupational benefits
- establish links into other worldwide pension organizations as may be appropriate
- coordinate with the Committee on Social Security.

Accounting Standards (*Subcommittee*)

prepare appropriate input to the International Accounting Standards Board (IASB) on International Accounting Standard IAS19 and related issues.



Two other IAA Committees

- **Financial Risks**

- consider, from the point of view of the actuarial profession, matters relating to investment and financial risk, to report to the Council and to recommend initiatives

- **Social Security**

- liaise with the International Social Security Association (ISSA) and other relevant organizations; to seek to reflect the views of the worldwide actuarial community
- support actuaries working in the social security field; to raise the profile of the actuarial role in relation to social security organizations

- **Professionalism**

- identify and discuss issues relating to the professionalism of actuaries worldwide
- provide guidance to the associations in the interpretation and implementation of IAA standards
- monitor experience with the IAA standards



Education

- determine whether the education system or programme meets the standards set down in the IAA Education Guidelines
- review and report on the IAA syllabus guidelines
- facilitate developments in the globalization of education systems
- maintain a database on the education guidelines of member associations
- provide a consultative forum for associations
- encourage the development of internationally oriented actuaries
- facilitate the exchange of information about CPD opportunities available in countries of member associations.
- Subsidiarity applies for implementation; the Syllabus and Education Guidelines are adopted and monitored by IAA as conditions of membership



International Practice Guidelines

The IAA has so far issued 8 Standards that have the status of Guidelines:

- IASP 1 Actuarial Practice Social Security
- IASP 2 Actuarial Practice (IFRS)
- IASP 3 Contract Classification
- IASP 4 Measurement
- IASP 5 Current Estimates
- IASP 6 Liability Adequacy Testing
- IASP 7 Discretionary Participation Features
- IASP 8 Changes in Accounting Policy
- Glossary for IASPs under International Financial Reporting Standards



The way forward

- The scope of actuarial education, the means of delivery and the method to demonstrate the achievement of uniform technical competence need improvement
 - A form of global certification, as is the case for CFA, has been suggested and could offer an affordable alternative for smaller associations
- There will be a higher burden on the profession to provide guidance for more areas of practice, including for the purposes of peer review, mutual recognition and public interest
- The standards will be more demanding on the actuaries, compliance will not only be mandatory but demonstrable, and the public interest may include some form of whistle-blowing or limits to confidentiality
- Subsidiarity may need to be revisited

