Actuarial Forum
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Overview of the Global Developments in Actuarial Education

Chairman of CIRC Mr. Ma Yongwei, Presidents of the Actuarial Associations, Colleagues, Friends and Distinguished Guests.

Today it is indeed a great day for the IAA and the Actuarial profession, for today we hold the first International Actuarial Forum in Xiamen, China. I would like to thank the Society of Actuaries of China (SAC) for your kind invitation.

This Forum sponsored by the International Actuarial Association, and organised by the Society of Actuaries of China (SAC) and the Actuarial Society of Hong Kong (ASHK), has a main objective to discuss **Global developments** in **Actuarial Education.**

During the 27th International Congress of Actuaries held in Cancun, Mexico 17 – 22 March 2002, I had the opportunity to meet with Mr Wu Xiaoping, Vice Chairman of the China Insurance Regulatory Commission (CIRC). Mr Wu Xiaoping provided me with a short overview of the Actuarial Developments in China and we had a discussion on continuing the co-operation between the Society of Actuaries of China (SAC) and the IAA.

I was pleased to learn about the intensity and openness for the Insurance Industry here and I was particularly impressed by the fact that China is fortunate to produce and develop a large number of talent mathematicians.

Mathematics is a very basic subject for every Actuarial discipline in Actuarial studies, in any country. I believe that actuaries with good mathematical knowledge might be more innovative, more learned and more eclectic.

The new millennium may be a good time to review our professional position and status and make efforts to map our future progression. Over the past 150 years existence of the actuarial profession, we have experienced many revolutions: politically, financially and particularly scientifically. We have tried and succeeded in coping with these dynamic changes, adapted ourselves and even found solutions, ad hoc and long term, of which we should be proud today. This is, I believe, due to the actuarial discipline in which we have been educated and also to the continuous improvement of existing developments and the exploration of new fields.

Today the actuarial profession, with over 30,000 members globally, is by definition a ‘small’ profession, but with a very large influence on the financial market. The members are specialists and consultants in many different subjects: Life Assurance, Pensions and Social Security, General Insurance, Investments, Healthcare and Reinsurance. We must not forget to add to these the ranks of academics that are the tutors responsible for ‘building’ new generations of actuaries.

SLIDE 1. In my presentation I will address, the IAA as an organisation; it's commitment to education in general, as I believe my colleagues representing various established Actuarial Societies will provide more details on Education syllabus of their Societies.

I would like, as well, to share with you my views about the Continuing Professional Developments (CPD) and its lead in the future directions of the actuarial profession, focusing on the need to encourage a new wave of youngsters to the profession and how to achieve this goal.

SLIDE 2. 'Education, Education, Education'
This was one of the key points raised by the United Kingdom Prime Minister, Tony Blair in a Labour Political Party Conference in 2000. Undoubtedly, this is also one of the key points of the Actuarial Profession when facing the future.

SLIDE 3. History of the Actuarial Profession
I would wish to start with the history of our well-established profession. In 1743 a Minister of the Church and an able mathematician, *Robert Wallace* carried out the original calculations on which the Scottish Ministers' Widows' Fund was established, the *first* to be established on actuarial principles.

In 1848, the Institute of Actuaries was established and 1856 saw the foundation of the Faculty of Actuaries in Edinburgh, Scotland. Although it was a British development, our profession is not based only on tradition; on the contrary, we are a profession in evolution, looking towards the future while respecting the past.

We started with Life Assurance and Pension schemes, progression to general insurance, and investments and Financial Solutions..

SLIDE 4. International Actuarial Association
The IAA was founded in 1895, as an association for individual members under the name Comité Permanent des Congrès d'actuaires.

- 45 years ago, ASTIN was set up for General Insurance or the more continental term – Non Life Insurance.
- Fourteen years ago, AFIR was established to specialise in investments and financial solutions, defined in advance by Prof. Hans Bühlmann as 'the actuaries of the third kind'.
- The IFAA, International Forum of Actuarial Associations was founded seven years ago
- In 1998 the restructured IAA was established with the body becoming an Actuarial Association of Associations.
- In 1999 a new section, IACA, was established for Consulting Actuaries which was itself founded in 1968.

It is clear many of the major developments in the Association have occurred in the not too distant past, and we continue this development at present. At the IAA we are actually in the process of discussions towards the introduction of new sections for Pensions and Social Security and for Life Assurance. Further, currently there is great interest and concern with healthcare and 'wider fields', which are expanding fields of enquiry.

SLIDE 5. Organizational Structure of the IAA
Looking at the structural depiction of the IAA, you can see it is a multi-level organisation that is continuing to expand and incorporate further sections and committees. I would recommend here to explore the activities of IAA through the website: www,actuaries.org

SLIDE 6. IAA Committees
There are many committees that comprise the IAA, too many in fact to describe in detail here. The relevant ones to our discussion today are the education and professionalism and I shall be saying few words about them.
Professionalism

- Identify issues relating to the professionalism of actuaries worldwide.
- Recommend appropriate approaches, including standards of practice and qualifications in coordination with the expectations of other worldwide professional forums with respect to cross-border practice, communication of disciplinary actions.
- Guidance to the associations in the interpretation and implementation of standards.
- Monitor member associations' experiences with the IAA standards.

SLIDE 7: IAA Educational Committee Approved Decisions (1 of 2)
The Education Committee, recommended education guidelines and a syllabus for an Internationally Recognized Actuarial Qualification. It will ensure that this standard are being implemented by its member associations, and has plans to periodically, (every three years), review these guidelines.
The aim is to achieve globalisation of education systems, with common elements and assessments.

SLIDE 8: IAA Educational Committee Approved Decisions (2 of 2)
It has also pledged to provide a consultative forum, to guide and aid associations who are in the process of setting up their actuarial education systems. Further, it will take the best practices of these systems, (that are not already part of the IAA syllabus), and build and maintain a referential database to encourage the dissemination of these promising developments. At all times Continuing Professional Development (CPD) will be the focus.

SLIDE 9. IAA Core Syllabus
The core elements of the IAA educational syllabus are as follows:

- Financial Mathematics
- Probability and Mathematical Statistics
- Economics
- Accounting
- Modelling
- Statistical Methods
- Actuarial Mathematics – life, general insurance, pensions & health-care
- Investment and Asset Management
- Principles of Actuarial Management
- Professionalism

These will be implemented by **2005**

SLIDE 10. What are we, as actuaries?
So what kind of professionals are we?
Our profession is actually a combination of a range of different subjects to be studied. We are not pure mathematicians, we are not statisticians, we are not economists, we are not a single discipline. **We are**, a combination of those different disciplines and we are applying existing knowledge to new areas. Thus we should be Masters of these many related fields.

SLIDE 11. Future directions: A New Type of Actuary
Where do we go from here? I am not proposing to follow Prof. Hans Bühlmann and enumerate them as the actuaries of the fourth kind. There are now developing many **'other'** types of actuaries. They are indeed different from the traditional model. I mean here, actuaries who, after obtaining experience in risk evaluation for financial developments, are in the process of, or have already moved to completely different disciplines.

They are those actuaries who are using their skills and experience for professions such as engineering (mechanical, electronic, civil, etc.), physics (e.g. nuclear power), medicine and even the latest developments in genetics**,** described by President Clinton as '**the language in which God created life**'.

The correct definition of the new actuary should be the **'Multidisciplinary Actuary'** and it is this I will go on to discuss.

SLIDE 12. New Fields for the Multidisciplinary Actuary
There are many fields today where the skills and knowledge of an actuary could be very valuable. We have to widen our knowledge not by replacing engineers, physicians, physicists, etc. but by learning more about their disciplines, in order to apply our skills to their discipline in a productive manner.

It is not an impossible mission. We have already got the tools.
Evaluating risks in non-financial projects might be more complicated. We have to do more research; and the more we learn about other disciplines, the more accurate estimates we can make.

One of the more beneficial areas would be the provision of preventative strategies against major or high-risk catastrophes, possibly in relation to the environment, medicine, nutrition, etc.

SLIDE 13. Natural Disasters, Environment and Weather
Natural disasters in the form of earthquakes, windstorms, and volcanic eruptions are frequently responsible for the loss of life, limb, and property.

Actuaries have developed models of these occurrences to assess insurance premiums. Such models could prove equally useful in deciding whether to build a new structure in a potentially high-risk area in the first place, rather than trying to insure it once built.

A proactive strategy, rather than a reactive strategy.
A relatively accurate forecast might prevent or reduce the risk of major catastrophes.

SLIDE 14. Current Professional Development Requirements
The talk of a multidisciplinary actuary and his or her new skills requirements brings me onto the next topic of my presentation. The advancement of the Current Professional Development Requirements within the actuarial profession.

I present the examples of the British and American CPD requirements.

SLIDE 15. Continuing Professional Development in the UK
In the UK, we are expected to take part in many different activities as part of CPD, both formal and informal, between which there are clear distinctions.

- 15 hours of formal CPD per year
- 52 hours of informal CPD

For those who are planning to obtain a Practising Certificate as an Appointed Actuary, Scheme Actuary or Lloyd's Actuary the 'have to' becomes 'must have'.
Whilst these requirements are only mandatory for actuaries who require a Practising Certificate, all actuaries are strongly encouraged to follow them, and many will in fact do considerably more.

(The details of the scheme are laid out in the Faculty and Institute CPD handbook published each year. This contains an explanation of the requirements and guidance as to the knowledge expected of those working in many actuarial fields, although so far this covers only the more 'traditional' roles of the actuary.)

SLIDE 16. Formal CPD
Formal CPD, as might be expected, involves an element of formality. This includes professional meetings in the office, seminars, congresses, research, etc. on a regular basis. Any type of meeting may count, as long as the subjects discussed are relevant to the actuary's professional development.
Individual actuaries are responsible for deciding whether a particular event can be counted as CPD, and how many hours it should count as.

There are rules governing how many hours can be counted for any one event, and in total for certain types of activity.

Actuaries are expected to keep a record of CPD undertaken.

SLIDE 17. Informal CPD
In addition to the formal requirements, it is expected that an actuary will spend an average of one hour each week (52 hours over the course of a year) on informal CPD. This might, for example, consist of: private reading or research, tutoring, or service on non-technical committees such as those organising conferences.

Indeed, this can be any activity not covered by the definition of formal CPD.

SLIDE 18. American Continuing Education Requirements
Within the USA for example, the American Academy of Actuaries requires anyone giving a 'Prescribed Statement of Actuarial Opinion' to comply with their Continuing Education requirements. The Casualty Actuarial Society, also requires its members to comply with these standards.

Continuing Education activities must be relevant to the area in which the actuary is qualified. These activities are divided into organised activities and other activities, each of which is defined in a booklet produced by the American Academy of Actuaries. A minimum of 12 hours per year must be undertaken, of which at least half must be organised activities. Records must be kept of all relevant activities.

SLIDE 19. "Let's make the future of our profession"
The issue of education within the profession extends beyond those already in the profession. We must also look at the issues regarding the education of new actuaries, including attracting new candidates to the profession.

I believe this can be achieved through presentations, seminars, and lectures to potentially aspiring actuaries and the development of educational courses and programmes in Secondary Schools and Colleges, as well as Universities.

'Get them young. Get them interested'.

Through such action, the profession can not only survive, but also expand beyond our expectations. This can only be achieved through the concerted efforts of every member of the profession.

SLIDE 20. The Future
The future stretches before us.

Our profession is already innovative, adaptable and, I believe, capable of rising to the challenge presented by the new global challenges and opportunities. There will be much work to be done by those involved, but the rewards will be worth the effort.

SLIDE 21. Back to the Future
I wish to end the presentation with a homage to what I assume was an actuary of the past, Leonardo da Vinci. He led the way then through his multidisciplinary approach, and now I believe that with the example he set through his intellectual ability and diversity he would be an ideal example for us while we build the future of our profession as multidisciplinary actuaries.

I end with a quotation taken from the World Book Encyclopaedia,
"What most impresses people today is the wide range of Leonardo's talent and achievements. He turned his attention to many subjects and mastered nearly all. His inventiveness, versatility, and wide-ranging intellectual curiosity have made Leonardo a symbol of the Renaissance spirit."

SLIDE 22. Thank you for your attention.