

THE EVOLVING ACTUARY**PRESIDENTIAL ADDRESS****By R S Mitchell FIA, FIAA, ASA****1. INTRODUCTION****1.1 Introduction**

It is a great honour to be your new President in 1999, the last year of the 1900's. Whether this is also the last year of the twentieth century and the second millennium will possibly be a talking point in the year ahead. David Kerr's letter in *Actuary Australia*¹ two years ago goes a long way towards putting forward the various points of view.

Over my working career, I have had the good fortune to work directly with nine of our past Presidents. I have learned a number of things from all of them and just as this has helped me in my professional work, I am sure it will help in my role as your new President.

The task of President seems to grow year by year as the profession's vision and influence grows and there always seems to be more work that can and should be done. Being on Council reinforces the view that the Institute is fortunate to have a large number of willing helpers. Members who unstintingly give of their time in areas such as education, representations to government, guidance to members in the various practice areas, publicity of the profession and the general administration of the Institute. The profession owes a debt of gratitude to them all and I encourage other members to join their ranks; it is a most rewarding experience.

1.2 The Institute

The Institute has continued to make good progress in recent times and much of this has been due to the work of our recent Presidents. Our current Past President, Trevor Matthews, had the responsibility of hosting the Centenary Convention last year. This was the most important local event conducted by the Institute in recent times, certainly since its hosting of the International Actuarial Congress in 1984. Trevor's enthusiasm and friendliness made our guests from around the world most welcome and added so much to our celebrations. His move to Canada has meant that we have lost the valuable

day-to-day contact with him, but he has readily taken up the position of the Institute's ambassador to Canada and has made himself available to assist the Institute when required.

The Institute has progressed further under John Trowbridge's Presidency and it is now a much more efficient and outward-looking organisation than when I joined Council in 1994. John was appointed earlier this year to the Treasurer's Financial Sector Advisory Council and this important appointment further enhances the profession's standing in the financial sector.

There was even more success for the profession later in the year when our Vice President David Knox was appointed to the board of the Australian Prudential Regulation Authority. This appointment recognises the significant part that actuaries play in financial regulation and it was a very popular appointment.

Tony Coleman is our new Vice President and his extensive experience in finance, investment and commerce generally will be of great benefit as the Institute responds to the government's financial initiatives and works towards expanding the actuary's roles in this sector.

Our Executive Director Jock Rankin has been the prime mover in focussing the Institute's attention to a wider range of external issues and has succeeded in significantly raising the Institute's profile in the community. These are developments that will improve our chances of success in the future.

1.3 The Evolving Actuary

A number of the recent Presidential Addresses have focussed on the changing financial landscape and the challenges that these changes bring. Actuaries are having to cope with these changes and to also adapt to the new requirements of their employers and clients. In this address, I want to consider this new environment and how actuaries, particularly our future members, might be trained to better serve their employers and to prosper in this new landscape.

The theme for this address, "The Evolving Actuary", comes from a number of sources, not the least of which is the high rate of change in our society. Members will also be aware that the Institute's next convention will be held in Darwin and this also provides a focus on the work of Charles Darwin and his theories on evolution and the survival of species. Throughout the paper, I have included some quotations from Darwin's most celebrated work, "The Origin of Species"².

“I have called this principle, by which each slight variation, if useful, is preserved (and any injurious variation rejected), by the term ‘natural selection’.”

1.4 The Theory of Evolution

Darwin’s work is quite remarkable, both in its scientific approach to a complex and intriguing problem and to its universal application. The conventional thinking prior to Darwin had been that all species had been created and they were immutable. Darwin observed that expert naturalists had great difficulty in determining which types were particular species and which were variations within species. He came to the conclusion that a number of species had actually developed from a common stock and their variations in development had been the result of some evolutionary process.

Darwin wrote “The Origin of Species” at the end of 1859 and it immediately created controversy with its revolutionary view of natural history. It was only later that the theory became more accepted and its importance confirmed. In fact, the theory of evolution by natural selection has been considered in many quarters as being the most important single scientific innovation of the nineteenth century. The approach Darwin adopted was to set out all of his observations and allow his theory to develop. He even took the extraordinary step of identifying features, not yet observed, but if found could be detrimental to his theory. It is an outstanding example for researchers to adopt in the presentation of comprehensive evidence and then developing conclusions from that evidence.

The observations of Darwin were of course based on natural changes and took effect over hundreds or thousands of years. The world in which the actuary operates is subject to a great deal of human intervention through social, technological, economic and legislative changes, with the result that many of these environmental changes may take effect over much shorter time frames, sometimes within a year or so. Allowing for the differences in the rate of environmental change, I consider that many of Darwin’s observations can have some application to the future of the actuarial profession in the global financial environment.

1.5 Survival of the Fittest

The term “Survival of the Fittest” has often been taken as meaning that the strongest, the fastest the tallest or the heaviest will survive at the expense of other lesser species and variations. This is not the meaning Darwin intended as he observed the species that flourished were those that fitted in best in the environment and were best equipped to take account of changes in that environment. The statistical term “best fit” is a good approximation to its meaning.

2. OUR ENVIRONMENT – PAST, PRESENT AND FUTURE

“A struggle for existence inevitably follows from the high rate at which all organic beings tend to increase. ... Hence, as more individuals are produced than can possibly survive, there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of distinct species, or with the physical conditions of life.... Although some species may be now increasing, more or less rapidly, in numbers, all cannot do so, for the world would not hold them.”

2.1 The Historical Perspective

It is helpful to have some historical perspectives in considering our environment and where it might be heading. In the case of the actuarial profession, Clare Bellis' book³ on the history of the profession in Australia shows how the profession has grown from just a handful of people a little over a hundred years ago. The rich detail in her book gives us images of the profession and how its members have developed over the years.

In a more general context, Professor Percy Allan addressed the Institute's Financing the Ageing Committee earlier this year and referred to the concept of history's three waves.

2.2 History's Three Waves

The main influences on the world's population over the last ten thousand years can be described as three all-embracing waves of change:

- FIRST WAVE Agrarian Age (8000 BC – 1750)
- SECOND WAVE Industrial Revolution (1750 – 1955)
- THIRD WAVE Information Revolution (1955 – 2010?)

The main features of these three waves are set out in the Appendix to the paper.

This view of world history had been picked up to a large extent by Tim Jenkins in his Presidential Address⁴ where he referred to the transition from an industrial society to an information society and the importance of the individual in society. What is also clear is that change is occurring at ever increasing rates.

2.3 The Information Revolution

The main features of the information revolution are:

- Flexibility in the workplace.
 - Work is both complex and diverse and may be outsourced.
 - The organisation has a flat structure where teams are often utilised.
 - Business is transnational, production is global and there is a great deal of customising of products.
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- Markets are global, where quality is of major importance and niches abound.
- Knowledge is power and there is a very free exchange of knowledge globally.

The actuarial profession is knowledge-based and has the potential to benefit fully from these continuing developments. We must ensure that our members are skilled in the services that our existing and potential end-users require and that we are the preferred providers in as many of these services as possible.

2.4 Recent Developments

There are many developments that impact on our community and the way in which we might do business in the future. The list below sets out developments that will affect the profession but is by no means complete. It nevertheless gives an indication of their wide-ranging nature and the fact that many of them are international rather than local.

- The convergence of services provided by life offices, banks and funds management organisations.
 - The establishment in Australia of the Australian Prudential Regulation Authority to oversee these institutions.
 - The establishment of the Australian Securities and Investment Commission to oversee the corporate affairs of all corporations and to regulate the licensing of advisers of investment products. It is also anticipated that other financial advisers such as real estate agents will eventually be regulated in a similar manner to other financial advisers.
 - The establishment of electronic commerce and other services through the internet.
 - The imposition of a goods and services tax and continuing tax reform by the Australian government.
 - The establishment of the European Economic Union from 1 January 1999, where 11 countries have agreed to have one currency and free flow of financial assets across their borders. The UK has declined to join at this stage.
 - The millennium bug, which is arguably the classic form of a self-imposed contagion, as the problem had been identified many years ago and the time available to fix the problem had also been known well in advance.
 - Half of the countries in the world are now in recession, with the other half likely to at least suffer some reductions in economic activity in the next year. In the case of Australia, the budget projections for fiscal 1999 look rather optimistic and some readjustments appear necessary.
 - The former leading economy in the world, Japan, has suffered a significant recession as any shortcomings in its financial management over more than 20 years have been brought to bear on the country in just the last few years. Some doubts persist as to whether the worst is now over.
 - The largest economy in the world, the United States, has been arguably at the peak of its power, but doubts have been raised as to whether the US stock market, for example, has gone too far ahead of itself. Although
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security prices had already fallen by 20% or more in a number of cases, the market's recovery in recent weeks has possibly made the future even more uncertain.

- The wild card to financial stability might well be the hedge funds, and more on them later.
 - The volatility of markets is breath-taking and with even major currencies moving up to 10% or more in a single day, risk management is made not just difficult but impossible.
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3. THE ACTUARIAL PRACTICE AREAS

“If we wished to increase(a specie’s) average numbers in its new home, we should have to modify it in a different way to what we should have done in its native country; for we should have to give it some advantage over a different set of competitors or enemies.”

3.1 The Practice Areas

In this section of the paper, I have taken each of our practice areas in turn and considered how recent developments are affecting them. I have also included the forecasts of demand for actuaries from the Marketing Committee’s paper “The Future of the Profession”⁵, with some adjustments to take account of emerging trends.

3.2 Life Insurance & Retail Investments

The number of life insurance offices operating in Australia is rapidly shrinking as rationalisation takes place in the industry. This inevitably means a reduction in employment opportunities for our members in Australia, but there is the possibility there will be more opportunities internationally as the expansion-minded offices look to extend their operations overseas. Asia has been a profitable area for some time and it will be interesting to see how the recent economic crisis in Asia affects these operations.

In Australia itself, smaller offices are being acquired while offices in the middle ground have nowhere to go unless they also get bigger. This has resulted in very attractive prices for life office operations and has prompted some overseas companies to sell their Australian operations.

Thirty years ago, the majority of Australian life offices had actuaries as their CEOs, but now, this is the case in less than a handful of life offices. As an outsider to the industry, it raises the question in my mind as to what qualities do the present incumbents to the position bring that actuaries cannot? Is this a reflection on our current education process that requires attention or is it just a passing fad of life office boards?

It appears that the actuarial positions lost are mainly technical positions often flowing from the need to service complicated contracts written in past years. The current push to simplification has resulted in conversions to more modern contracts that do not require so much actuarial involvement.

Some offices have split the appointed actuary role from the chief financial officer role and this could also be viewed as a possible reduction in actuarial involvement. This raises the question as to whether the appointed actuary role has become too complex and that it is no longer possible to perform both roles. One possible advantage to the CEO, however, is that in the case where the CFO is not an actuary, the CEO would get independent views from two people with different professional backgrounds and often different approaches to problem solving.

The increased rationalisation of offices is creating increased work for consulting firms with life insurance practices and this activity is likely to continue for some time. The long term future for consulting work may well depend upon the extent to which life offices outsource their actuarial work and seek advice on strategic and other technical matters. In the latter areas of work, actuaries will face competition from other professionals.

Demand for actuaries is likely to be at best static with possible reduced demand occurring in the next 5 to 10 years.

3.3 General Insurance

The competition in the general insurance industry is strong and there are signs that there will be more rationalisation in the industry. This might create some pressure for fewer positions within the industry, as in the case of the life insurance industry, but our members are still new to the industry and are probably more likely to be in tune with current developments and be more attractive employment propositions for the future.

The spread of actuaries to the general insurance industry has been one of the success stories of the profession in Australia. The involvement of a handful of consulting actuaries around 25 years ago has grown firstly through the ability of our members to act in partnership with the industry to solve long-term business reserving problems. Over time, the profession became more accepted and members were consulted about other industry problems. We are now in the position where a number of our members are directly employed by general insurance companies and a few have even become CEOs of general insurance companies.

Demand for actuaries expected to show some increase in the years ahead.

3.4 Superannuation

Superannuation is the second largest practice area for our members. It is an area that has seen much intervention by governments with a major focus on increasing their take of taxation revenue from superannuation savings. However, another cause for change has been the introduction of compulsory superannuation, firstly through awards and secondly through the superannuation guarantee arrangements. Some of the legislative change has been welcome as it has resulted in increased security for members' benefits and a more robust legal environment.

Past governments have invariably considered superannuation funds as being accumulation funds (or defined contribution funds) and have framed the legislation accordingly. The fact that there are also defined benefit funds that have different characteristics are considered a minor irritation and the actuaries could always be relied upon to come up with something appropriate. In practice, the arrangements for defined benefit funds are inevitably more complex than for other funds and this is a further difficulty for them. The surcharge legislation is the most recent example of this phenomenon.

It has been this constant weight of legislation that has made it difficult for sponsoring employers to run defined benefit funds and many have now either changed to accumulation funds or have had the defined benefit section closed and new entrants joining an accumulation section.

With the reduction in the number of defined benefit funds, there has been a reduction in opportunities for actuaries, but there is an increasing focus on asset consulting and funds management. General consulting in superannuation will continue to be required, no matter what the fund's benefit arrangements might be, so superannuation should continue to employ a significant number of our members. It needs to be recognised that with these consulting roles, our members will be in competition with other professionals and they will have to work harder to maintain the status of the preferred provider of professional services.

Demand for actuaries is likely to be at best static with probably reduced demand occurring in the next 5 to 10 years.

3.5 Investment Management

The comments on asset consulting within the superannuation field lead onto investment management and the funds management industry in general. I believe that this is the area that has the greatest potential to employ more actuaries in the future. All of our financial institutions have moneys to invest and it is the common thread through all of our major practice areas. Investment returns have the potential to have the greatest impact on a financial institution's results and consequently, the financial rewards for employees in funds management tend to be well above average.

We already have actuaries in charge of the management of insurance company investments while others are in specialist areas of fund management, including the quantitative products area. Some members are employed as analysts in broking firms and are evidence of the broadening of the profession's influence in the financial world.

Demand for actuaries likely to increase.

3.6 Banking and Finance

Finance work, in particular, has been part of the actuarial landscape almost as long as general insurance. There have been a number of actuaries working on projects such as leverage leasing and capital raisings and this has extended more recently to infrastructure projects and work on the privatisation of public sector businesses. The banking sector promises new opportunities for actuaries, particularly as banks extend their funds management activities and look more and more like life offices. Some actuaries are already working in the traditional banking activities, including profitability projections of lending products, pricing of products and services and designing new products.

Demand for actuaries likely to increase, although starting from a low base.

3.7 Health and Long Term Care

The Institute has had a small but enthusiastic group working in the health sector mainly advising private health insurance companies. Last year, the Institute took a lead in the private health insurance debate by not only drawing attention to the short-comings of community rating but suggesting a more effective alternative, unfunded lifetime community rating. The Institute also made it clear that there were even better solutions to the health crisis if the government was willing to undertake further reform.

Other areas of actuarial involvement include assisting health-care providers in case-mix funding issues and assessing the efficiency of certain health management arrangements through co-ordinated health care trials. There is also continuing work in long term care and retirement villages.

The Health Committee has prepared a short course for actuaries to make them more aware of the issues and it has instigated a survey of health insurers on their perception of actuaries, what their problems are and how they think actuaries can help them. These two initiatives will create a larger pool of actuaries who can provide advice in the sector and help them to target the areas of need.

Demand for actuaries likely to increase, although starting from a low base.

3.8 Energy Industry

Actuaries have been involved at a very early stage in the privatisation of energy utilities in the State of Victoria. This subject was considered at Educational and Topical Discussion Group meetings in Sydney and Melbourne. As not many members were able to attend these meetings, I have set out the progress the profession has made in this area in more detail.

The Victorian State government decided in principle to have an open market in electricity and turned to merchant banks, economists and actuaries to consider how the market for electricity might operate. The recent experience of the privatisation of utilities in New Zealand was also drawn upon and the model was continually refined until it met the government's requirements.

Electricity prices are traded on the Victorian Power Exchange and actuaries are involved in advising generating companies, distribution companies and even some of the larger electricity consumers. To start with, the participants were very much risk averse with distributors wanting to have contracts with consumers that replicated their supply contracts with a margin. However, actuaries have shown that there is more to be gained by accepting more risk if the contract negotiated provides greater returns after allowing for the risk assumed.

The gas industry in Victoria has already been corporatised and the transmission and distribution corporations are expected to be privatised next year. Actuaries continue to play an important part in these developments and the profession's reputation is enhanced by the excellent ground-breaking work in the area.

Developments are not only restricted to Victoria as the electricity utilities in New South Wales have been corporatised and are playing a major role in cross-border electricity markets, particularly because of the excess generating capacity in that State.

Demand for actuaries is expected to increase, but there is an immediate challenge to consolidate the gains already made.

3.9 Other Wider Field Activities

The office of Australian Government Actuary is a most important post and is one where the profession can quite naturally become involved in wider field activities. The valuation of student's HECS liabilities ("Higher Education Contributions Scheme") is an example and there are a number of demographic tasks that the office takes on in addition to its more traditional role of advising Treasury on superannuation matters, including the financial position of the various federal superannuation funds.

Actuaries are likely to become further involved in organisations such as APRA and ASIC where regulation is spreading and our members have experience in the related areas.

One of the major growth areas has been in financial planning where a number of our members advise retirees and persons approaching retirement. Although older members might seem to have an advantage in this field, it is heartening to hear of many younger members who have the ability to service people many years their senior. It is an example of the application of good communication skills.

There are also examples in Actuary Australia⁶ of our members taking on wide-ranging activities in countries such as Kazakhstan on behalf of USAID and in Burundi for the International Rescue Committee. These are challenging jobs in very poor and disadvantaged countries and such an experience will be a great influence on them in their future professional careers.

Demand for actuaries will hopefully increase as members venture out from the more traditional areas.

3.10 Increase in Competition

This brief summary of the practice areas indicates that, putting aside the narrow technical and statutory roles of the actuary, the profession is coming under increasing competition from other service providers. The threats in our traditional areas are coming from other professions or disciplines as they stray

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into their wider field, while we will be in competition with them as we similarly move to new areas of work. The profession needs to position itself so that its members can provide services that are relevant to the client's needs and they are delivered in an efficient manner.

4. THE INSTITUTE AND ITS STRATEGIC PLAN

“Though nature grants vast periods of time for the work of natural selection, she does not grant an indefinite period; for as all organic beings are striving, it may be said, to seize on each place in the economy of nature, if any species does not become modified and improved in a corresponding degree with its competitors, it will soon be exterminated.”

4.1 Background to The Strategic Plan

The Institute’s strategic plan can be traced back to the marketing audit of the profession prepared by the Marketing Committee for the 1995 convention at Coolum. The discussion at the convention gave an indication of the membership’s views and the “The Future of the Profession” paper was discussed at sessional meetings in the following year. Council discussed a draft strategic plan at a workshop later in that year and then adopted the strategic plan.

Trevor Matthews’ 1997 Presidential Address⁷ was titled “Shaping the Next Century” and this title was also taken from the strategic plan.

In preparing the initial audit of the profession, the Marketing Committee conducted a survey of external stakeholders. These stakeholders included CEOs of companies, trustees, regulators and journalists and they expressed the view that actuaries needed to take a much more holistic and broader view of the world when giving advice and they should not operate within a relatively narrow paradigm.

I have already mentioned the assessment of the likely demand for actuaries in the previous section, which can be generally described for the traditional areas “as static at best”. On the other hand, the supply of actuaries is likely to increase by more than 50 each year for the next 10 years or so, with the result that the potential oversupply of actuaries could be of the order of 200 or more.

As part of the discussion on the “The Future of the Profession”, members were asked whether the Institute should control the supply of actuaries as a reaction to this situation. The overwhelming view was that the Institute should not limit the supply of actuaries and that it should seek to enhance the employment prospects of actuaries. The strategic plan contains a number of initiatives that focus on expanding the profession’s influence and penetrating into new areas.

4.2 The Strategic Plan

The strategic plan focuses on 6 key issues:

- **Customer Focus** of the Institute and the profession.
 - **Market Penetration** of existing markets (i.e. more of our services to existing customers).
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- **Market Development** (non-traditional employment) (i.e. applying our services and contribution in a wider range of industries and fields of endeavour)
- **Product Development** where the actuary is the product and skill development enhances our marketability.
- **Role of the Profession** represented by the Institute and its members.
- **Role of the Institute** in extending the profession's influence – there are significant public affairs issues where we have a valuable, and in some cases unique contribution to make.

In 1998, the importance of the strategic plan was elevated with Andrew C Gale, who had been Chairman of the Marketing Committee, being given the responsibility for working with various Institute committees to facilitate its implementation. In the organisation of committees for 1998, the Council Strategy & International Committee was established to oversee the implementation and outworkings of the strategic plan.

Council reviewed the strategic plan at its September 1998 meeting and recognised that we need to refine and be more precise about the brand “actuary” and how it might be promoted to best serve the public and the profession. The Institute also needs to identify the important policy matters in the community and develop appropriate responses so that all stakeholders have a better understanding of the underlying issues.

4.3 International Actuarial Association

Much has been written about the changes to the International Actuarial Association (“IntlAA”) earlier in the year. The IntlAA used to be an association of individual actuaries, but following changes instigated in June of this year, it has now become an association of actuarial associations with the Institute of Actuaries of Australia being the Australian member.

Kerry Roberts continues to be our delegate to the IntlAA through to mid-1999 and after that, it is intended to have the Institute's President as the Institute's IntlAA delegate. This ensures not only continuity within our delegation during the important formative stages of the IntlAA but also will ultimately bring a more direct influence from Council through the involvement of the President. This becomes important as work in the various practice areas is affected more by international developments and many of the profession's initiatives have an international focus.

Our other delegate of the IntlAA, Catherine Prime, is presently Vice President of the IntlAA and is due to become its President in the year 2000. This is a wonderful honour for Catherine and is a worthy reward for her work in the IntlAA over many years. Her honour also brings great credit to our Institute and is further evidence of the great opportunities available within our profession.

4.4 Members of Council

Members of Council are actually directors of a public company and their conduct is subject to Corporations Law. They are elected by the membership and they are there to represent all of the profession. It almost goes without saying that their decisions need to have regard to the wider interests of the community and to the membership in general and not just to their own personal interests or to those of their employer.

4.5 Committees of the Institute

Everyone who has been involved with the Institute's affairs has been confronted with the problem of the management of the various committees, with an acknowledgement that we seem to have too many committees and some of them seem to be larger than they should.

It has often been the case that Council finds that one committee has served its useful purpose and its members are discharged with thanks, but one or two committees seem to sprout up elsewhere continuing the problem. Council is in the process of considering the committee structure for next year and any changes made will have an overriding objective of improving communication between the various committees and Council. One of the proposals under consideration is to have some committees reporting directly to a councillor rather than a Council Committee.

4.6 Task Forces

Another way to limit the proliferation of committees has been to establish task forces for specific projects and to disband them after the project has been completed. They do not have a continuing life themselves but can be re-activated when the need arises again for their work. They are particularly useful in responding to government initiatives and over the last 12 months, task forces had been established to frame responses on tax reform, corporate law reform, superannuation surcharge, APRA and the role of the Australian Government Actuary.

Task forces had also been established to report on the various membership classes within the Institute, the future structure of actuarial foundations, and disciplinary procedures. Proposals on membership classes are being considered by Council, while the actuarial foundations will be linked into the broader issue of supplementation after 1999.

4.7 Disciplinary Procedures Task Force

The Institute's disciplinary procedures are set out in its Articles of Association and there is an explanatory Handbook to Disciplinary Action. The need to reform these arrangements has come from a number of quarters. The Australian Competition and Consumer Commission conducted a general audit of the profession about 15 months ago and suggested some changes to the

Articles. The changes adopted at the extraordinary general meeting last December took care of most of the Commission's concerns. The Institute also undertook to review the main outstanding issue, that of disciplinary procedures and appeal processes which will be reported on by the Task Force next year.

The IntlAA also requires its member associations to have an external disciplinary procedures process and this needs to be in place within the next couple of years. Those members who give investment advice under licence from the Australian Securities and Investment Commission need to be a member of an approved external disputes resolution scheme from 1 October 1998. Our members affected by these requirements have had to join a scheme run by another body, most likely the Financial Services Complaints Resolution Scheme established by the Financial Planning Association and now run by a board independent of the FPA.

4.8 Sessional Meetings

It has been apparent for some time that sessional meetings are not as popular as they had been several years ago. I do not believe this is necessarily a reflection upon the quality of the papers presented, although it is inevitable that some members might consider a particular paper as being somewhat less challenging and possibly not deserving of their attendance. However, we do have a much larger membership and the number interested in a sessional paper should be greater than before. Although work pressures and other factors can make attending a discussion outside a member's specialty a fairly low priority, actuaries these days should keep abreast of developments elsewhere as developments in one practice area can sometimes be usefully applied elsewhere. And there is always the possibility that at some time, there might be a need to find employment in another practice area.

The papers presented at sessional meetings represent actuarial intellectual property, and if this should ever decrease either in quality or quantity, we lose one of our main reasons for existence, that of providing unique professional approaches to financial problem solving. So long as we do have something different and special to offer that is continually in demand, we will always have a place in the world.

5. THE EDUCATION OF ACTUARIES

“Therefore during the modification of the descendants of any one species, and during the incessant struggle of all species to increase in numbers, the more diversified these descendants become, the better will be their chance of succeeding in the battle of life.”

5.1 Our Current Structure

Members will be familiar with our current education structure. Part I of the actuarial course is taught to full-time students at Macquarie and Melbourne Universities and also at the Australian National University through the services of Melbourne University. Those passing the appropriate actuarial subjects with satisfactory grades will have completed the Actuarial Mathematics part of the actuarial qualification. Part II covers the Actuarial Control Cycle, where students are able to develop their actuarial training over a wide range of applications, including those from the wider field. This part of the course may be taken as a full-time student in the fourth year of study, or part-time as a “downtown” student while in employment.

Part III covers the actuarial practice areas of life insurance, general insurance, superannuation (or pension funds), finance and investment management. Students must pass two of these advanced level subjects in order to attain the Fellowship qualification. Macquarie University teaches the finance subject but the remaining subjects are taught through course material provide by the Institute and prescribed text books. Unlike the other two parts of the course, the examinations are conducted and marked by the Institute.

There is a lot to be said for our current structure. We are using the universities for the initial parts of the course and the Institute continues to monitor the results to ensure that the quality of both the teaching and the students emerging from the system exceed our minimum requirements by a healthy margin.

The President Elect of the Society of Actuaries (United States), Mr Howard Bolnick, referred to the problem that the Society is facing in that it does not have enough resources to cope with all of its educational needs. It should be noted that the Society has over 16,000 members. The Society is now considering delegating the teaching of the earlier subjects to the universities and wants the Society to focus on the latter part of the actuarial teaching process.

5.2 Introduction of Actuarial Course at University of NSW.

The University of NSW has established a course in actuarial studies under Professor Mike Sherris and it will commence teaching first and second year students in 1999 and extend tuition to third year students from 2000. It has been recognised that because of its location in Sydney, this development will extend the attraction of actuarial studies to more students. The Finance and Business Management faculty at UNSW is particularly strong and this may

give us the opportunity to attract some of the top finance students to our profession.

This means there will be two universities in Sydney providing courses in actuarial studies and it raises the question: "If UNSW had not taken the initiative, would the Institute have considered it necessary to establish a second course in Sydney?" The answer would probably be "No", particularly if the Institute followed the trend of financial sector businesses where amalgamations have been taking place to gain the benefits from a larger scale of operations. Although it would have been more efficient to have only one university in Sydney, we now have an element of competition and the profession will be in an even stronger position if both universities are flourishing in five years' time.

5.3 Study Courses

It is important to keep the study courses relevant to the needs of our members. There have been comments in recent issues of *Actuary Australia* that the life insurance course has fallen behind the times and the superannuation course appears to require almost annual updating.

We need to review each course from time to time to ensure they give our members the best opportunities now and in the future. There are a number of overseas students taking our exams and we hope a number of our members currently residing in Australia will obtain positions overseas. This latter trend is already in evidence and suggests that where possible, the courses should teach the fundamentals of the subject and not be too specific regarding Australian conditions. This would reduce the occasions when the course requires a rewrite. The Institute would then rely more on professional standards, guidance notes and the role of the senior actuary to fill in any knowledge gaps.

The study courses themselves have become more user-friendly with the introduction of learning guides for each of the specialist subjects. These guides enable the student to progress through a number of learning activities to achieve a specified outcome. All but one of the courses have been revised for 1999 and the revision of the investment management course is to be completed next year for introduction in 2000.

5.4 Training Actuaries of the Future

All that has occurred to date convinces me that the education of actuaries in future should be more broadly based, particularly in our quest for expansion into the wider field. This is reinforced by the findings of the audit of stakeholders referred to in section 4.1 of the paper where the need for a broader approach was advocated by a number of respondents. An education process which concentrates primarily on actuarial subjects will probably not prepare the future members of our profession quite as well as it has done so far.

There are a number of possibilities on how the actuarial course of the future might be constructed and I put this model forward only for discussion purposes. It is a first attempt at identifying what changes might be made and we must be careful to ensure that any changes fully take account of the views of all members, the universities, and the students themselves.

- The current three-year course could be stretched to four years by requiring the student to take a major in another discipline. This might be economics, statistics, philosophy, finance, pure mathematics or anything else. I am not inclined to put any restrictions on the student's choice, with the result that the education will be broader. There would also be a great advantage to those students who were able to do an honours year, where the writing of a thesis would give the student the benefit of undertaking a major project early in his or her career. Any variation from the existing course design obviously needs close consultation with all three universities.
- The next section is the Actuarial Control Cycle and this would be done following completion of university studies as either a "downtown student" or using the distance education services of universities. Students wishing to do Part II as a full time student would need to do a further year.
- A review must also include Part III and requiring two subjects at the advanced level is more in keeping with the concept of a broader education for an actuary. However, there are some anomalies and these are discussed in the next section.

One of the advantages of this proposal is that a student might have an honours degree in economics and would attract employers more from this qualification than the fact that the student is also an Associate of the Institute. So long as the graduate is encouraged to continue with the Fellowship qualification and the Institute remains relevant to the graduate, then we have a prime candidate for a wider fields opportunity. There are clearly risks in the graduate subordinating the actuarial qualification in view of its immediate relevance to some current work and becoming a "lost member", but the risks are arguably worth taking if the profession is to expand its influence.

5.5 Advanced Level Requirements

One of the great strengths of the actuarial profession is the fact that actuaries have been expert at both sides of a financial institution's balance sheet. Students who do two liability subjects will have their investment knowledge largely limited to the investment component of the Actuarial Control Cycle. We need to reflect on whether the existing course fully prepares a student on investment matters and if any further investment study is required beyond the work covered in the Control Cycle subject and their degree course.

Our current course structure also allows students to take the finance and investment management subjects and not do a liability subject at the advanced level. It is my understanding that the Control Cycle subject comprehensively covers the management of liabilities and this is not really a problem.

5.6 Alternative Approaches to Broaden Education

The broadening of the actuary's education could come after the completion of Parts I and II. However, the student would in all probability be an Associate at this stage and there would be an enormous incentive to concentrate on the Part III subjects and obtain the Fellowship qualification. Therefore, unless there is some compulsion to take other studies, and this would be difficult to apply in practice, a reliance on voluntary additional course selection is unlikely to succeed. There would have to be a greater reliance on CPD and this is discussed in the next section.

5.7 Continuing Professional Development

In order to further broaden the Institute's education process, the CPD programme needs to be expanded beyond sessional meetings, ET discussion groups and practice committee seminars. The Health Practice Committee's health insurance course, comprising a course of reading over several weeks, a two-day residential workshop and a written case study is a notable development. Members completing all three stages would be eligible for a certificate of completion of the course. Unless I am very much mistaken, this would be the first time that the Institute has provided some differentiation in the qualification of its Fellows. It is likely that we will see more of these developments in the years ahead.

We must provide proper CPD opportunities to our members who reside outside of Sydney and Melbourne and this also extends to our overseas members. This is a subject that will be discussed by Council early next year and we will report back on developments as soon as possible.

6. SOME CURRENT ISSUES

“As in each fully stocked country natural selection necessarily acts by the selected form having some advantage in the struggle for life over other forms, there will be a constant tendency in the improved descendants of any one species to supplant and exterminate in each stage of descent their predecessors and their original parent.”

6.1 Investment Management Course

The revision to the investment management course extends its coverage to give students a better understanding of basic financial analysis of investments and how markets react to various influences. Following these changes, it is anticipated that students passing the subject will be even more attractive employees for funds management companies than before. It would also better equip actuaries to perform their work in other practice areas.

ASIC has circularised to interested parties, a paper on competence of investment advisers and the Institute has put in a submission detailing the investment content of the actuarial course. It is important to have the actuarial course structured so that our members are able to meet external requirements as easily as possible. Ideally, we should have course options for our members that enable them to practice in their desired field with no additional study or qualification required. In the circumstances where additional study is required, then there should be no need to repeat material previously studied in the actuarial course.

6.2 The Global Financial Crisis

The financial climate is subject to some form of global warming. The Asian financial crisis started arguably in Thailand in the middle of 1997 and then spread rapidly to the South-East Asian economies of Indonesia, Malaysia the Philippines and, to a somewhat lesser extent, Singapore. Korea also became embroiled in the crisis and the Japanese economy, which had been battling with a series of doubts about a number of its financial institutions, also was affected by the growing crisis.

We are led to believe that the large hedge funds have played a major part in the crisis by taking positions against currencies already wounded by these events and making those currencies even weaker. The game then moved to Eastern Europe where the Russian currency came under increased pressure.

It is too easy to put to one side the developments abroad when their impact is not apparent immediately. However, members who attended the Melville Lecture by Mr James Wolfensohn, President of the World Bank would not be in any doubt as to the gravity of the crisis and its solution remains a top priority among developed and developing countries alike.

6.3 The Hedge Funds

Much has been written in recent weeks on hedge funds. The unprecedented rescue of Long-Term Capital arranged by the US Federal Reserve Board stunned the world and disclosed for the first time details of its highly leveraged structure. Long-Term Capital is reported to have borrowed more than US\$100 billion to finance its strategies, which appear to have been mainly in futures contracts thereby increasing the level of gearing further. The company also appears to have gone to great lengths to conceal details of its practices from its own investors.

Its collapse had the potential to threaten the whole financial system and its major creditors, comprising seven large global banks, undertook a rescue operation. This was probably the first sign for American investors that the currency crisis overseas can affect them in a major way.

There is only anecdotal evidence at the moment about the management of Long-Term Capital, but its CEO, Mr James Meriwether, and his team were referred to by a former Deputy Chairman of the Federal Reserve Board as having:

“Taken the maths of finance to new highs, while they took risk to new depths”.⁸

6.4 Derivatives

Derivatives management will play an increasing part in the future role of the actuary. A number of actuaries have already reviewed the risk management statements prepared by the investment managers of superannuation funds and firms undertaking this work would be expected to have had futures advisers licences issued by the ASIC.

Paul Thornton, President of the Institute of Actuaries (UK), remarked in his recent Presidential Address⁹ to the Institute that actuaries seem to have lost ground to financial economists, who are writing papers on derivatives and the pricing of options that could well have been written by actuaries. I have a great deal of sympathy with Paul Thornton’s view and I believe there is even further scope for actuarial involvement. Firstly, work needs to be done on understanding the limitations of financial economic theory and debates recently on investment papers in the UK indicate that there is a long way to go before both sides reach common ground. Secondly, actuaries are risk managers and they should also be expert in the practical side of the operation of futures exchanges, including identifying and quantifying risks arising from the purchasing and holding of derivative contracts.

It has been my own experience that a number of funds managers are not fully aware of these risks, and these systemic risks are very real as commented upon in the Corporate Law Economic Reform Program Paper No 6.¹⁰

“The October 1987 stock market crash, where there was near failure of the US Options Clearing Corporation and the Hong Kong Futures Guarantee Corporation required rescue and recapitalisation, and the failure of Barings Futures (Singapore) emphasises the counterparty risks faced by financial market exchanges.”

6.5 The Superannuation Surcharge

The superannuation surcharge was arguably the most controversial development over the last couple of years. Some of our members were highly critical of the Institute’s response on the issue, mainly because they were not seeing any evidence of Institute action in the newspapers and elsewhere and were continually frustrated with imperfect legislation.

The Institute has adopted a consistent line throughout the last 2 years:

- The government had a right to raise taxation revenue in any manner it considered fair and reasonable.
- It would have been better to use existing tax structures rather than create a new tax raising mechanism.
- The Institute actually put forward a proposal that would have been a combination of higher tax on lump sum benefits and a temporary additional tax on higher taxable incomes. This proposal was rejected by the government as being too much like an additional tax.
- The calculation of the notional surchargeable contributions factor (the means of apportioning costs between members of defined benefit funds) should be legislated by the government.
- When the Taxation Commissioner issued a taxation ruling rather than through legislation either in the Act or in regulations, the Institute repeatedly requested the government to put the issue beyond doubt by legislating the basis.
- The Institute kept close contact with both the Assistant Treasurer and his advisers to assist in progressing the situation.

The Institute obtained several opinions from a leading Queens Counsel to assist members in the preparation of surcharge certificates. The main thrust of the opinions was that it was not possible for actuaries to certify that their certificates were in accordance with the Act because parliament did not give actuaries sufficient guidance on what was required. This had the potential to put members in conflict with the Commissioner and to some extent, with the government. It was Council’s view that discussion with the government was preferable to open debate in the media and elsewhere. What made matters more difficult was that further opinions obtained by individual firms on specific questions identified some sections of the Act that were in conflict with other sections of the Act and that there were parts of the ruling that were also in conflict with the Act. This has left actuaries in a most difficult situation and any improvement is unlikely until the legal challenges to the tax have been heard.

7. FINAL COMMENTS**7.1 Some Future Challenges**

There is no shortage of future challenges and I have listed a few that readily come to mind. The list is by no means exhaustive and others are welcome to add their contributions.

- Improvements in medical science, and in particular genetics and microbiology, offer the real prospect of significant improvements in future life expectancy in the years to come. This will have a significant impact on future social service costs, health insurance costs and some life business.
- The application of the GST to the financial sector is a matter currently being addressed by the Institute and its application is far from clear in some areas. The corporate taxation system is also under review and the Institute has a role to play here too, particularly in relation to financial institutions.
- The superannuation taxation system is in a mess and needs simplification so that it can work more efficiently. Possibly an even greater challenge is to expand the debate beyond just redistributing the tax burden between the various participants. Both major political parties have, as part of their agenda, any tax changes should be revenue neutral. The debate needs to be broadened to include the implications of higher levels of long term savings in the community.
- The private health system needs rejuvenation and we need to give the profession's input to the major political parties. Health insurance companies clearly need assistance during these difficult times and actuaries need to be able to show they can provide the wide-ranging services required.

7.2 The Evolving Actuary

It is time to return to the theme of the "Evolving Actuary". The actuarial profession in Australia, to its credit, has not stood still and has branched out into some of the wider fields. For example, it would have been unthinkable five years ago to have actuaries advising electricity companies and gas utilities on their corporate business strategies. These changes are part of the evolutionary process that is broadening the actuary's fields of endeavour.

However, there is much still to be done. A number of our members have had limited experience outside the technical actuarial field and need to be encouraged to broaden their outlook. An approach to their employer about their own career development is a good start. The Institute can assist through an enhanced CPD programme either directly through the Institute or through courses approved by the Institute from other suppliers.

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There is also the possibility of broadening the actuary's education at the tertiary level and this is mentioned in section 5.4.

The actuarial profession has a number of advantages and we should make the most of them. Unlike most other professions, we are federally based rather than state based so we do not have to deal with a number of state governments in order to make legislative changes relating to the profession.

We are also small enough to be able to get a ready consensus of views from members and to be able to respond to initiatives quickly.

We have many excellent role models in the profession who have been very successful in their endeavours, often outside the traditional fields.

I have every confidence in the profession's future and that it can readily adapt to the changing environment and be one of the real survivors.

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