THE MAGAZINE OF THE ACTUARIES INSTITUTE ● JUNE 2014 ISSUE 190

Actuaries

Actuary of the Year – Call for Nominations

Nominations from members for the award of 2014 Actuary of the Year are now invited.

Recognition and celebration of the achievements and contribution of one of our members is an ideal opportunity to promote the value which actuaries can add.

This award is presented to an individual who has brought credit to the profession and made a key contribution to business, the community, government or the profession.

It is expected that a particular recent contribution can be identified in making this award, although an ongoing contribution may be considered relevant.

There should be public awareness of the individual and, in making the award, preference will be given to a person who will bring favourable publicity to the profession.

Deadline for Nominations – Monday 7 July 2014

http://www.actuaries.asn.au/about-us/honours-and-awards/actuary-of-the-year

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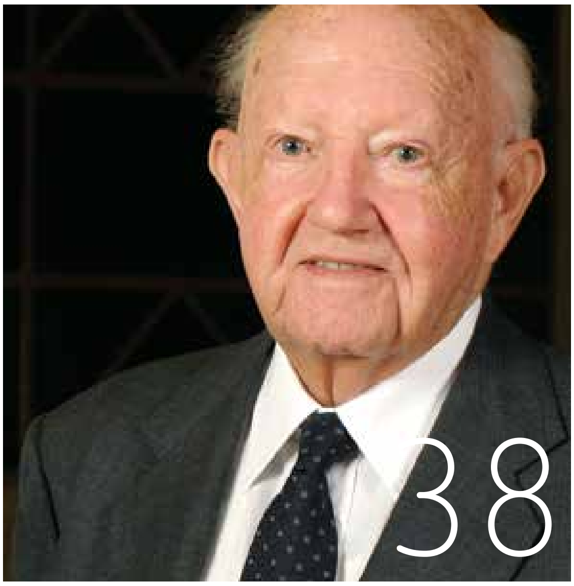

Actuaries

IMPORTANT INFORMATION FOR CONTRIBUTORS
Actuaries Magazine welcomes both solicited and unsolicited submissions. The Editorial Committee reserves the right to accept, reject or request changes to all submissions as well as edit articles for length, basic syntax, grammar, spelling and punctuation via ActuariesMag@actuaries.asn.au

All contributions must conform to our submission guidelines which are available from the Communications and Marketing Team.

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Coming Up

Jun

Member Networking – The Beatles in Australia
Monday 23 June, Melbourne

Group of Retired Actuaries Melbourne
Tuesday 24 June, Melbourne

Young Actuaries Program – Your Next Actuarial Role
Wednesday 25 June, Melbourne

Young Actuaries Program – Relationship Building with Internal and External Clients
Thursday 26 June, Sydney

Jun - Oct

Business Luncheons with CEO David Bell
Thursday 26 June, Sydney
Monday 21 July, Sydney
Monday 25 August, Sydney
Monday 29 September, Sydney
Monday 20 October, Sydney

Nov

General Insurance Seminar
Monday 17 – Tuesday 18 November, Sydney

Major Event – Enterprise Risk Management Seminar
Wednesday 19 November, Sydney

WELCOME TO OUR NEW ASSISTING EDITORS


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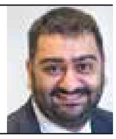


Mental Arithmetic

Recently, I've had to twice do something I generally try to avoid – mental arithmetic. (Mathematics, in which I have a Masters degree, didn't make any sense to me until it started being more about letters than numbers, but that's another story.)

The first occasion was trying to work out whether I would be caught by the increase in retirement age to 70 by 2035. Normally I don't bother about working these kinds of things out as I assume I'm young so everything will affect me. Having just hit my 40th birthday, I can no longer rely on this assumption, and after much head scrunching, it was clear that I was still not old enough to have the grey lobbyists on my side.

The second occasion was at the recent 2014 Catastrophe Risk Seminar – possibly one of the best Actuaries Institute events I've attended. One by one the excellent presenters unpacked the cat models, and brilliantly explained how they worked, how to use them in practice, and more importantly how not to use them. Collectively, they gave wise counsel on how we as actuaries can help boards and management of insurers improve their understanding and use of cat models. They described the latest innovations and prospects for improving the models and reducing their prediction uncertainty.

One of the largest uncertainties is of course the impact of climate change – something emphasised by Lloyd's of London, who on the same day as the seminar released their report on Catastrophe Modelling and Climate Change. This report sets out the evidence of climate change in the global catastrophe experience over recent decades, and prompts insurers to include such trends in their cat modelling.

Also outside the seminar, the US surprisingly announced that carbon emissions from their power plants would reduce by 30% from 2005 levels by 2030. Just like POTUS, the Australian public also seems to have become more concerned about climate change, according to a *Sydney Morning Herald* survey.

Back at the seminar, Andy Pitman of the UNSW Climate Change Research Centre gave a comprehensive presentation on the impacts of climate change on different natural perils, the state of the science, and the uncertainties – the greatest of which is actually future carbon emission levels. Professor Pitman pointed out that the overall global impact of warming was basic thermodynamics, but the science is less clear about prediction at a city level. In the figure below you can see the best estimates we have of the increase in frequency of flooding events under a sea level rise of half a metre. Is there even enough capital in the world to provide APRA's mandated 1 in 200 year event cover if claim frequency increases a thousand fold?

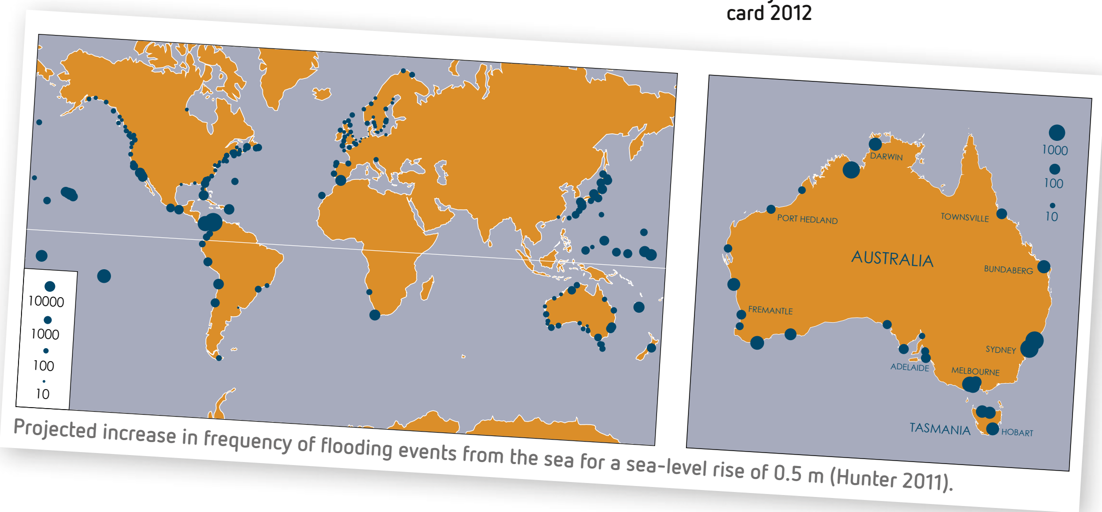
Is there even enough capital in the world to provide APRA's mandated 1 in 200 year event cover if claim frequency increases a thousand fold?

In Sydney we can expect that a 1 in 100 year flooding event will happen almost every month. If we continue to have high emissions, we'll get that half a metre sea level rise by 2070. I didn't bother working out how old I'd be then.

I worked out that my six month old baby son would be 57. 🅰

Sharanjit Paddam

Source: Antarctic Climate and Ecosystems CRC Sea Level score card 2012



Projected increase in frequency of flooding events from the sea for a sea-level rise of 0.5 m (Hunter 2011).

Alice Crowley
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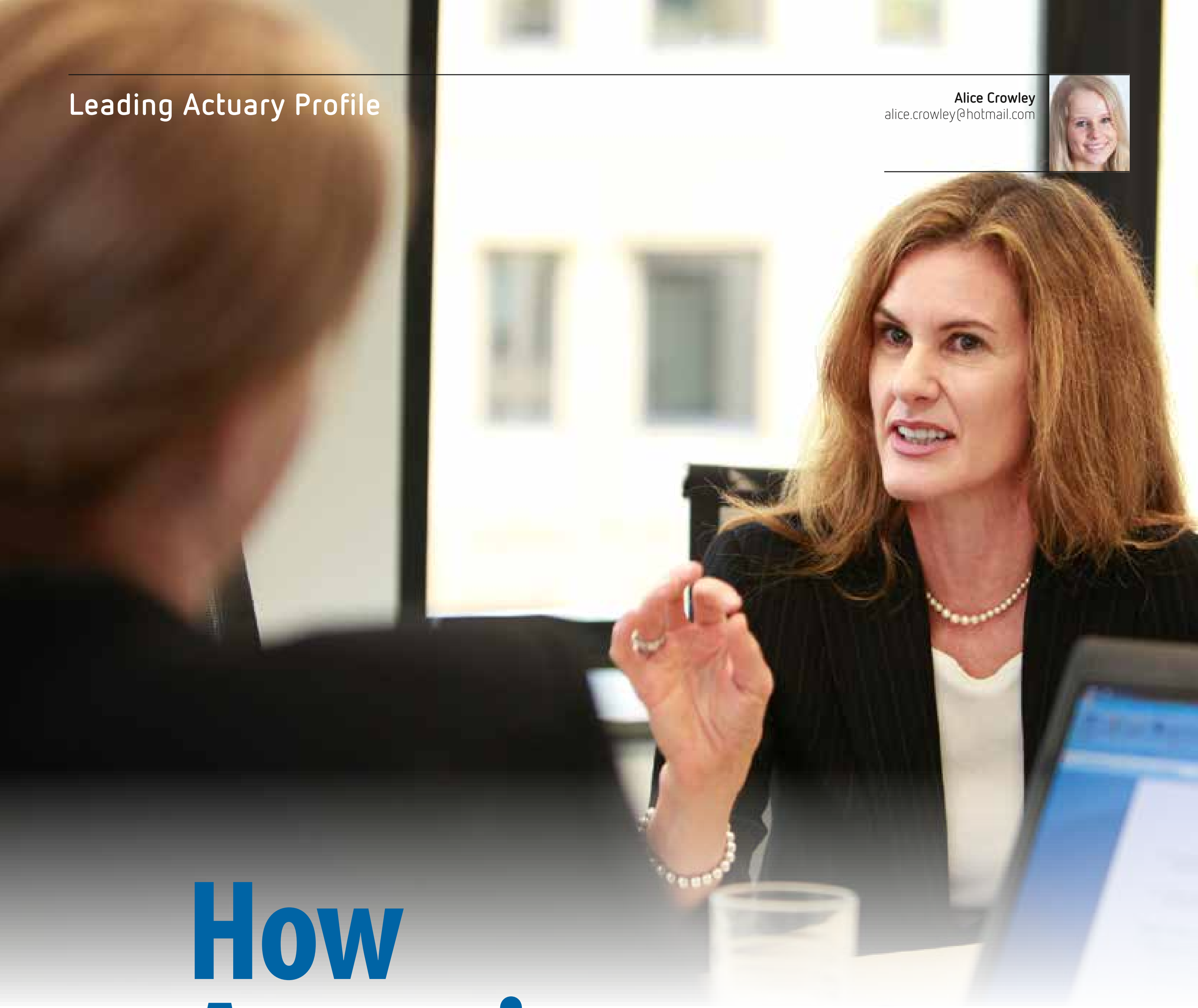

How Actuaries can get a Seat at the Boardroom Table

An interview with
ELAINE COLLINS,
Non-Executive Director and Member of Risk, Compliance and Audit Committee – Zurich Insurance

While it's encouraging to see an increasing number of actuaries have C-suite ambitions, the path to the boardroom table is not always a straightforward one. Here Elaine Collins, currently a Non-Executive Director at Zurich Insurance, member of the Institute's Professional Standards Committee and mother of two, takes the time to explain her actuarial career and the boardroom/family life balancing act.

FULL STEAM AHEAD: NEXT STOP… ACTUARY

Very few people can say that one train ride changed the direction of their life. Luckily for the Australian actuarial profession, leading actuary Elaine Collins is one of them. In 1985, Elaine was sitting on a train studying for her final honours exams when a conversation with a fellow commuter changed her career direction.

"I happened to be sitting next to a non-actuarial colleague of John Trowbridge, who saw I was studying maths and statistics at the University of Sydney. We began to chat and after informing him I was about to accept a role at the Reserve Bank, he sent me along for an interview with Trowbridge Tillinghast and the rest is history!

"I began working at Trowbridge Tillinghast with a maths degree. The firm was a group of actuaries doing work for clients which was stimulating, interesting and enjoyable. I was surrounded by talented, highly respected actuaries and I learned important things every day. I also realised that I wouldn't progress further in this career unless I became qualified," Elaine explained.

In 1993, Elaine began studying a Master of Economics (Actuarial) at Macquarie University. This paired with the birth of her first child was the springboard for Elaine's company 'Actuarial Overload.'

"Actuarial Overload was basically designed to support actuaries during busy periods. I was studying and raising small children at the time, so was seeking more flexibility. Ironically, the success of the business meant I had more on my plate! On the flip side, providing actuarial support on a contract basis to clients in life insurance, general insurance and superannuation meant I learnt a lot about a diverse range of businesses.

"At a time when my children were growing up and APRA had recently created the Appointed Actuary role for general insurers, I accepted a permanent position with one of my existing clients, KPMG. The creation of the Appointed Actuary role saw general insurers realise more and more the value actuaries brought to the space and the useful business implications of our work."

Following her time at KPMG, but continuing her work as an Appointed Actuary, Elaine took a position at Deloitte as Partner, and leader of their general insurance actuarial team, which she found both challenging and rewarding.

ADVERSITY FUELS BOARDROOM AMBITION

When Elaine's husband died very suddenly five years ago, she didn't know if she could get through it. At a time when most people might understandably grind to a halt, this gruelling period changed Elaine's perspective on the important things in life.

"The tragedy crushed me. With our two children then aged nine and twelve also experiencing such a huge loss in their lives, it took me a long time to reassess my boundaries and manage my life. I've learnt that when shockingly adverse events occur, it isn't the end. You can come back, but you look at things in a different way, because nothing will ever be the same."

Elaine reached a point where she felt the need to readdress her work/life balance and move into a different direction. During this time, the importance of establishing strong networks really hit home.

"While I wanted to feel challenged in my career, it was extremely important for me to be involved in my children's lives, especially at such a difficult time. The senior roles I worked in previously were quite demanding, so it wasn't feasible to do them part-time. All of this fuelled the idea of becoming a Non-Executive Director. The next step was to work out how to make it happen.

"After announcing my retirement at Deloitte, I went on a five-day course at the Australian Institute of Company Directors, which covered a wide range of topics, including strategy, risk, accountancy, the duty of directors and role of the board.

"I began speaking with my clients and colleagues in the general insurance space and a number of opportunities opened up. Because I had spent much of my career presenting at conferences, chairing Institute seminars, speaking with industry people and being active on committees, the general insurance industry knew me and I believe that's why I was invited to join two boards, only one of which I could accept, owing to conflicts. I cannot highlight enough the importance of networks, without mine I wouldn't be in this position," Elaine said.

According to Elaine, there were two unexpected things which helped prepare her for her current role as a non-executive director.

"The first was my involvement as a general insurance media spokesperson for Deloitte post the Japanese Tsunami in 2011. From that experience, I learnt the art of explaining actuarial analysis and its implications to non-actuaries.

"The second was being on Institute committees. There is an agenda of topics to be discussed, there are things you personally want to influence, and you are surrounded by intelligent people, who all hold diverse views. Sometimes you don't realise the true value of an experience until much later when you use the skill in a different capacity."

THE BOARDROOM/FAMILY BALANCING ACT

Elaine is the first to admit that with technology and the increasingly fast-paced corporate world, one of the biggest hurdles for women in particular is finding the right work/life balance. "I believe that the main challenge for women in senior executive positions in Australia is the long hours. Women are highly capable of meeting the expectations of these senior roles, but often also have children with whom they would like significant interaction after work.

"Electronic communication allows more flexibility, but it can also mean that you never really take a break from work. Women with young children often find it hard to be away from them all day and relish the opportunity to spend quality time with them at home without the distraction of unimportant emails that could really have waited until the morning."

"Companies realise the value of having women in senior roles, but they need to make it work. The business should be focusing on the quality of hours rather than the quantity and a simple step to improve the situation would be to ban those last minute 6.00pm meetings!"

In summary, Elaine believes there is no set conventional path to the boardroom.

"Being able to balance work and family life was an important factor for me, but others might want a different balance, such as embracing global work opportunities. Since I want to travel with my children before they reach adulthood, we visited Europe and North America in 2011, cruised to Vanuatu in 2012 and adventured in South America in 2013. Each individual should feel empowered about their own course knowing they have the benefit of actuarial training behind them." A

Holidaying at Machu Picchu and...

... in Galapagos

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Latest Developments in Mortality Projection Methods

> Mortality rates in Australia and New Zealand have declined over time, and there is no sign of this trend abating – creating significant implications for pricing and funding scenarios into the future.

RISING LONGEVITY

Increasing life expectancy poses a significant challenge to many insurers, pension plan sponsors, and governments. The major concern is the so-called longevity risk, which is the risk of higher than expected payouts due to mortality improvement.

The graphs to the right show that the mortality levels of Australia and New Zealand have been declining over time. In fact, life expectancy of these two countries has increased by around three months for every year in recent decades, and there is no sign of this upward trend ending in the foreseeable future.

For pricing, reserving, and funding purposes, it is of utmost importance to study carefully the past patterns of mortality movements and to make a proper assessment of future trends.

Figure 1: Death rates in Australia (log scale)

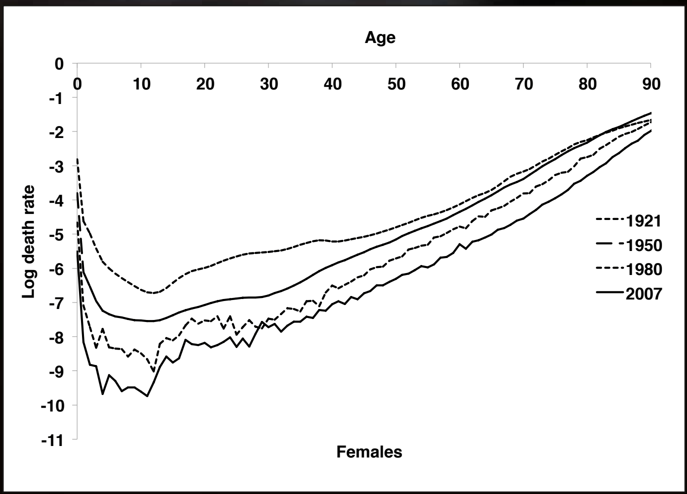


Figure 2: Death rates in New Zealand (log scale)

GENERAL APPROACHES

Broadly speaking, there are three approaches for forecasting mortality – expectation, explanation, and extrapolation. Each approach has its own advantages and disadvantages, as outlined in the table below, but extrapolation remains the most prevalent approach. This approach is categorised by assuming certain past trends will continue in the future.

Table 1: Three general approaches of forecasting mortality

APPROACH	INPUTS	OUTPUTS	ADVANTAGES	DISADVANTAGES
Expectation	• individual expectations • expert opinions	• aggregate measures	• can incorporate structural changes and unusual incidents	• too pessimistic • limited by views of current technology • no specific details
Explanation	• fundamental theories • economic, social, environmental factors	• detailed relationships between variables	• allow for precise mechanism underlying mortality changes	• lack of data • interactions too complex • high risk of model misspecification
Extrapolation	• past mortality trends • mortality models	• model forecasts	• solid benchmark • transparent and systematic • statistically sound • can be modified by other relevant information	• simply assume past trends will continue • do not allow for underlying mechanism of mortality changes

Some critics argue that this approach does not allow for the underlying mechanisms which dictate how different variables change over time. However, projecting past, relevant trends still represents a solid benchmark for further analysis.

The projection results can be adjusted based on other related information, experts' opinions, and professional judgement. Moreover, sensitivity testing can be carried out to examine the impact of changing the initial assumptions. Overall, extrapolation serves as a transparent, systematic, and statistically sound way to estimate future mortality and is very useful in various kinds of actuarial calculations and population projection.

EXTRAPOLATION METHODS

There are discrete-time and continuous-time mortality projection models. The former is defined for data collected at regular intervals, whereas the latter involves stochastic processes and complex mathematics. Because mortality data is usually summarised yearly, most work thus far uses discrete-time models.

The simplest discrete-time approach is probably calculating the average rate of decline (per year) of the death rate at each age or age group. However, this approach may produce irregular age patterns as the death rate at each age is projected to change at its own rate. This approach does not give a representative index which could reflect the overall mortality level.

Besides the simple approach above, there are two main categories of discrete-time models that have been thoroughly tested and discussed in the literature over the past 20 years.

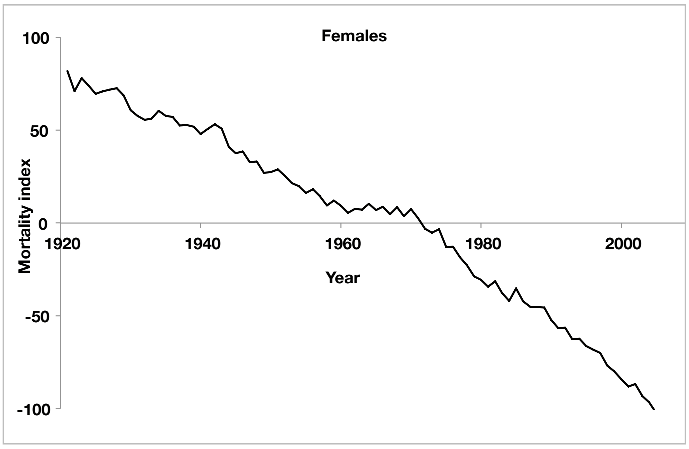
The first category is the Lee-Carter (LC) model and its various extensions, which have the following basic format:

log death rate = age schedule +
age-specific sensitivity x mortality index

Numerous studies have demonstrated that the mortality index declines fairly linearly over time after around 1970 for many countries' data (seen in the following figure), suggesting that one may project future mortality by simply extrapolating the linear trend.

The LC model has the advantage that its mortality index is easy to interpret as an indicator of overall mortality levels across time, but the use of a single index and unsmoothed age-sensitivity factors may lead to irregular forecasts.

Figure 3: Lee-Carter mortality index for Australia



The other category is projecting the parameters of a mortality curve. Some notable examples are the Gompertz, Weibull, Heligman-Pollard, and logistic models.

In particular, the Cairns-Blake-Dowd (CBD) model, which has been covered in many recent studies, is a reduced form of the Heligman-Pollard curve. The specification is:

logit death rate = intercept + slope x (age – mean age)

The intercept and slope are treated as mortality indices, which are projected by a time series model. All these models ensure a reasonable mortality schedule in the projection. Nevertheless, if the chosen mortality curve has too many parameters, the multivariate modelling process can be very tedious. One solution is to focus on a certain age range, e.g. the CBD model deals with ages 60 to 90 and has only two parameters.

MULTIPLE POPULATIONS

Most of the current literature has either projected each population separately (by sex, country etc.) or the entire combined population as a whole. Less attention has been paid to modelling two or more related populations jointly.

This joint modelling is particularly important when either:

1. it is necessary to make sure that projected death rates of different populations do not diverge;
2. the data being studied is sparse and reference has to be made to a larger population; or
3. the portfolio to be hedged and the hedging instrument have different underlying populations and basis risk needs to be assessed.

In broad terms, there are three types of multi-population models.

The first type is to fit a single-population model to each population separately and then to model the dependence between the multiple mortality indices in some way. This method is straightforward but it usually generates divergent projected values.

The second type is to incorporate a common factor for all populations in aggregate and also specific factors for each population. The key advantage of this type of model is that the resulting projections are 'coherent' and do not diverge.

The final type of joint modelling specifies the ratio of death rates between two populations as a function of age and period factors. This method also produces coherent projections.

SIMULATION METHODS

In addition to the best (central) estimate, it is also of practical interest to obtain a probability distribution which describes how actual outcomes may differ from expected. This is especially so under the current regulatory environment, which has become more risk-based. For example, QIS5 Technical Specifications for Solvency II states that "the nature of the risks underlying the insurance contracts could be described by the probability distribution of the future cash flows arising from the contracts".

Prudential Standard LPS 340 by APRA also stipulates that "in determining the best estimate liability and best estimate assumptions, the life company must have regard to the impact on the liability of the distribution of potential future outcomes".

One can use this probability distribution to assess certain risk metrics (e.g. standard deviation, variance, Value-at-Risk) in pricing, hedging, reserving, and capital management. Since deriving the probability distribution for most mortality projection models is analytically intractable, simulation methods are needed to generate random samples of future outcomes. In principle, process error (random fluctuations), parameter error (uncertainty in parameter estimation) and model error (model misspecification) should all be taken into account in the simulation process.

In the literature, there are basically six kinds of simulation methods based on the LC model. These include:

- considering the error term of the mortality index only;
- including the estimation error of the drift term;
- simulating the parameters from the multivariate normal distribution;
- bootstrapping the number of deaths from the Poisson distribution;
- bootstrapping the residuals of the fitted model; and
- Bayesian Markov Chain Monte Carlo (MCMC) simulation.

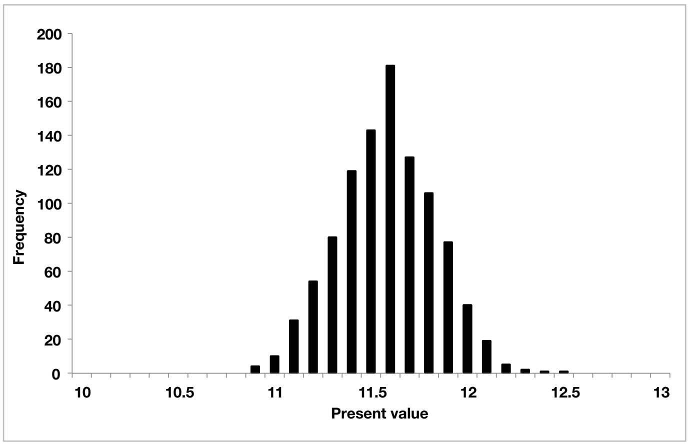
For the first two methods, the programming is fairly straightforward and the computation time is short. Comparatively, the last four methods are much more demanding and time-consuming in general, but they offer a more precise and sophisticated mechanism for integrating different errors.

PRACTICAL USE

Longevity risk is a significant issue facing many insurers and governments. The existing literature provides a rich source of mortality projection methods, which can help practitioners study past mortality changes in more detail and make better forecasts.

Particularly, as insurance regulations evolve to become more risk-based, it is expected that stochastic mortality modelling will grow in importance. For instance, the following figure shows the simulated distribution of the present value of an annuity of $1 per annum for a New Zealand female aged 65 on 1 January 2010, in which the discount rate is assumed to be 6% per annum. The mean, standard deviation, and different percentiles can readily be estimated from the simulated samples.

Figure 4: Simulated distribution of present value of an annuity using New Zealand data and Lee-Carter model



Unsurprisingly, each mortality model or simulation method has its own merits and deficiencies. Therefore, it is essential to have a good understanding of the main assumptions and features of the chosen model, and to consider its appropriateness for the purpose for which it is being used.

Ideally, a practitioner should test different approaches and examine the impact on the calculation results.

Stochastic mortality modelling is gaining popularity in overseas countries such as the US and UK, with more and more insurers attempting to adopt certain advanced methodologies to assess their businesses.

Those institutions that do not try and experiment with these emerging tools at all run the risk of being regarded as obsolete in their valuation methods among their peers. This trend in turn would lead to better data collection, preparation, and analysis, and more theoretically sound techniques to be developed for use in practice. A

For those interested in future reading, the literature referenced in this article are:

- Tickle, L. and Booth, H. (2014). The Longevity Prospects of Australian Seniors: An evaluation of forecast method and outcome. *Asia Pacific Journal of Risk and Insurance* (forthcoming).
- Li J. 2014. A quantitative comparison of simulation strategies for mortality projection. *Annals of Actuarial Science* (forthcoming).

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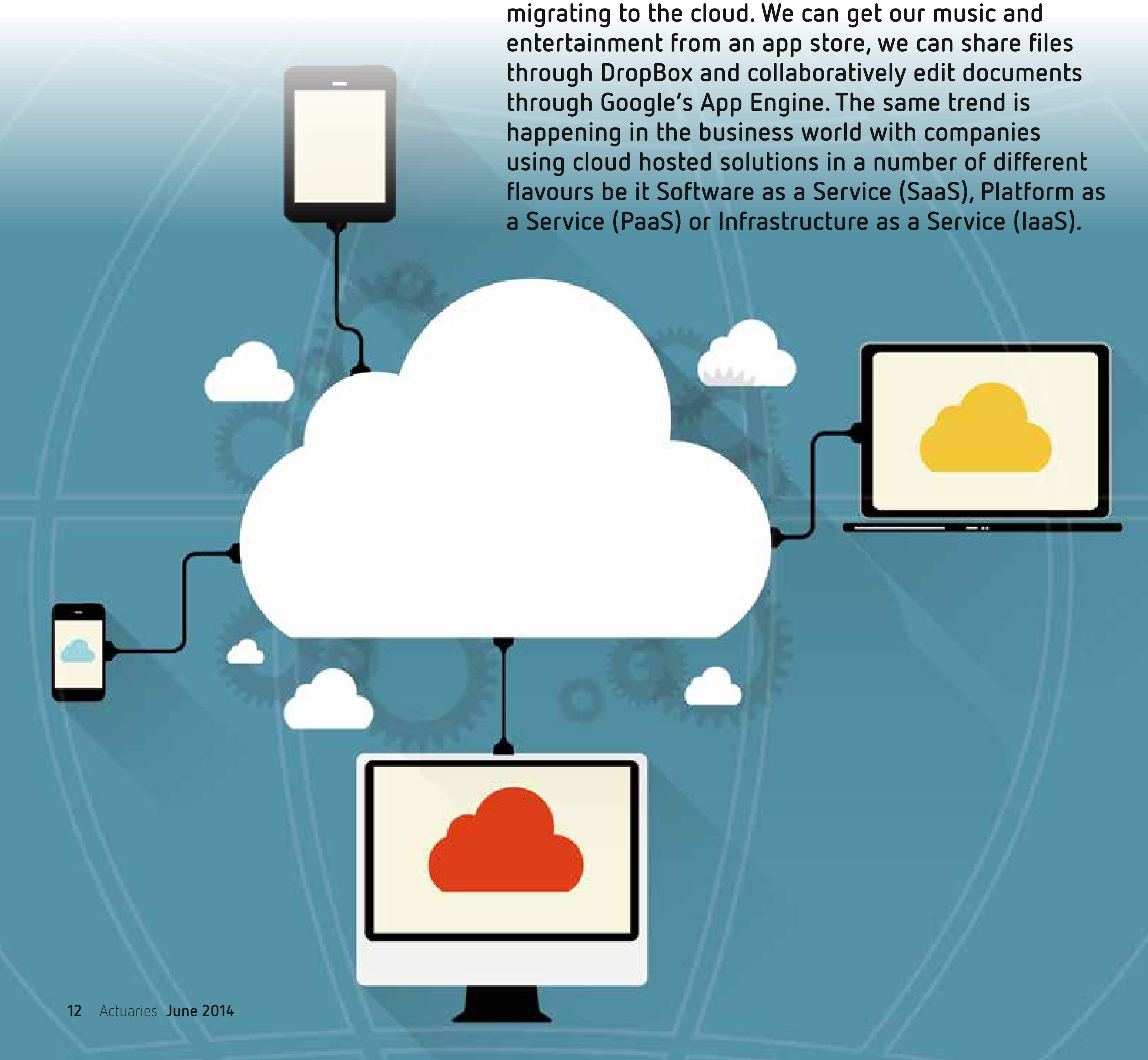
CAT Modelling in the Cloud Era

These days more and more of our digital lives are migrating to the cloud. We can get our music and entertainment from an app store, we can share files through DropBox and collaboratively edit documents through Google's App Engine. The same trend is happening in the business world with companies using cloud hosted solutions in a number of different flavours be it Software as a Service (SaaS), Platform as a Service (PaaS) or Infrastructure as a Service (IaaS).



> **Since data is now housed externally, we have the usual concerns of moving to the cloud: making sure we are comfortable with the level of security provided and being confident that the system will be always available when we need it.**

This wave is now about to break over the remote coastline of the CAT modelling industry. Conflicting forces are driving this wave. On the one hand we have rising computational requirements required for today's increasingly complex and detailed modelling. At the same time, regulators, APRA included, are demanding a deeper understanding of model assumptions and results, and this, in turn, drives a need for more frequent and faster model runs.

Cloud-based CAT modelling solutions are beginning to emerge to satisfy this need. AIR Worldwide is promoting their new Touchstone platform as being able to be, at a company's discretion, either cloud or locally based. A new initiative from the London-based start-up, Oasis (www.oasislmf.org) is also creating software that may be local or cloud hosted. The primary objective of Oasis is to create an open source framework and associated community around which it is much easier to develop and share models. Adopters are free to deploy the framework as they see fit.

The most far-reaching and ambitious initiative is that of market leader RMS' cloud-only RMS(one) platform (www.rms.com). Perhaps even more significantly RMS has decided that their platform, although proprietary, will also be able to host models from elsewhere, be they developed in-house by clients or from other third parties like Risk Frontiers. The goal is to allow users to develop a view of risk that incorporates more perspectives than just those of RMS.

If a company would like to employ Risk Frontiers' models on such a platform, it is simply a matter of enabling it for them, in much the same way apps are made instantly available from a smartphone's app store.

Risk Frontiers has decided to make our initial foray into the CSAT modelling cloud space by releasing our current suite of five Australian loss models (Tropical Cyclone, Earthquake, Hail, Bushfire and Flood) on RMS(one). In what follows we take a deeper dive into the RMS platform and how our integration efforts are proceeding.

Since RMS(one) is a cloud-only platform let's consider some of the consequences of moving CAT modelling to the cloud. Obviously it means exposures and analysis results are now stored in the cloud and there is some cost and effort involved in setting that process up and then some inertia if you were to consider moving to another platform. There may also be company policy hurdles governing where data may be physically stored. If exposure data is detailed enough to be personally identifiable, some jurisdictions have laws governing how and where such data is stored.

Since data is now housed externally, we also have the usual concerns when moving to the cloud: We need to make sure we are comfortable with the level of security provided both for authentication – knowing who the user is and that they are who they say they are – and authorisation – allowing different levels of access for different users. We also need to be happy that the system will be always available when we need it.

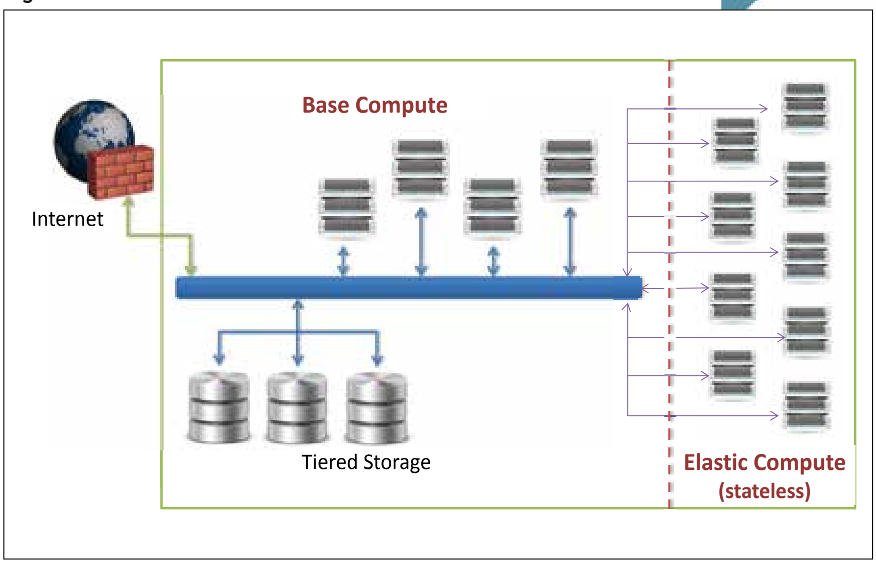
The triplet of concerns – privacy, security and availability – and the reputational risk that this entails when RMS subsumes the housing of client data means that they are taking them very seriously indeed. They have in fact decided that publicly available cloud infrastructure cannot guarantee these concerns to a sufficient level and have instead decided to build their own data-centres from scratch – a private cloud in other words.

The data centres are located in physically hardened tier three facilities meaning all systems have redundancy so there is no single point of failure, and the facility downtime is guaranteed to be less than 1.6 hours per year.

All data is encrypted at rest – that is when it is stored in the data centre and as it travels down the wire.

A graphical representation of the data centre (Figure 1) shows some features of the private cloud infrastructure that RMS has built.

Figure 1



> A cloud infrastructure means the user experience can be extended to a very wide range of devices that are immediately accessible.

The diagram also shows what happens during busy times, for example 1/1 or 1/7 renewals. RMS has modelled the compute requirements and seen that to accommodate the possible peak demand, there should be a mechanism to draw extra compute capacity from the public cloud.

A cloud infrastructure also means the user experience can be extended to a very wide range of devices be they tablet, smart phones or conventional desktops (see Figure 2).

The complete RMS(one) technology stack looks something like that shown in Figure 3. At the base level we have the physical RMS private cloud infrastructure. Built on top of that is a system dubbed the analytics operating system (AoS), which takes care of core tasks, the essential systems for allowing the storing of exposure data, running models and apps, and so on. Above that lies the APIs for the client environment that allows access to models, data and apps.

In a similar vein there are the APIs that allow third parties to provide models, data and apps on the platform. This is where Risk Frontiers comes in as the first third party model provider on RMS(one).

It is expected that the open nature of the APIs and Model Development Kit (or MDK– a bundle of APIs, test projects and tools with a specific model development focus) will generate a diverse ecosystem surrounding the platform. A few of the possibilities that are enabled by the APIs for both end-users and third party developers alike, enable you to:

- develop models and make them available to the industry at large – just as Risk Frontiers is doing;
- develop your own internal models available only to your company. In this respect, MunichRe announced last year that they will be transitioning all their internal models onto RMS(one);
- extend the User Interface by making custom 'widgets';
- use RMS widgets in your own apps – create mashups in other words; and
- deeply integrate your upstream and downstream in-house IT systems.

RMS is now very explicitly nurturing this emerging ecosystem, with an in-house team devoted to the endeavour. The goal is the kind of richness seen in say the smart phone app stores that make them such a compelling product to buy into.

Figure 4 gives a view of the model development process showing how independence is maintained technically. Risk Frontiers still designs, codes and maintains our models and data privately and independently of RMS; we only interact with the RMS(one) platform through publicly defined APIs. We obtain exposures from the platform through the Exposure Data Service APIs and provide ground up losses back to the platform with a further set of APIs.

Figure 2: Accessing RMS(one) only occurs through secure APIs using HTML5. This allows access by a wide range of devices.

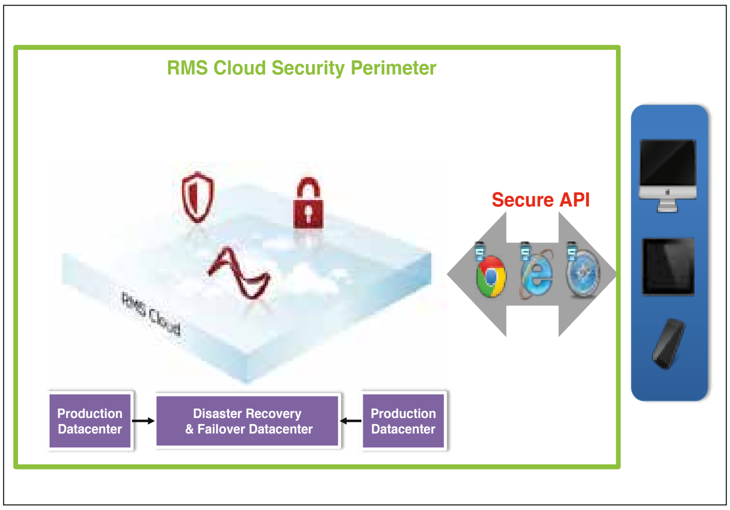


Figure 3: The RMS(one) technology stack.

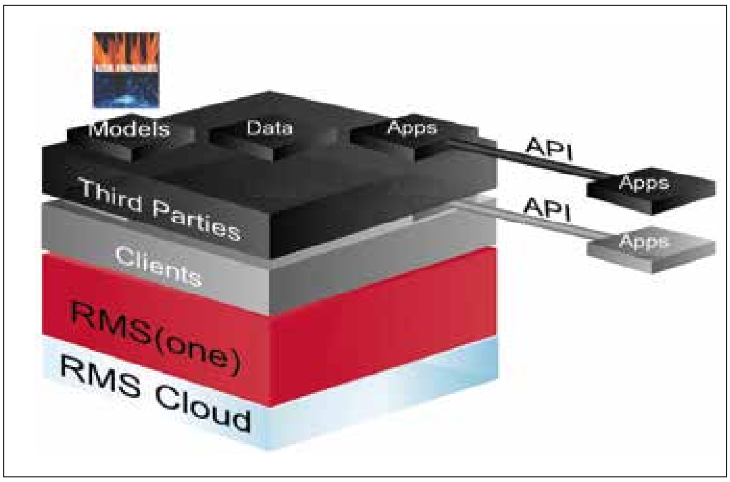
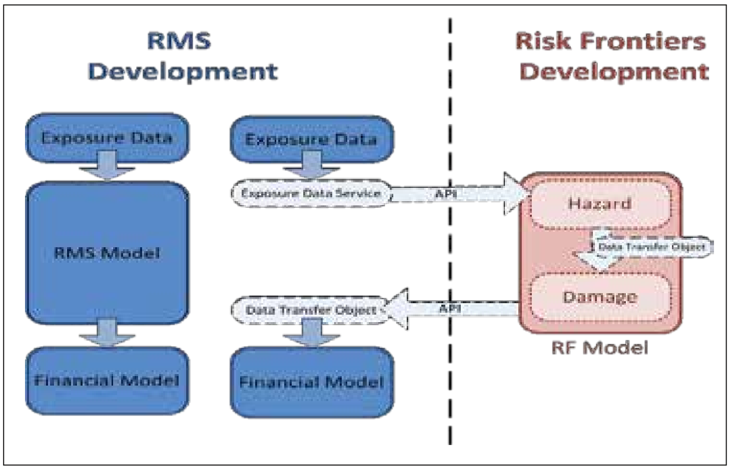
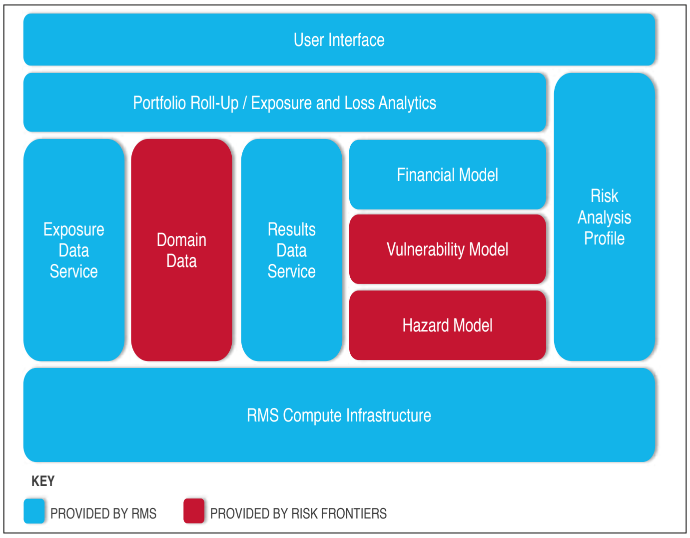


Figure 4: Diagram showing how independence is maintained in the development process through the use of APIs and thus how IP remains within both companies' respective silos.



The platform has also been designed with modularity in mind. Different third parties may elect to implement different kinds of modules depending on their particular strengths.

Figure 5: Modules implemented by Risk Frontiers to be able to present models on RMS(one). Other companies may choose to implement a different set of modules.



With a cloud based infrastructure, the sharing of views of risk becomes much easier. Once an analysis has been completed, because all data is already in the cloud, it is no longer necessary to bundle up multi-gigabyte packages of exposures and results. Sharing results with partners, clients, regulators and so on becomes as simple as sharing a link.

A CAT model's raison d'être is to provide a synthetic catalogue of plausible events in sufficient number that when combined with a portfolio of exposures the user can derive exceedance loss statistics with reasonable confidence. Depending on the peril being modelled each catalogue will have quite different characteristics in the locations an event would impact, and how the events are distributed in time. It goes without saying that it is therefore important to understand the various model assumptions and what they cover – a point that APRA wishes to reinforce with their current regulatory changes.

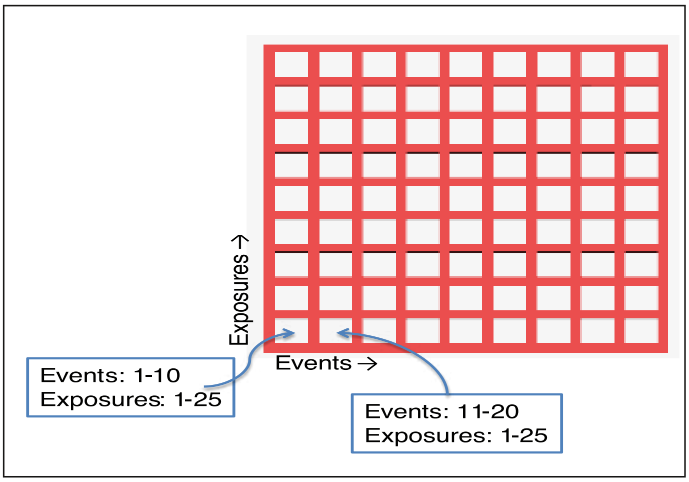
Risk Frontiers' current crop of models generally have a catalogue spanning a simulation time period of 50,000 years, which can mean hundreds of thousands or even millions of events in a catalogue. Each event covers many multiple locations, and so combining this with a portfolio of exposures that may extend to tens of thousands, hundreds of thousands or even more individual risks explains why this is a data and computationally expensive exercise.

However the problem can be divided into many smaller sub-problems and we can calculate each sub-problem in parallel: we can naturally partition a model analysis by the events in our catalogue and the exposures in our portfolio – this is shown in graphical form in Figure 6.

Moving IT infrastructure to the cloud promises some big benefits that promote a more agile business. First there are those benefits that are true in general of cloud migration: You are freed from interacting with the IT upgrade cycle – you need not own and

Of particular importance in the CAT modelling arena is scalability; the ease with which the amount of computing power available may be dialled up or down to cover peak times or greater user demand is a huge positive.

Figure 6: Graphical representation of dividing a CAT model analysis into smaller independent sub-analyses by partitioning the input exposures and the set of events that impact them.



maintain the hardware required, nor worry whether your current servers support the latest software version. The data centre will always have the latest version of the software running on up-to date hardware. Also, as we have seen, in general the system is much more accessible – requiring only that a device has a web browser to access the system. And of particular importance in the CAT modelling arena is scalability; the ease with which the amount of computing power available may be dialled up or down to cover peak times or greater user demand is a huge positive.

One of course has to be careful of the usage costs for a cloud platform but they have to be compared with capital heavy costs of maintaining in-house IT infrastructure and so this needs to be analysed in a total cost of ownership exercise. Nevertheless it would seem to be a question of when not if that CAT modelling becomes another industry to live its life in the cloud.

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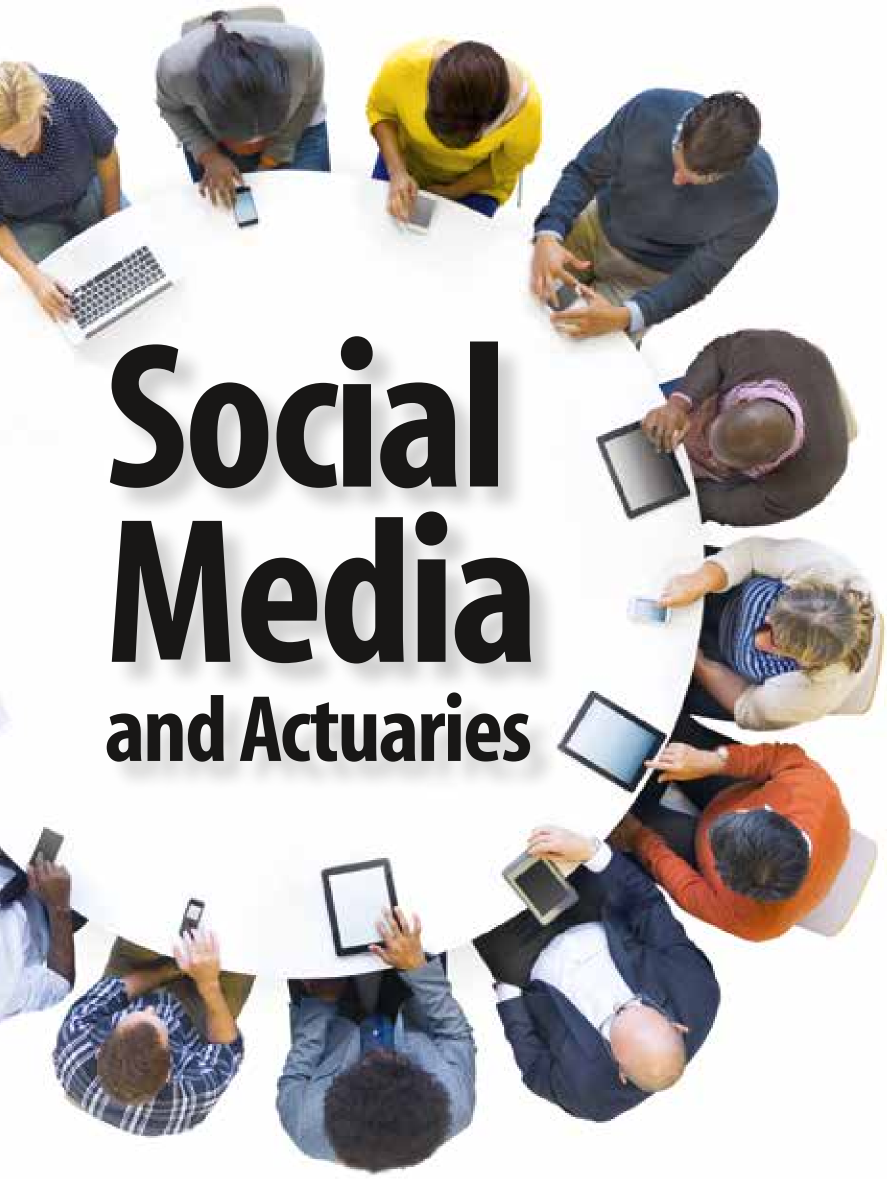


Social Media and Actuaries

12 months ago there was a report in this magazine of a presentation I gave to the Young Actuaries Program on why actuaries should care about social media. 12 months is a long time in the digital world and we have seen some interesting developments in the social media landscape. In just one year, between 2012 and 2013, the total global social media audience increased by an estimated 18 per cent, from 1.47 billion to 1.73 billion.

The purpose of this article is not to provide a 'How to' piece. There are plenty of them out there. This article is to show you why social media is much more than "Look what I had for breakfast", why you should take notice of social media, and to whet your appetite to learn more.

There is no great mystery or magic about social media – it just brings us new ways to be social. Humans are social beings so it is no wonder we embrace new ways to communicate and connect so enthusiastically.

There are two dimensions to social media that an actuary should consider: personal and business. For the individual, social media is about networking, collaborating, learning, sharing… and having fun. The main thing to remember is that social media is about relationships and, as in real life, relationships take time and effort. The best way to get more out of social media is to make it about conversations.

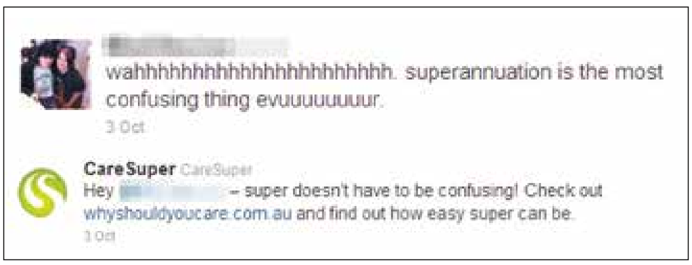
For businesses, social media has applications both internally and externally. Corporate social media platforms such as Yammer are facilitating internal collaboration and helping to break down silos in some of the biggest companies. Many businesses use social media very successfully to attract and retain staff.

It is important to have a social media strategy that is integrated in the overall corporate strategy. Not having a social media strategy is a strategy, just not a very good one. As with any strategy, it starts with defining objectives – what are you trying to achieve. This applies to the company and also to individuals.

The most obvious uses of social media by business are branding and advertising. Even if you do not have a presence or voice on social media, your customers and potential customers will. Many people use social media to let the world know about bad consumer experiences. Social media gives the consumer enormous power. You cannot limit this but you can harness this.

Many businesses are developing social media for customer service and whilst there are many compliance and regulatory issues in the financial services industry, it is happening there as well. The only way to do this effectively is to be monitoring social media activity that mentions your brands. If you're not convinced of the importance of this, check out www.servicerage.com and see what people are saying.

Here are a few examples of superannuation funds using Twitter for customer service.



> **"Listen, Connect, Share and Engage – 4 ways to be successful on social media."** – Jeff Pulver, Chairman Zula

Many companies are learning to actively listen to social media, collect social data and insights, and act upon these. At least two of Australia's big banks have social media command centres to learn, in real-time, what their customers are saying about their products and services – with the overarching intention of improving existing offerings and co-creating new ones as a lever for customer engagement, retention and acquisition.

CBA is tracking every single on-line conversation about the Bank in real-time and responding to it, answering requests and talking to customers. It recently revealed that it has made nearly $1 million in revenue by intercepting potential customers' life events on Twitter.

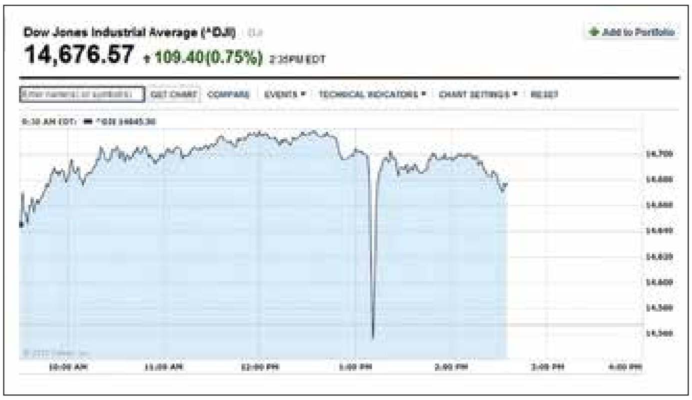
NAB is using its social media command centre to help acquire, retain and develop millions of dollars worth of business, and is proving to be particularly attractive for winning business banking customers.

All this social media data can be very valuable to insurance companies for both underwriting and claims management. Consider a recent case of a woman in Florida who told her car insurer that a hit-and-run had damaged her car. The woman then told her friends on Facebook that her daughter had caused the accident. The insurer's investigators searched social media, found the post, declined the claim and the woman was convicted of filing a fraudulent claim. Yes, a disturbing story in many ways but a sign of things to come.

Another application of social media data analysis is in the field of investing. An extreme example is the so-called 'Hash Crash' in April 2013. Someone hacked Associated Press' Twitter account and published a tweet suggesting that the White House had been hit by explosions.

The Associated Press tweet…

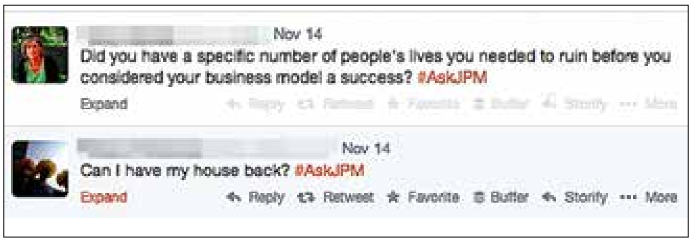
… and the Dow Jones reaction was a two-minute, 140-point drop.



Both Thomson Reuters and Bloomberg have started incorporating sentiment analysis obtained from social media data in their analysis of companies believing that arbitrage opportunities exist in scrapping data from tweeter conversations about health and the future of companies.

Social media is not risk free. The Associated Press example shows that it is important to realise that social media amplifies in both desirable and undesirable ways. In December 2013, Natwest suffered a couple of computer fails in a short period and customers used social media to vent their anger, often with considerable wit.

There are a number of examples of companies trying to use social media for a marketing campaign only to see it hijacked. When JPMorgan asked customers to tweet questions to the Vice Chairman they didn't expect this…



Don't let these examples put you off. Rather, they are reminders why businesses need to have a social media strategy and understand how to use it.

Social media is here to stay. We all need to understand its uses and misuses as individuals and businesses. Deloitte's 2013 Globalisation Survey of 423 global executives found that 61 per cent of these executives expect social media to become much more or somewhat more important to their company over the next three years.

I'll leave you with the words of Giam Swiegers, our CEO at Deloitte Australia: "You won't be able to be an effective leader in the future if you don't know how to use social media."

> **"Social is not a place for a hard sell, it's a place to build trust and credibility."** – Julio Viskovich, Author of *Social Selling: How to find Buying Signals on Social Media.*

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Football World Cup 2014 Predictions

> And the winner is...

With Manchester City taking their second English Premier League title in three years, we are now looking forward to 12 June and a month of sleep deprivation as we try to keep up with the Football World Cup. The question on everybody's mind is will this be win number six for Brazil?

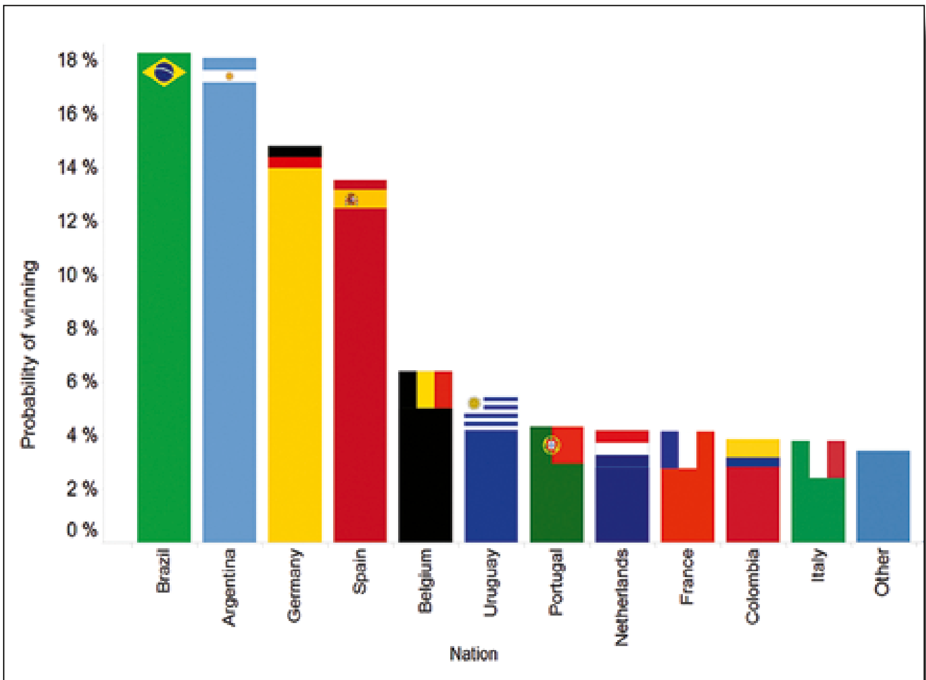
For a while now, a bunch of us have been using our modelling super powers for the very serious business of sports prediction. For many years we've been running a 'beat the geek' footy tipping competition for both the AFL and NRL, where our models have regularly beaten humans.

Following our success in predicting Spain as the tournament victors in 2010, New Zealand as winners of the 2011 Rugby World Cup, and Fiorente taking the 2013 Melbourne Cup, we have again turned our modelling talents to forecasting this year's FWC winner.

CONTINENTAL ADVANTAGE

A quick peek into the history books shows that every time the World Cup has been hosted in the Americas (four times in South America, two in Mexico and once in the USA) a South American team has won. Similarly, only one non-European team has won any of the ten tournaments on European soil (Brazil in 1958).

You wouldn't bet against this continental advantage, but it's impossible to pick a winner based on this alone, given that Brazil, Colombia, Uruguay and Argentina are all in the top 10 FIFA world rankings.



ODDS

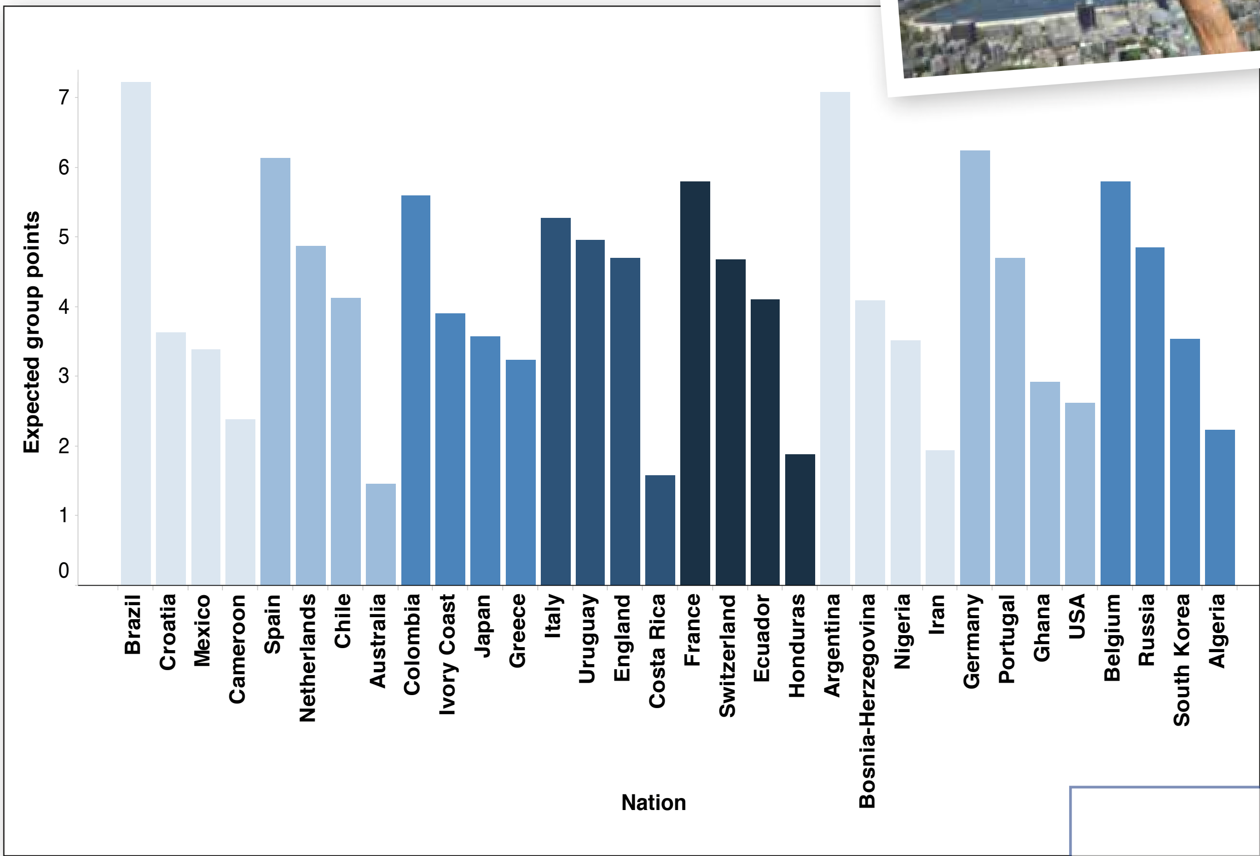
The bookies have this year's World Cup as a four-way tussle between Brazil, Argentina, Germany and Spain. A large gap separates Spain from the next favourite, Belgium. If everything follows the pre-match odds through the group stages, the two semi-finals will be Brazil vs Germany and Argentina vs Spain.

SENTIMENT BIAS

Betting odds aren't always the best predictors of final winners because they are often distorted by sentiment bias, people betting on their favourite team regardless of their actual chances of winning.

Numerous studies have found sentiment bias influences sports betting, with Facebook 'Likes' being one of the more successful measures of team popularity[1]. Brazil has 3.5 million Facebook 'Likes', whereas Argentina has only 0.5 million.

Although sentiment bias clearly plays a role, the actual size of its impact on



... BRAZIL!

odds is difficult to measure reliably. Our models usually use previous odds and actual outcomes to trim the sentiment bias and get a more accurate prediction. However, international sides don't meet regularly, often don't take 'friendly' matches seriously, and teams can radically change, meaning there's a lack of hard reliable data. This contrasts with AFL and NRL matches, where we have data coming out of our ears, and successful models to boot.

THE VERDICT

Our model predicts a final between Brazil and Argentina, but choosing a winner is a close run thing with their head-to-head history standing at 36 for Argentina, 35 for Brazil and 24 draws. We've slimmed Brazil's chances of winning by adjusting for sentiment bias, but that's still not quite enough to knock them off the top.

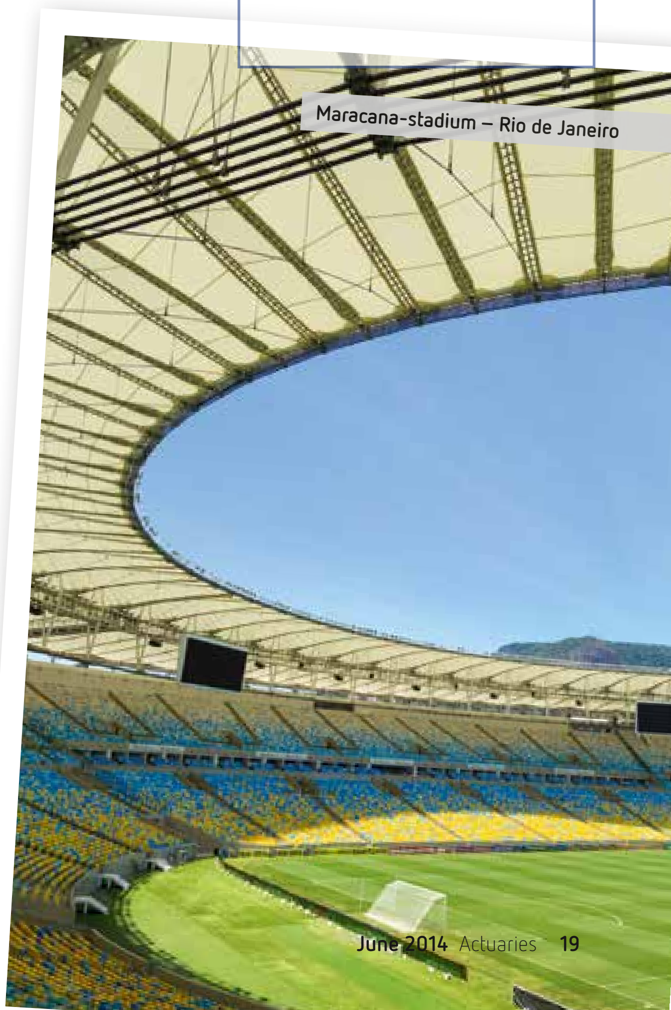
DARK HORSE

Uruguay is our pick for the dark horse of the competition. We have this two-time previous winner in sixth position.

WHAT ABOUT THE SOCCEROOS?

Sadly, our model says there is only a 10 per cent probability the Socceroos will make it out of the group stage, most likely without any wins. If they do make it out, their next match would be against Brazil, unlikely to go well. As for winning the tournament, we're going to defer to our own sentiment bias and say go the Socceroos! A

1 See http://www.be.wvu.edu/phd_economics/pdf/13-07.pdf


Maracana-stadium – Rio de Janeiro

Financial Services Forum

Scoring Goals in a Changing World

5-6 May 2014 • Hilton Sydney

Keynote Speaker: Glenn McGrath

The recent highly successful Financial Services Forum held in Sydney, was marked by highly informative and insightful sessions, stimulating debate and valuable industry networking.

PLENARY 1 – LEADERSHIP

The 2014 Financial Services Forum served up some fine deliveries by former Australian cricketer and bowling legend Glenn McGrath. Glenn's views on leadership in the context of changing team dynamics and the adaptable styles of different captains under which he served opened a window into life during Australian cricket's heyday and provided food for thought for members of the audience. From a personal perspective, Glenn's reflection on what it takes to be successful was summed up by his comment that "if you want to be like everyone else, do what everyone else does".

Chris Cuffe further developed these concepts, reflecting on his time with Colonial First State and subsequent roles within the financial services industry – including his more recent philanthropic endeavours. The parallels between Chris and Glenn highlighted the common traits and acute awareness of their own personality dynamics (both positive and negative) that result in effective leadership. Chris left the audience members to reflect on whether they would define themselves as someone who makes things happen, watches what happens or wonders what happens.

PLENARY 2 – THE ECONOMIC AND INVESTMENT ENVIRONMENT

Plenary 2 featured an all-female panel with the line-up comprising Carol Austin (Contango Asset Management Limited), Deborah Ralston (Australian Centre for Financial Studies, Monash University) and Susan Thorp (Finance Discipline Group, UTS Business School) and focused on the many issues facing retirees in the post-retirement phase. The plenary sought to:

- set the scene for today's retirees from an investment and economic perspective;
- examine the various risks/benefits that retirees face in the post-retirement phase; and
- tie the first two themes together by examining the behavioural issues of retirees.

Plenary 1: Chris Cuffe

Plenary 2: (B-F-L-R), Susan Thorp, Deborah Ralston, Carol Austin and Naomi Edwards

Carol began by setting the scene about the world today and the framework within which we invest. She stated that we need to be mindful of the US economy when making investment decisions and that there is a headwind for the US economy that exposes it to cyclical downturns. Through this lens, the future picture for retirees – certainly in the short to medium term – looks grim with 0% interest rates in the US, bond yields at historical lows and no prospect of an immediate equity rally. Market volatility is going to be an ongoing feature of financial markets over the next three to five years – the ride will be bumpy.

She also noted that government policy, the commitment to it and feasibility are all factors that should be taken into account when analysing the economy.

Deborah's brief was to discuss the risks associated with investment in the post-retirement phase and outline potential options that could be offered – not an easy brief! She began by noting that Australia has an excellent retirement system but that it falls down in the post-retirement space. In doing so, she introduced the concept of the 'retirement trilemma', in particular the need to have:

- access to good returns (with investment choice);
- protection from risk (market and longevity); and
- access to capital (both before and after death).

Another concept introduced was the maximising of 'terminal wealth' (assets at retirement), which was not easy when considering the risks posed by sequencing risk. Indeed, each individual's position will not only depend on terminal wealth of superannuation, access to the age pension and private savings (including home ownership), but also health.

Because of this, Deborah argued that there is no perfect solution as everyone's retirement needs will be different. This suggests an increasing demand for tailored solutions. To that end, there is a need for a product suite to manage:

- longevity risk – e.g. through annuities, pooled mortality risk etc.;
- liquidity risk – via equity release products;
- inflation risk – via inflation linked bonds; and
- health risk.

Susan Thorp capped the session off with what needs to be done to communicate effectively with pre and post-retirees. She shared some research which showed that younger people are far more pessimistic about their survival prospects when compared to those who are actually in retirement. As a result, people tend to underestimate retirement adequacy and plan badly. There is also a general lack of awareness of retirement products available and little understanding of the regulatory retirement governing such products.

The lack of awareness in retirement products was quite stark: Susan's research showed that just under half of people had heard of an account-based pension (formerly known as allocated pensions) and less (just over a third) had heard of lifetime annuity products. Only one fifth of people surveyed understood that lifetime annuities offered a guaranteed income level!

Susan closed by encouraging the industry to talk about retirement adequacy in terms of income streams rather than wealth accumulation. People also need assistance to understand their options and the crucial information that will impact their retirement savings (particularly longevity!).

The Plenary concluded with a lively Q&A session ably facilitated by Naomi Edwards.

PLENARY 3 – FINANCIAL SYSTEM INQUIRY

The final session on day one was an interesting discussion on the Financial System Inquiry. Ian Harper provided an overview of the philosophies underpinning previous inquiries and flagged the importance of balancing competition with stability, and raised the danger of risks being forced elsewhere if the industry is required to hold too much capital. Rob Whelan raised the issue of affordability as 'big data' and other technological advances enable more accurate pricing of risk. Steven Münchenberg outlined the four main areas of the ABA submission, which included the transformational impact technology is having on the banking industry and the challenge regulating the industry in this uncertain environment. John Brogden

Plenary 3: B-F – L-R, Ian Harper, John Brogden, Rob Whelan, Naomi Edwards and Steven Münchenberg

wrapped up the session by discussing the purpose and future of superannuation, including how the flow of superannuation funds may change in the future via home loan securitisation with banks and the increase in funds invested overseas. Although there is no burning problem for the Inquiry to fix, there are plenty of interesting issues and challenges for the Inquiry to consider.

PLENARY 4 – ENTERPRISE RISK MANAGEMENT

The ERM Plenary Session was held bright and early on the Tuesday morning with a diverse range of industries and perspectives.

Qantas pilot and Actuary Mark Thorpe shared his view on risk from 30,000 feet. Key messages were: "Safety before Schedule" and how embedded with pride this is at Qantas; how real the inherent risk is but how it has been increasingly mitigated over

Plenary 4: B-F – L-R, Naomi Edwards, David Parsons, Mark Thorpe and Jacqui Colwell

Plenary 5: B-F – L-R, Tim Trumper, Norman Swan, Ramneek Gupta, Naomi Edwards and Duncan West

the 103 years of flight to the extent that commercial airline transport is an incredibly safe form of transport per km travelled; how this is due in large part to learning from experience; building in reliability and redundancy with systems; benefiting from technological advances to improve automation and instrumentation; and the importance of regular training and checking including simulating emergencies.

Jacqui Colwell, Chief Risk Officer of Personal Banking at NAB brought us back to earth with the parallel that banks are about keeping customer's money safe. Jacqui explored past failing in risk culture at banks including Barclays, JP Morgan, HBOS and RBS, looked at what is different post GFC and discussed what's been learned and adopted by banks on ERM. The biggest changes have been around greater emphasis on setting and implementing risk appetite, risk management being integral to the strategy, and realising that good risk management is not about risk avoidance – it's about taking opportunities with better risk controls. Jacqui also explored the practical outworkings of current risks in banking. A major one is the growing demand from customers for digital access as smartphone use grows by over 50% p.a.

David Parsons, Manager of Sydney Water's Emergency Management Program illustrated how organisational culture and beliefs create risks. He shared many examples of disasters where this happened including the London Underground, the Challenger and Columbia shuttle explosions, Hurricane Katrina and Hillsborough Stadium. The key messages were to ensure your organisation makes decisions based on its values rather than the literal interpretation of its rules and that you need to understand how decisions by individuals might be taken in a group and / or high stress environment. One outcome is a preference for strong procedural guidelines rather than absolutely strict rules, to facilitate a sensible risk decision at a time of great stress and to reduce the likelihood of a dangerous outcome.

PLENARY 5 – DIGITAL ECONOMY AND BIG DATA

The conference concluded with a 'wider fields' view of the digital economy and big data. Tim Trumper opened our minds to how the revolution in analytics and insights is changing our world, while Norman Swan probed the implications for our health system and society. Ramneek Gupta and Duncan West explored key practical considerations and hurdles when transitioning to a data centric culture, and considered the role that the actuarial profession could / should play.

Caroline Bennet, Adam Fusca and Kaise Stephan

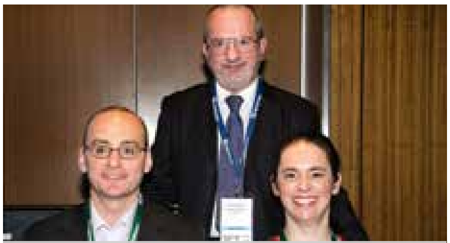
Susan Thorp presenting

Event entertainment


Andrew Gale and Jenny Lyon


Using FSFConnect


Gigi Cheung, Matt Noyce and Jenny Liu


Peter Larsen, John Evans and Diane Somerville

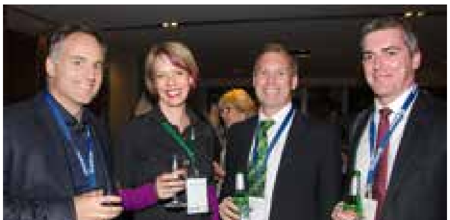

Buffet lunch


Paul Schroder and Nicolette Rubinsztein


Bozenna Hinton, Richard Yee


Richard Lyon, Eilis Hurley and Hoa Bui


Anthony Asher and Tracy Wilcox


Mark Griffiths, Melinda Howes, Blair Nicholls and Andy Brown


Anthony Bice, Megan Beer, Sean McGing and Alex Stitt

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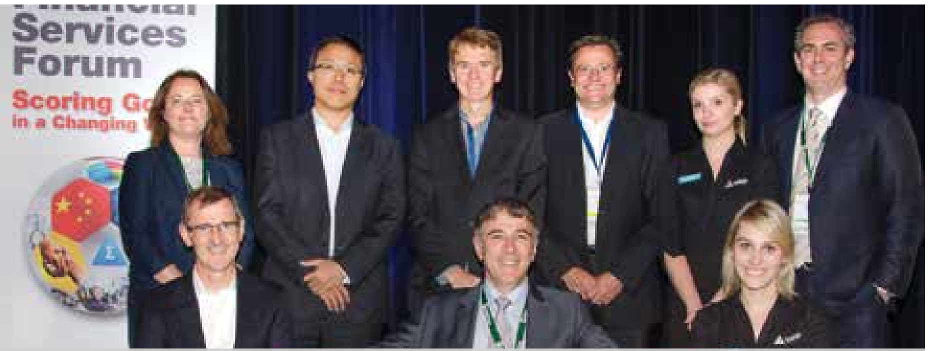
Organising Committee: B-F – L-R, Elayne Grace, Charles Wu, Paul Nuttall, Wade Tubman, Sarah Gibson, Wade Matterson, Sean McGing, Jeff Warner, Emma Simonson (absent: Chris Johnson, Simon Ho)

CONCURRENT SESSIONS

There were some great concurrent sessions over the two days and many thanks should go to the presenters and the various Chairs who were involved in these. On the first day, sessions focused on the latest developments in superannuation and investments, including solving the post-retirement challenge, opportunities for Australia in the 'Asian Century' and what proved to be a fascinating debate on retail versus industry funds 'in a MySuper world'. Insurance was also well represented with topics covering risk culture, capital management and some well-timed reflection on the recent issues the industry has been facing and an exploration of the potential paths forward.

There were more highly informative and insightful concurrent sessions on the second day including those on the emerging fields of risk management and big data, and how organisations are utilising the latest approaches to better understand their customers and develop innovative business models. Sovereign risk, operational risk modelling and the lessons claims management teams should take from social workers were also covered.

FSF2014 was a great success. The Organising Committee extends sincere thanks to our sponsors, supporting partners and the Institute. A


Cocktail Party


Prizewinner: Richard Land


YAP representatives: L-R, Srikar Velivela, Sam Fung, Kitty Leung, Kostia Lubarsky, Stephanie Wong and Yang Lam

ORGANISING COMMITTEE

Wade Matterson (Convenor) – *Milliman*
Simon Ho – *MLC*
Chris Johnson – *Trinary Consulting*
Wade Tubman – *Quantium*
Paul Nuttall – *CBA*
Sean McGing – *McGing Advisory*
Jeff Warner – *AustralianSuper*
Charles Wu – *CFA Societies Australia*
Elayne Grace – *Actuaries Institute*
Emma Simonson – *Actuaries Institute*
Sarah Gibson – *Actuaries Institute*


HQ Events Team: L-R, Lisa Pronesti, Emma Simonson, Sarah Gibson, Hayley Schultz and Elizabeth Gemmell

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FSAA

Rashi Bansal
rashi.bansal@btfinancialgroup.com

Rashi Bansal

Title... Chief Actuary

Organisation... BT Financial Group, Westpac

Summarise yourself in one sentence... Enjoys raising a family and achieving the best in her career at the same time

My interesting/quirky hobbies... Making character cakes and costumes for kids

My favourite energetic pursuit... I am not a very sporty person, but I enjoy going for walks or cycling with my family

The sport I most like to watch... Tennis

The last book I read... *The Life of Pi* over the Christmas holidays. I spend most of my time reading kids books to my daughters otherwise

My favourite artist / album / film... I am a huge Bollywood movies fan

The person I'd most like to cook for... I love to cook for my family and friends, but I wouldn't say no at the opportunity to cook for a famous Bollywood star

I'm most passionate about... My two daughters (10 and 7) who make me put life into perspective

What gets my goat... People who are not genuine

I'd like to be brave enough to... Give up communications including my iPhone and iPad for a month

Four words that sum me up... Responsible, Hardworking, Learner, Family-orientated

What I wanted to be when I grew up... As a child I wanted to be a dentist. Sounds awful now that I think about it again

Why and how I became an actuary... I wasn't really sure what I wanted to do at university other than something involving economics and maths. So I enrolled in actuarial studies as it sounded interesting. Some friends also warned me that it was a difficult course and I thought I was up for the challenge

Where I studied to become an actuary and qualifications obtained... Bachelor of Commerce, Macquarie University

My work history... I started as a graduate in super consulting for a year at Mercer. I then joined PWC consulting where I spent nearly 10 years working predominately in GI. I moved to BT five years ago to widen my experience in the corporate world. I started up leading the GI valuation team, and quickly expanded my role to take on LMI responsibilities. In the past year I have taken on the role as Chief Actuary, heading up the Life, GI and Capital teams. I'm also the Appointed Actuary for both GI and LMI

What I find most interesting about my current role... The breadth of experience and opportunities that are available to me. I am currently involved in general, lenders mortgage and life insurance

My role's greatest challenges... In my current role it is managing multiple stakeholders all with differing expectations and motivations

Who has been the biggest influence on my career (and why)... From a professional sense, I have been very lucky to work with some amazing role models. Most recently my mentor Tim Andrews has been the biggest influence on my career. From a personal sense my husband has had a huge influence

My proudest career achievement to date is... Adapting to different situations and learning from them. Juggling a rewarding career and also running a family at the same time is also something I am very proud of

Rashi and her daughters

10 years from now, I will be... Still having fun and trying new challenges

When I retire, my legacy will be... Promoting diversity and gender balance at work

Why I'm proud to be an actuary... Because of the insight we bring to such a wide range of areas

The most valuable skill an actuary can possess is... Explaining all the analytical work we do in simple terms to non-actuarial stakeholders

If I were President of the Institute, one thing I would improve is... Marketing the value of actuaries outside traditional areas

At least once in their life, every actuary should... Try to think like a non actuary i.e. outside the square

My best advice for younger actuaries... Don't underestimate the value of networking and building relationships with colleagues

If I could travel back in time I would... Not change anything. I believe in learning from the past and putting your best foot forward

If I win the lottery, I would... Take a long holiday, travelling the world with my family

Andrew Brown
andrew@leadfirst.com.au
@Lead_First

While the *Actuaries taking the Lead* column will continue, the future format will be changing. There will be a different columnist each month from the Leadership and Career Development Committee, and you will also have the opportunity to submit an article on a topic related to leadership. Moving into the e-zine format, we will also explore and highlight many online resources relevant to members.

Leadership Themes from the Financial Services Forum: 5-6 May

The recent Financial Services Forum provided a smorgasbord of leadership wisdom to dine on. The Leadership and Career Development Committee has had a collective huddle, and identified some key leadership themes from across the two days.

In line with the *Actuaries* Magazine moving to an online e-zine, we have also attached links to some of the presentations and papers from which these leadership themes emerged. The following article provides simple morsels – to truly dine on the whole experience, visit the FSF site and explore the whole array of papers and presentations.

http://actuaries.asn.au/microsites/financial-services-forum-2014/program/papers-and-presentations

PLENARY SESSION LEADERSHIP THEMES:

CHRIS CUFFE

Take the time out to reflect
It does not have to be a regular activity nor adopt a formal method but periodic reflection is vital for self-awareness. At a minimum, the reflection time may help identify periods where there is a lack of balance in one's life, when too much time is spent "in the zone".

"Do we want a prosperous society or a great society?"
http://actuaries.asn.au/microsites/financial-services-forum-2014/program/webcasts?vidurl=//player.vimeo.com/video/95466334

IAN HARPER

Conservatism may not be good for society (GI insurers holding too much in capital, with a hearty pat on the back from the regulator).

http://actuaries.asn.au/microsites/financial-services-forum-2014/program/webcasts?vidurl=//player.vimeo.com/video/95081744

ROB WHELAN

Joining forces with cross functional areas and new technology can change the paradigm (e.g. telematics in the UK may make a previously uninsurable risk insurable – young male drivers).

http://actuaries.asn.au/microsites/financial-services-forum-2014/program/webcasts?vidurl=//player.vimeo.com/video/95081745

DAVID PARSONS

The value of Principles Based Leadership
It is important that leadership focuses on the values underlying the purpose of the activity. We must not blindly follow rules – judgment is critical. (e.g. Hillsborough, Challenger, Katrina).

The language used is also critical (e.g. smoulderings = fires sends a different message about consequence and urgency).

http://actuaries.asn.au/microsites/financial-services-forum-2014/program/webcasts?vidurl=//player.vimeo.com/video/95100012

DR NORMAN SWAN

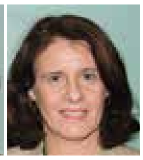
Where cause and effect are separated by time and space, data analytics opens up the possibility of connecting what were previously seen as random or independent events and seeing new patterns.
Between 23-30% of healthcare spend is waste. This means that private healthcare is missing the point to the tune of some $30bn a year. The corollary is that the profession has a major role in redesigning products so that they meet needs better.

DUNCAN WEST

Don't strive for perfection. Start with the first problem and build from there.
Every time you look at data, ask yourself the question "how can this add value?"
"See what we see" requires much greater capacity to see through the eyes of the client and communicate in the language of the client.

CONCURRENT SESSIONS:

ANTHONY ASHER AND TRACY WILCOX



Consider the role of ethics in decision making.
To create an ethical organisation there are three key requirements:

- Building in learning and feed-back loops; safe-fail tests, and allowance for error
- Recruit based on ethics and values
- Create psychological safety – safety to challenge the status quo
  http://actuaries.asn.au/Library/Events/FSF/2014/AsherWilcox2b.pdf

In complex decision-making problems, simple rules sometimes do just as well as complex solutions, if not better. (Asher & Wilcox)

Andrew Haldane, the Bank of England's executive director for financial stability compares financial regulation with a dog catching a Frisbee – keep it simple! The more complex the measurement and rules, the greater the likelihood of measurement being manipulated, and the major issues going unaddressed – in his view.

http://online.wsj.com/news/articles/SB10001424052702304858104579263190940438738

CHRIS CONDON

The profession has used its influence in becoming a 'cheer-leader' for product providers (e.g. in the retirement income space). **This leadership needs to be channeled into the broader community perspective.**

http://actuaries.asn.au/Library/Events/FSF/2014/3fRobertsPatrickCondon.mp3

PIETA DIAMANTIDIS

We are all weird. Products can no longer cater for the average consumer.

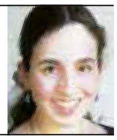
http://actuaries.asn.au/Library/Events/FSF/2014/Diamantidis5f.pdf

ANDREW GALE AND JENNY LYON

If you want to make a difference to others, find what interests you and apply yourself to that (Gale and Lyon). Have the courage to go after what is important to you.

http://actuaries.asn.au/Library/Events/FSF/2014/LyonGale6d.pdf A

Genevieve Hayes
inthemargin@actuaries.asn.au
@murderandangst



"I have discovered a truly marvellous proof of this, which this margin is too narrow to contain" – Fermat.

Ninth Mirage

It was a miserable, rainy afternoon and the Actuary and I had decided to spend it inside, playing a game of Anagrams. I would say a word, name or phrase and the Actuary would try to come up with an anagram of it. So far, he had succeeded every time.

"Albert Einstein," I said.

"Elite brain sent," replied the Actuary, without a moment's hesitation.

"Archimedes."

"Made riches."

"Nicolaus Copernicus."

"Our sun's iconic place."

"Isaac Newton."

"I want a scone."

"What about Kim Kardashian?"

The Actuary paused, and for a moment, I thought I had finally stumped him, but then he smiled and said, "I am a kind shark."

I had forgotten. The Actuary is never stumped.

"That's enough for me, for now," said the Actuary. "Why don't we swap for a while? I'll say the words and you can come up with the anagrams."

I hesitated. I had never been very good at solving anagrams.

"Come on," said the Actuary. "I won't make them too hard. I promise."

"OK," I said, reluctantly.

"Excellent. How about we start with… sycophant?"

I wrote the word down on a piece of paper and stared at it, but even after five minutes of jumbling the letters, I couldn't make anything from them. "It's no good," I said, throwing the paper down in disgust. "I can't do it."

"Yes, you can," said the Actuary. "You just need to look at it from a different angle." He picked up the paper I'd dropped and drew a grid on it, which he then filled in with letters and handed back to me.

"That looks like a Sudoku puzzle, but with letters instead of numbers," I said.

		O					T	
H	Y							S
			N					O
O	S			N	T	P		
			S		H			
P			O			A		
	T	A			C		P	
	P							
			Y				H	

"Exactly. It's a Wordoku made up of the letters of 'sycophant'. Solve this puzzle and you'll find an anagram of 'sycophant' that also doubles as a definition of it."

"That doesn't sound too bad. I hate anagrams, but Sudokus, I can handle."

"Well if that's the way you feel, then I can make it a little harder for you."

"No, no. This'll be fine," I said. In future, I must learn to keep my big mouth shut.

For your chance to win a $50 book voucher, solve the Wordoku and email your solution to: inthemargin@actuaries.asn.au.

THE ACTUARY'S COMPANIONS

***ACTUARIES* 188 SOLUTION**

In Actuaries 188 you were given a logic puzzle and asked to determine the names of each of the Actuary's five previous companions, the year in which the Actuary met each of them, their home city or planet and their occupation. The correct combinations are as follows:

***Gabrielle** – 1477 AD – Mars – Rock Star*
***Jack** – 1985 AD – Tralfamadore – Soldier*
***Marty** – 5032 AD – London – Student*
***Rose** – 62 BC – Los Angeles – Time Agent*
***Sam** – 2525 AD – Athens – Detective*

18 correct answers were submitted. The winner of this month's prize, selected randomly from among the correct entries, was **Robert Schwerkolt**, who will receive a $50 book voucher.

Also, in last month's issue, the winner of the March puzzle prize was accidentally omitted. Five correct answers were submitted in March, and the winner of the March prize, who will also receive a $50 book voucher, was **Iain Bulcraig**. My deepest apologies for the oversight.

2014 EAAC TAIPEI TAIWAN

The 18th East Asian Actuarial Conference (18th EAAC) is organised by the Actuarial Institute of Chinese Taipei (AICT) and will take place in Taipei from 12 – 15 October, 2014.

18th East Asian Actuarial Conference

With the theme of ***Risk, Challenges and Opportunities***, the 18th EAAC provides a forum for speakers to share their views on risks and challenges across Life Insurance, General Insurance, Health Insurance, Risk Management, Pension and Social Security and also explore opportunities, especially in Asian markets.

An excellent program has been developed with an estimated 36 parallel sessions being run for delegates to choose topics they are interested in. Networking opportunities are numerous including the Welcome Reception and Farewell Dinner with excellent food and entertainment.

There is also a great social program with six city tours to explore Taipei's beauty, learn how to make Xiao Long Bao (dumplings) or experience the Tai Chi in Taipei! A

Find out more and register now www.actuariesasia.org

Merry Tang
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Jennifer Dang
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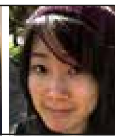


General Insurance Practice Committee (GIPC)

PHOTO: *Back L to R:* David Koob, Kaise Stephan, Tim Clark, Andrew Huszczo, Scott Collings and Andy White
Front L to R: Elayne Grace, Richard Yee, Susan Ley, Robert Thomson and Samantha Fuller
Absent: Arie van den Berg, Jennifer Dang, David Gifford and Peter McCarthy

The last 12 months has been a busy and dynamic period in the general insurance space. This article aims to give readers a taste of recent goings-on within the GIPC.

SO WHO ARE WE?

Currently we have 13 members who look after 14 areas of responsibility including personal injury, APRA, education and CPD.

The GIPC meets monthly to discuss initiatives in General Insurance and how the Actuarial profession can apply its skills in these areas. Initiatives include education, responding to public inquiries or making a meaningful contribution to public policy/debate, organising seminars and topical insight sessions (which help you network and get your CPD) and updating professional standards, guidance and information notes (which guide and protect the profession).

The GIPC also liaises with other professional and interested parties such as APRA, ICA, other Actuarial Practice Groups, Council and Governments.

As volunteers we do depend on other members of the profession helping us steer Actuaries into the future and we thank those outside the committee who have also provided support and content over the year.

The committee acknowledges Peter Hardy's contributions to the GIPC over the past three years. Peter was involved in a variety of areas for professional standards, including the release of information notes and the revision of professional standards in consideration of the impact of LAGIC.

This year the committee welcomed two new members, Arie van den Berg, who assists with member liaison and Susan Ley, who coordinates review of the professional standards.

WHAT WERE SOME OF THE ITEMS ON OUR RADAR OVER THE LAST YEAR?

APRA

Scott Collings

- Submission on APRA's Discussion paper 'Harmonising cross-industry risk management requirements', which proposed harmonised risk management requirements practices across industries, following the submission on APRA's draft prudential practice guide CPG 220 Risk Management.
- Regular liaison meetings with APRA on topical issues.
- We also have an APRA representative on GIPC (Robert Thomson).
- Considered various public consultations, including:
  - Confidentiality of general insurance data and changes to general insurance statistical publications.
  - Reinsurance counterparty data collection for general insurers.
- Submission on APRA's draft LPG270 Group Insurance Arrangements.
- As a result of speeches by Ian Laughlin (Deputy Chairman of APRA) and a letter from APRA in December 2013 to insurer CEOs and Board members regarding Catastrophe Risk Governance and Management, GIPC has organised the Catastrophic Risk Seminar and is considering issuing a guidance note to assist actuaries.

COUNCIL

Andrew Huszczo

- Regularly liaising with the Council of the Actuaries Institute to ensure that GIPC issues are raised at Council and that relevant issues raised at Council are discussed and actioned by GIPC.

COMMUNICATION

Kaise Stephan and Arie van den Berg

- Continued to provide topical updates to members via the monthly bulletins and the interposing themed quarterly newsletters. The newsletters had themes that ranged from the National Disability Insurance Scheme to the role of technology in general insurance.
- Performed a survey of members to assist GIPC with its review of its areas of activities. The survey asked questions relating to members' experience and opinions on GIPC initiatives including communication, CPD, research and public policy submission and asked members to comment on areas of improvement.
- Provided input into articles for the *Actuaries* magazine.
- Continued to update the Actuaries Institute website in relation to general insurance matters.

PERSONAL INJURY SCHEMES AND DISABILITY

David Gifford

- Keeping a watch on developments in personal injury schemes which include reviews and reforms one of which has been NSW CTP.
- Watching briefs on NDIS and NIIS developments which are closely related to CTP and workers compensation schemes.
- Considered the Transport Accident Amendment Bill which is aimed at ensuring that people affected by road trauma receive the most appropriate care, treatment and compensation well into the future.
- Submission to WorkCover NSW on Specialised Insurers Licensing Policy.

SEMINARS AND CPD

Samantha Fuller and Richard Yee

- The inaugural Risk and Regulation Seminar was held in Sydney on Monday 26 and Tuesday 27 August 2013.
- The 2013 Injury Schemes Seminar was held at the Sheraton Mirage Gold Coast, from Sunday - Tuesday 10-12 November 2013.

- The Catastrophe Risk Seminar was held at Amora Hotel Jamison Sydney on 3 June 2014.
- The Insight session: Update from the General Insurance Risk Appetite Working Party was held in Sydney on Thursday 1 May 2014.
- Further Insight sessions in 2014 are being planned in conjunction with the Actuaries Institute.

RESEARCH

David Koob

- Various research working parties operated in the last year covering risk appetite, discount rates, profit margins and general insurance management accounts.
- The Australian Research Council has granted just over $230,000 for a three year research project commencing from 2014, titled 'Modelling Claim Dependencies for the General Insurance Industry with Economic Capital in View: An Innovative Approach with Stochastic Processes'. This project will involve collaboration amongst actuaries in academia and industry.
- In conjunction with LIWMPC a working party has been formed to investigate the feasibility of undertaking research into the affordability of insurance premiums and drivers of claims cost.
- Also in conjunction with the LIWMPC a working party has been formed to investigate the feasibility of undertaking research into mortality of disabled lives in relation to the NIIS, NDIS and life insurance.

INDUSTRY

Tim Clark

- GIPC keeps abreast of industry developments and initiatives primarily through GIPC members who work in general insurers and through involvement with the Insurance Council of Australia.
- Anti-Discrimination Cross-Practice Working Group has been formed to respond to government focus on anti-discrimination law and how it relates to the use of actuarial data in determining premium rates and product design for insurance and superannuation products. The Actuaries Institute was invited to join a new steering group set up by the Australian Human Rights Commission on this issue.

OTHER PUBLIC POLICY MATTERS

- The GIPC assists the Actuaries Institute with media matters, including acting as a spokesperson on topical matters or drafting media releases or opinion pieces.
- On 20 November 2013 the Government released its Draft Terms of Reference for the Financial System Inquiry. The Inquiry will make recommendations on the nature of the regulatory arrangements that will best ensure an efficient, responsive, competitive and flexible financial system to underpin stronger economic performance, consistent with financial stability, prudence, integrity and fairness. A working group has been formed and a submission has been made regarding the Inquiry's Terms of Reference. The Actuaries Institute will continue to be involved with developments on the Inquiry. Representatives from GIPC has representatives on the working group.

PROFESSIONAL STANDARDS

Susan Ley

- Release of an information note on Insurance Concentration Risk Charge – Other Accumulations Vertical Requirement.
- Consideration of the International Actuarial Association's proposal to develop an International Standard of Actuarial Practice on IFRS x (Insurance Contracts).
- In response to APRA's focus on catastrophe risk management, a working party has been formed to prepare an information note for catastrophe modelling. Actuaries may find it useful to consider the points in the Actuarial Standards Board's Actuarial Standard of Practice (ASOP) 38 described in the GIPC March Newsletter, which covers the use of models outside the member's area of expertise.
- The draft updates to PS 300 Valuations of General Insurance Claims and PS 305 Financial Condition Reports and Review of Run-off Plans for General Insurance were finalised in March 2013.

EDUCATION

Andy White

- The syllabus and course content for the General Insurance specialist courses 3A and 3B underwent a material revision during 2013. This review has resulted in thorough and up-to-date course content.

ACCOUNTING STANDARDS

Kaise Stephan

- The GIPC keeps watch on developments in accounting standards that may impact the general insurance industry.

OVERSEAS DEVELOPMENTS

Kaise Stephan

- The GIPC continues to link with other Institute committees internationally and coordinate its activity with overseas professions and related organisations.

UPCOMING EVENTS

■ General Insurance Seminar 2014

The General Insurance Seminar: Insuring Tomorrow will be held at the Hilton Sydney, Monday 17 to Tuesday 18 November 2014.

■ Enterprise Risk Management Seminar 2014

The Enterprise Risk Management Seminar: Capturing the Upside will be held at the Hilton Sydney, Wednesday 19 November 2014.

Got feedback, questions or interested in helping out?

Please feel free to contact any one of us!

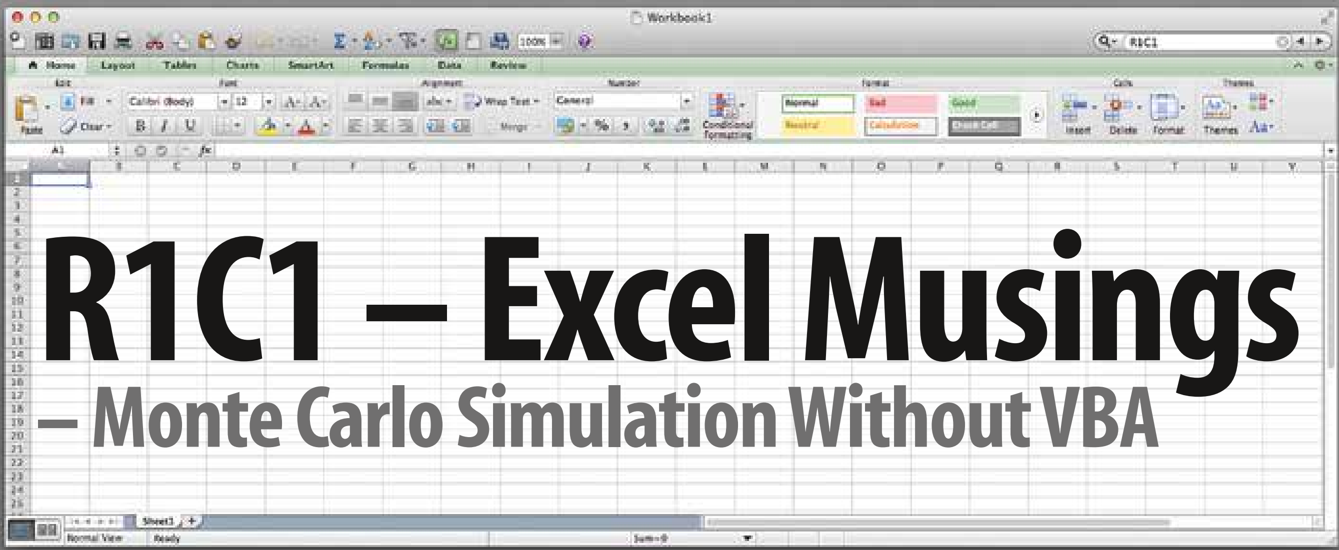
Peter McCarthy (convenor)
Andrew Huszczo
Andy White
Arie van den Berg
David Gifford
David Koob
Kaise Stephan
Richard Yee
Robert Thomson
Samantha Fuller
Scott Collings
Susan Ley
Tim Clark
Elayne Grace (Actuaries Institute – Public Policy)
Jennifer Dang (secretary)

And if you're hungry for a regular dose of GIPC, don't forget to subscribe to the GIPC bulletin or newsletter (via changing your details on the Actuaries Institute website) and/or monthly GIPC meeting minutes. The monthly GIPC meeting minutes are available from the GIPC secretary Jennifer Dang.

Lastly, thanks to all of the many Institute, working party and sub-committee members who have contributed their time and effort to activities overseen by the GIPC.

Thanks also go to the GIPC members for their service over the last year as it has certainly been a busy period!

Dan Mayoh
dan@fintega.com



R1C1 – Excel Musings

– Monte Carlo Simulation Without VBA

THIS ARTICLE IS THE FIRST IN A SERIES – PART OF A NEW REGULAR COLUMN, FEATURING THE MUSINGS OF DAN MAYOH...

As professionals in the actuarial field many of us use spreadsheets – predominately Microsoft Excel – on a daily basis as a key tool in exercising our craft. Two key observations I've made in my travels regarding financial professionals who use Excel are:
(i) the level of Excel knowledge varies widely amongst those who use it every day; and
(ii) even the very best financial modellers among us are still able to constantly learn more.

Excel and spreadsheet education is a passion of mine, both learning and sharing. With that in mind I am trialling a regular monthly or bi-monthly section in our magazine, titled 'R1C1 – Excel Musings'. I will be choosing one key topic / feature / tip to shine a light on each time, beginning right here with an interesting approach to Monte Carlo simulation in Excel. I have an outline of another half a dozen or so topics to roll out in future editions. But I would also love to hear from readers about what you would like to see covered in this column, and if you think the detail level is too technical, just right, or not technical enough. So if you have comments, please feel welcome to drop me an email. And now, without further delay...

MONTE CARLO SIMULATION IN EXCEL – A NON-VBA APPROACH

As actuaries, examining probability problems by stochastic trial is something many of us do. Whilst Excel isn't the only tool for this, there are times when it is the tool we wish to use, running a trial over and over again that is built up from Excel's RAND() function. To begin to draw meaningful conclusions about the probability of our event happening, multiple trials are needed, typically 10,000 or more. A VBA loop is one way to achieve this, but what if we don't wish to use VBA? That means we need our worksheets in Excel to replicate the necessary trial calculations. Depending on the amount of worksheet space needed for one trial, this may be easy to achieve via the dragging/copying of formulas, or it may require us to use a trick up our sleeves. To illustrate, I'm going to use an example based on dealing from a deck of playing cards. I could have chosen an example from the life insurance space that uses mortality tables, but if you are like me you find playing cards more interesting.

Let's say we are asked to build a stochastic model to answer "what's the probability of being dealt five cards all from the same suit?" (in poker parlance, a Flush, Straight Flush or Royal Flush). We can actually model a single trial of this in Excel quite compactly. One such

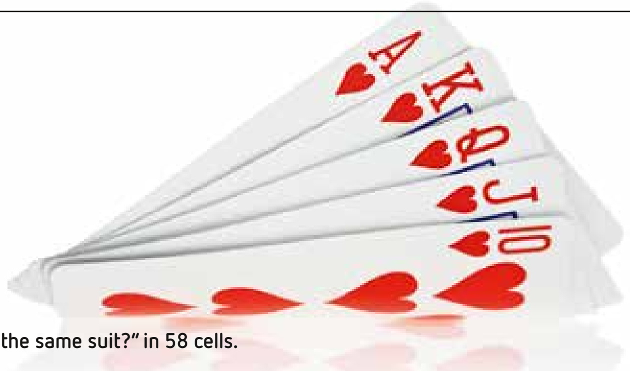


Diagram 1: Simulating a trial of "If I deal 5 playing cards at random, will they all be the same suit?" in 58 cells.

	A	B	C	AY	AZ	BA	BB	BC	BD	BE	BF
1	=RAND()					=MOD(RANK(A3,$A3:$AZ3),4)					=N(COUNTIF(BA3:BE3,BA3)=5)
2	repeated 52 times in columns A to AZ					repeated 5 times in columns BA to BE					Applied once, in column BF
3	0.623	0.364	0.77	0.698	0.308	0	1	3	0	2	0
4											
5											

way is shown in Diagram 1, using 58 cells across a single row. Cell BF3 will return 1 if all cards are the same suit, or 0 otherwise. (How and why these 58 cells arrive at the answer is not important for this discussion, but if you're curious, the formulas are provided in the diagram, and you should be able to figure out why it works with a bit of careful thinking.) We can then simulate multiple trials by dragging cells A3:BF3 down to row 10,002, to give us 10,000 trials. The observed probability will then be the sum of column BF for the 10,000 trials, divided by 10,000.

No trick there. But what if we were asked a more complicated question, where one trial required a block of perhaps 100 x 58 cells to model, instead of a single 1 x 58 row of cells? For example, "what's the probability of being dealt a five card poker hand that ranks as three of a kind or stronger?" (So this would also include three of a kind, straights, flushes, full houses etc.)

That can be modelled in Excel, but it will typically require a block of cells (or a very, very wide row). Hence it is not practical to replicate the calculation 10,000 times. Is there another option besides VBA? Yes. We can achieve the simulation of multiple trials using Excel's Data Table* functionality.

USING A DATA TABLE TO SIMULATE MULTIPLE RANDOM TRIALS

Normally, a data table in Excel is used for sensitivity testing. It's a way of substituting multiple values in the place of an assumption cell, and seeing the result for each case in a single table. What we will do in this case however is have the data table point to a blank cell, and return at each different row of the table the Boolean outcome of our single trial calculation in the form of a 0 or 1. This is shown in Diagram 2. By then averaging the results of the entire Data Table, we can start to estimate a probability for the event we are testing.

Why does this work? Because RAND() is a volatile function, Excel recalculates each RAND() function and generates new random numbers in the calculation block for each scenario in the Data Table. Here our objective in using the Data Table is not to substitute in to an assumption cell a new value from the left column of our table (hence why we can point the table to a blank cell), but rather to force Excel to calculate another 'scenario', meaning we get a new set of numbers from our RAND() functions, which is equivalent to a new trial of the situation we are testing.

Using this method, we are able to simulate multiple stochastic trials without using VBA, whilst only needing to model once the block of cells required to simulate a trial. In this manner, 10,000 trials can be simulated quite easily and efficiently, without the need to use more than a relatively small section of the Excel worksheet.

So there we have it – an alternative approach to Monte Carlo simulation in Excel without the need for VBA or repetitive blocks of calculations. And if you're interested in actually building a stochastic model to answer the second question posed and wish to test it, the deterministic answer is 6,219/216,580 or approximately 2.87%. 🅰

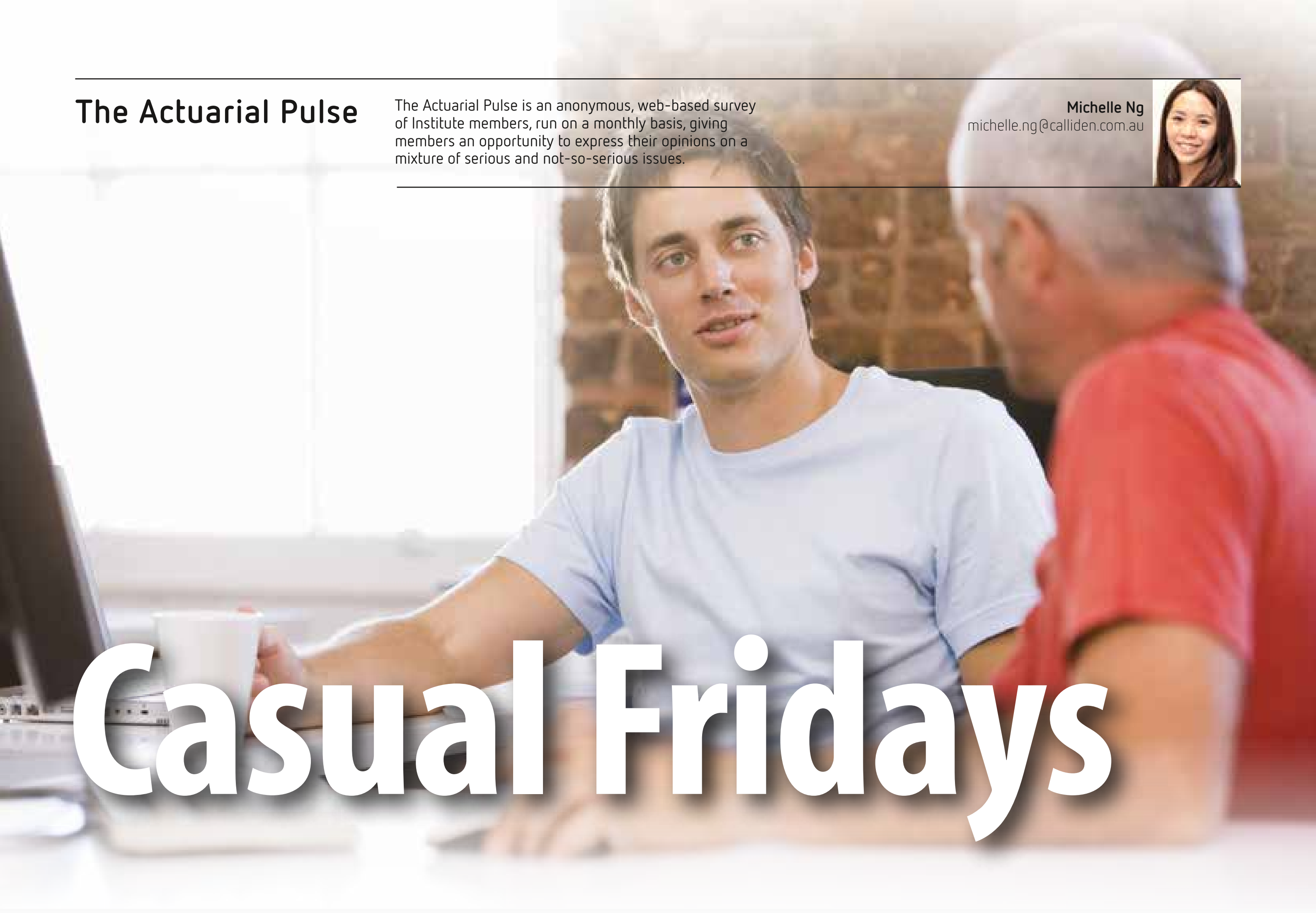
** If you're unfamiliar with Data Tables, they are worth knowing about, although should be used very sparingly in professional models due to the large calculation overhead that comes with them. They can be accessed via the keyboard shortcuts of Alt-D-T or Alt-A-W-T. Unfortunately, Excel's built in Help is sparse on information about how to set up Data Tables, but a quick google search for 'Excel Data Table' should give you all of the information you need.*

Diagram 2: Simulating 1000 random trials of a complex calculation in cells D106:D1105, using a Data Table.

	A	B	C	D	E	F	BG	BH
1								
2		100 * 58 block of cells performing a single trial						
3		of a complex calculation, based on cells						
4		that are driven by the RAND() function.						
100		(Note some rows and columns are hidden)						
101								
102								
103		0	<-- Outcome of a single trial given in cell B103					
104								
105				0		<-- Formula at D105 is "=B103"		
106		Blank Cell	1	1		<-- Formula at D106:D1105		
107		at B105	2	1		created via the Data Table is		
108			3	0		{=TABLE(,B105)}		
109			4	0				
1104			999	0				
1105			1000	0				
1106								

The Actuarial Pulse is an anonymous, web-based survey of Institute members, run on a monthly basis, giving members an opportunity to express their opinions on a mixture of serious and not-so-serious issues.

Michelle Ng
michelle.ng@calliden.com.au



Casual Fridays

WHAT WOULD YOU LIKE TO KNOW? IF YOU HAVE A QUESTION YOU WOULD LIKE TO PUT TO THE MEMBERSHIP, EMAIL IT TO EDITOR@ACTUARIES.ASN.AU

The *Pulse* questions in this report were provided by Tony Miller, (tcmiller@russell.com)

REPORT GENERATED ON 19 MAY, 240 RESPONSES.

TGIF – the day that we've all been waiting for. Whilst 'Friday' is associated with anticipation and excitement for the beginning of the weekend, 'Casual Friday' is two words that are often a source of confusion amongst employees.

'Business casual' used to mean 'no ties required' but workplaces aren't what they used to be, especially in terms of fashion. When I look around my office on a Friday, I see men skipping the suit and tie for a collared shirt and jeans, but for women, the 'business casual' outfit is not as straightforward.

I think Casual Fridays exist to make people feel more comfortable, encourage open communication and be their most productive selves. Are we more productive in casual dress? Or is it causing 'casual' attitudes in the workplace?

We opened up the *Pulse* survey this month to gain insights on how actuaries participate in casual dress day and whether the clothes you wear could change perceptions and behaviours.

There were 240 respondents and their compositions by age and by gender are shown opposite. The response rate is similar to other *Pulse* surveys and will be used to assist in analysing the other survey questions.

INTRODUCTION

Response	%	Count
Under 25	7%	17
25 – 34	29%	68
35 – 44	24%	58
45 - 54	26%	62
55 – 64	11%	27
Over 65	3%	8
Response	**%**	**Count**
Male	70%	168
Female	30%	71

QUESTION 1: DOES YOUR OFFICE HAVE CASUAL DRESS?

Response	%	Count
Once a week	63%	144
Once a month	4%	8
Occasionally	10%	24
Never	6%	13
Everyday	17%	40

If you walk around the CBD during your lunch break on a Friday, you won't see as many suits and ties anymore. Most people are familiar with the concept of dress down Fridays and our actuaries agree. 63% of respondents have casual dress in their office once a week and 18% have the freedom of wearing business casual every day.

Casual Fridays is a common tradition that we've grown so accustomed to but have you ever wondered where this custom started? The concept of 'Aloha Friday' actually started in Hawaii during the 1960s. The Hawaiian garment industry began to promote aloha shirts for use in the workplace by allowing employees to wear these shirts on the last business day of the week. Eventually this tradition spread to America then continued its way around the world until later adopted as 'Casual Friday' in the 90s. So who would have thought that we have Hawaii to credit for this tradition?

QUESTION 2: ARE THERE RULES OR GUIDELINES AS TO WHAT MAY BE WORN ON A CASUAL DRESS DAY, AND WHAT DO YOU THINK OF THEM?

Response	%	Count
Yes – Too restrictive	7%	16
Yes – About right	61%	138
Yes – Too casual	2%	5
No rules or guidelines	24%	55
No casual dress days	6%	13

It is interesting to know that most workplaces have nailed their rules and guidelines with 61% of our respondents found it to be 'about right'. However, 7% found it 'too restrictive' with one respondent claiming that 'we're not allowed to wear t-shirts, which is the one thing that everyone wants to wear.'

For 24% of us, no rules or guidelines are provided in the workplace. 'Common sense goes, business dress for clients and try not to look homeless otherwise' seems to work for one respondent. For others, 'business casual' can still be a cryptic term to decipher.

How often do you hear 'jeans' are perfectly acceptable in workplaces? In the majority of cases, they are, but with infinitely more options, the style, cut or colour can easily push it past the boundaries. With dress codes left unclear, many people adopt a 'follow the boss' type mentality, but what if your boss was the opposite sex?

We call upon actuaries to give their guidelines around casual dress days.

For men, the general consensus is collared shirt, dress pants and a belt. Jeans are acceptable but needs to be dark coloured.

Interestingly enough when it came to the guidelines for women, most responses were only on what not to wear. Since there weren't many guidelines for women in our responses, I did some researching of my own. Business casual is a classic, neat look so nothing that is too tight or too baggy. Conservative colours including black, grey, beige and brown should still be worn. Skirts should be at least knee length and if it is knee length, wear pantyhose. Covered shoes is a must, high heels are acceptable.

QUESTION 3: HOW DO YOU PARTICIPATE IN CASUAL DRESS DAY?

Response	%	Count
Stretching the boundaries	7%	15
Within the general spirit	71%	160
Token gesture	7%	16
I don't	15%	34

Casual Fridays are embraced by many with 71% of respondents participating 'within the general spirit.' 15% don't participate and this seems to be attributed to one of three reasons.

Non-participation by senior leaders appears to be the norm. Some find it 'too difficult' to require a separate wardrobe. Our most popular response is that there is 'too much risk of potential client meetings.'

Credibility goes to what people can see visually. The last thing you would want is to be called into an impromptu client meeting and having to apologise for your outfit. It is wise to keep a blazer or jacket in your office, should any unplanned opportunity arise.

QUESTION 4: WHEN OTHER PEOPLE DON'T PARTICIPATE IN CASUAL DRESS DAYS ARE YOU:

Response	%	Count
Indifferent	75%	168
Understanding	17%	39
Perplexed	6%	13
Annoyed they don't join in	2%	4

There are only very few of us that are 'perplexed' or 'annoyed they don't join in'. 75% are indifferent because quite frankly, there are probably more important things to think about. Unless of course, it is the occasional outfit that steps out of line that does catch your eye. 17% understand that 'most likely there is a client meeting' and that it is a 'personal choice.'

QUESTION 5: PLEASE PROVIDE EXAMPLES OF WHAT YOU WOULDN'T WEAR AND WHAT YOU THINK OTHER PEOPLE SHOULDN'T.

There was a massive response in regards to clothing that are deemed inappropriate. Let's break it down to a concise list.

WE MUST NOT WEAR:

- Shorts
- Ripped jeans
- Gym and beach wear
- Hoodies
- Mini skirts
- Singlets or tank tops
- Offensive slogans
- Anything too revealing
- Thongs
- Sneakers
- Ugg boots

THE MORE INTERESTING ONES:

- Anything too 'ratty'
- Safari suits
- Scraps of material
- Ball gown
- Skimpy nightclub wear
- Clothes with holes in strange places

QUESTION 6: DO YOU BELIEVE YOU WORK DIFFERENTLY (OR WOULD WORK DIFFERENTLY) ON CASUAL DRESS DAYS?

Response	%	Count
More effectively	16%	37
About the same	73%	164
Less effectively	11%	24

Do your clothes affect behaviour, thoughts, judgments or decisions? I came across this concept called 'enclothed cognition,' which is when we take on the perceived characteristics of the clothing we wear due to the psychological experience when wearing the outfit. Clothing has symbolic meaning to us and since our brain behaves consistently with that meaning, we may be more cognitively alert when wearing professional business attire.

And what do our actuaries think? It appears to be that our respondents are not affected on casual dress days. 73% of us work 'about the same' and 16% find that we are working even 'more effectively.' For most, comfort is creating a positive atmosphere and we are more productive as a result.

QUESTION 7: DO YOU FEEL THAT YOUR COLLEAGUES BEHAVE AND WORK DIFFERENTLY ON CASUAL DRESS DAYS?

Response	%	Count
More effectively	7%	17
About the same	78%	174
Less effectively	15%	33

On the flip side, let's explore what your colleagues think. Again, majority (78%) feels that their colleagues work 'about the same'.

15% think that their colleagues are working 'less effectively'. What I did find interesting is that 9% of respondents who found themselves working 'about the same' feel their colleagues are working 'less effectively'.

QUESTION 8: WHICH OF THE FOLLOWING STATEMENTS DO YOU AGREE WITH?

Response	%	Count
Work dress is irrelevant to outcomes and people could dress however they like	34%	75
Having dress standards makes sense	63%	140
Casual days are a good way to enliven the work environment	57%	126
Casual dress is the thin edge of a wedge	2%	4
There are different standards for men and women	31%	68
'Dress up Friday' would be a good way to raise money for charity	18%	40

Only 34% believe that 'work dress is irrelevant to outcomes.' The way you care for your image could indicate the level of care you put into your work. If you are well dressed and can attend meetings with clients without advance preparation, it is a huge advantage.

'Having dress standards makes sense' for 63% of our respondents. While most are familiar with the 'business casual' unwritten guidelines, there is no downside to enforce an official policy.

57% think that 'casual days are a good way to enliven the work environment.' Casual Fridays stimulate a positive atmosphere and can improve relations amongst employees. Genuinely complimenting a colleague's outfit is a classic example to start a conversation.

CONCLUSION

Only two decades ago, were we first introduced to this concept of Casual Fridays. It is now a welcomed tradition that has made its mark around the globe. With fashion trends constantly changing, our guidelines will also change with it.

What we wear doesn't seem to affect the majority, but for others, it may alter perceptions and behaviours. With the freedom given to us on a Friday, what we choose to wear may reveal more than we think.

Every company may have different guidelines (or none at all!) but getting the outfit right shows how well you understand the culture of your firm. A

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The Censoring Problem of an Actuary's Career Path –

Have We Painted the *Right* Picture, or Have We *Left* Something Out?

For many years, the Actuaries Institute and universities teaching actuarial studies students have been launching marketing campaigns to attract prospective students and professionals to become actuaries. These campaigns centre upon the fact that an actuary enjoys a high-paying rewarding career, relatively good work-life balance and low unemployment risk. Backing evidence includes salary surveys from leading recruitment agencies and industry-wide surveys on job satisfaction. I highlight the annual Careercast survey in the US which found that actuaries have ranked very highly as a preferred career, being the top career of choice for many years running (though we have slipped to fourth place in 2014). Such positive evidence from industry has fuelled our campaign success.

With six universities now offering Actuaries Institute accredited actuarial studies programs, compared to four at the turn of the millennium, the number of actuarial graduates entering the workforce each year has increased. There is also increasing doubt as to whether all these graduates are employed in a role they sought. Indeed, it is worth noting that there are whispers making their rounds in the grapevine about how actuarial studies graduates are being forced to continue onto postgraduate studies or change programs due to their inability to find a job.

Thus, the picture appears to be polarised. I pose two questions:

1. What are the actual prospects of actuarial graduates when they complete their university studies?
2. With what evidence do we back up our claims and have we got credible data?

The answer to the first question, to date, is based on anecdotal evidence from past personal experience or drawing from empirical industry data such as those from recruitment agencies. It is true that the currently employed actuaries, especially those with an established career and are now in senior or middle management roles, are faring quite well due to low supply and hence little competition. Being a high achieving profession with a high barrier to entry (think about the Part III examination pass rates), those who succeed may be few and far between. It is quite likely that these are the people we invite to speak in careers fairs, university recruitment campaigns and other marketing functions. They are likely to paint a rosy outlook as they speak of their experience, which has been smooth sailing. On the other hand, those who completed university in recent years may face more obstacles, either due to them being in the process of completing their exams or their facing difficulties in being employed due to the effects of the global financial crisis. They may be less positive about the prospects available to themselves and aspiring actuaries. However, we rarely hear about these experiences in marketing events. Thus, I believe the picture may be subject to selection bias.

I move now to the second question. I believe that the information on currently employed actuaries drawn from industry surveys are

reliable and valuable. However, a gap exists in the earlier stages of an actuary, in particular their university stage and the transition between university studies and paid employment. Over 2010-2011, I conducted a survey, with Associate Professor John Evans and Associate Professor David Morgan, on UNSW actuarial studies alumni to gain some understanding of their perceptions on the actuarial profession. In this survey, we asked respondents about their career progression, including their experience in finding their first job after leaving university, their current role and perceptions about their future career progression. Our sample comprised 66 respondents out of over 300 contacted, with only 39 who provided information on their career experience. Furthermore, our sample was weighted more towards early career actuaries.

We found that 92% of these respondents were offered a job within one year of applying for their first role, with 73% gaining their first offer within six months of applying. 73% were working in an actuarial role upon leaving university. We also found that, in their current role, they were most satisfied with their company's reputation and the workplace environment. Interestingly enough, remuneration and potential for career progression were ranked significantly lower, with work/life balance being the area they were least satisfied about. However, it is worth noting the satisfaction scores are all 70% and above so it is by no means doom and gloom.

The findings in our survey seemed to be consistent with the view that being an actuary is indeed a good career choice and the rewards are attractive. However, we also found that the career path to becoming an actuary is not as easy as it used to be.

Of greater concern is with respect to those whose information was not captured in the survey, as their responses may be less positive than those who participated. The low response rate in our survey points to our findings being subject to positive selection bias.

Comment continued

Thus, while our survey supports our current views, the unreported data may well be consistent with the voice of dissent, once an inaudible whisper but no longer so.

In light of this, I believe it to be important that the Actuaries Institute and accredited universities work together to collect better quality data so our marketing campaigns are better informed in order that we offer a more balanced view to our target audience. I also see it as being consistent with actuarial practice in making decisions and judgment using credible data.

To my knowledge, attempts have been made in the past to create a database to track the career progression of our members, albeit with limited success. Universities encounter the right censoring problem, as the alumni database is incomplete. The progress of these graduates is lost gradually over time when they move overseas or simply do not update their details. The Actuaries Institute faces the left censoring problem, as members join gradually and their history is unknown. Those who join the Institute are more engaged with the actuarial profession.

I see opportunities in developing a collaborative project between the Actuaries Institute and the accredited universities to combine their data to track the professional progress of our actuarial members and students. This database will not only yield valuable information to guide our marketing campaigns, but in policy setting and strategic direction for the Actuaries Institute and universities. We can better identify areas for improvement in social engagement, education programs and continual professional development. The Actuaries Institute may be able to track which areas of practice are growing or waning, thus resources can be effectively allocated to develop our footprint in the areas where more actuaries are being engaged.

This project is no small feat, by any means. The mission (should we choose to accept it) will involve us identifying our aims, formulating an operation plan and raising funds, employing the right people and technology and meeting research protocols. The ongoing nature of this project will require dedication, a clear vision and reliable administrative support to guarantee success.

To conclude, the future lies in our understanding of the past of our members, aspiring members and those whom we have lost along the way. Are we ready? A

Obituary

Paul O'Connor
CEO, Comcare

A Man for Others:
A Tribute to Sir Owen Woodhouse

Kua hinga te totara I te wao nui a Tane
(A great Totara tree has fallen in the forest of Tane)

PHOTO COURTESY OF NZ ACCIDENT COMPENSATION CORPORATION

The recent death of Sir Owen Woodhouse – war hero, legal luminary, great thinker, social reformer and humanist – has caused many in New Zealand and afar to stop and reflect on the contribution of this great man to their community and their lives. Like the Maori proverb, or whakatauki, the falling of a large tree in the forest, Sir Owen's death leaves a wake.

Sir Owen's legacy of social reform and judicial activism is legendary, a national treasure. His impact on people was profound, positive and enduring. It makes you think about the nature of great leaders. What makes them special? And what gets in the way of each of us doing more to help build a stronger community and support those in need?

Sir Owen inspired people across all generations. He was professionally generous, polite and warm. He connected people. Many are wiser and deeply richer for him being so. I am fortunate to be one of them, even though our connection was in his later years. I drew from the well, professionally and personally.

Sir Owen was a man who lived for others. Former Prime Minister, the Rt Hon Sir Geoffrey Palmer QC, a mentee, recalls Sir Owen's compassion for people as his most salient characteristic. His gift of friendship, Sir Geoffrey eulogised, "…inspired enormous loyalty and affection among those with whom he interacted and worked." It reflected his earlier comments to a journalist that Sir Owen had "…great human compassion, a wonderful social conscience and a great feeling for people."

Praise has flowed from leaders across the spectrum of New Zealand politics. Descriptions of Sir Owen as the 'father' of New Zealand's Accident Compensation Commission (the ACC) reflect the respect he engendered. The report that led to the ACC's formation was the product of a Royal Commission of Inquiry into personal injury in New Zealand. A ground-breaking legal reform, it was described by Sir Geoffrey Palmer as brilliant, innovative and revolutionary.

Sir Owen recommended the introduction of universal coverage for personal injury around the clock and one which preserves the no-fault principle for the payment of compensation. He designed, with two co-authors, a statutory scheme of support providing rehabilitation and compensation. As a practical response to the toll of personal injury, he thought people affected deserved "…a co-ordinated response from the nation as a whole." Describing the then common law system as a lottery, he lamented, "Such a fragmented and capricious response to a social problem which cries out for co-ordinated and comprehensive treatment cannot be good enough. No economic reason justifies it."

40 years after the ACC's establishment, a University of Auckland symposium marked the occasion. Sir Edmund Thomas, a judge of New Zealand's Court of Appeal, recounted his 1969 assessment of the Woodhouse report:

"This beautifully crafted Report is the work of a man with a deep-rooted social conscience fully aware of the needs and aspirations of the common man and woman. His Report reflects his vision of a more humane, harmonious and responsible society. As such, it represents the most far-reaching exhortation to the community to engage significantly with those who are less fortunate since the enactment of the Social Security Act in 1938. The comprehensive and unified scheme which he advances to replace a fragmented and capricious response to the problem of personal injury is conveyed with clarity, cogency and cohesiveness that few, if any, authors could emulate."

It was fine praise. In closing the symposium, Sir Edmund, once a Visiting Fellow at the Australian National University, commented:

"Nothing that has transpired can diminish the brilliance of the Report itself and the profound impact it has had on social, political, legal and economic thinking. Its enactment by a Government subjected to hostile pressures from vested interests has not been replicated anywhere in the common law world. Elsewhere, self-interested pressure groups have proved too strong and too vocal."

Interestingly, Sir Owen himself felt greater public value was derived from his earlier work, with others, on a committee of enquiry that led to the fluoridation of New Zealand's water supply, a significant and initially controversial public health reform.

A series of New Zealand governments have played with the structure, programs and impact of the ACC over the years since its establishment in 1972. Each iteration interprets Sir Owen's architectural intent. Sir Owen's death has generated significant comment and reflection on the journey and public value of the ACC and the work of its people. The debate will continue in earnest as we approach the 50th anniversary of the delivery of the report of the Woodhouse Royal Commission in mid-December 1967.

The Australian chapter of Sir Owen's journey dates from the early 1970s. His proposed radical reform of New Zealand's accident compensation system had sparked interest and intrigue from the then opposition leader, the Hon E.G. Whitlam, QC. In government, Mr Whitlam thought 'it time' to boldly task Sir Owen to similarly define how a national insurance-based scheme would support people seriously affected by accident, illness or disability. It was reflected in E.G. Whitlam's 1972 policy speech where he undertook to establish a national compensation scheme. Sir Owen was supported in his work by another veteran of the Second World War, the Hon Justice Charles Meares of the New South Wales Supreme Court.

From 1972 to 1974, the ground work of research, planning and community consultation paved the way for the Woodhouse report to be tabled. Sir Geoffrey Palmer was plucked from his teaching post in Charlottesville, Virginia to assist Sir Owen in his work on the Australian plan. Sir Geoffrey recently described it as 'a tough time' as they encountered entrenched and strident resistance across Australia. It's a period nicely summarised in Mark Robinson's 1986 review of Australian accident compensation, but Sir Geoffrey's earlier account from 1979, Compensation for Incapacity, offers the richness of his personal insight.

Like in New Zealand, two stages were envisaged for the Australian reform. The first part, protection for injury from accident, led to the creation in New Zealand of its Accident Compensation Corporation. The second part – protection from illness or disability – languished and remains so.

E.G. Whitlam insisted that both elements – accident and illness – be incorporated from the outset. That led to inevitable delay as the scale of the reform was breathtaking. Its size, complexity and cost, controversy and impact needed careful analysis, debate and reflection. Eminent actuary Professor Richard Madden, then a statistician, was part of the team working on the reform led by the luminary, Professor John Pollard, who went on to his influential career at Macquarie University.

E.G. Whitlam described the final report in his narrative, The Whitlam Government 1972-1975, in the following terms:

"The judge's report was one of the most convincing and stimulating reports ever presented to the Parliament."

Enabling legislation was drafted and passed the lower house in October 1975. Senate committees struggled with the cost implications as they worked through the issues late in the spring of 1975.

The dismissal of the Whitlam government in late 1975 meant the Parliament was prorogued. Lost in the controversy was the now important realisation that all bills had lapsed. A conservative caretaker government was elected but it had no policy appetite for Sir Owen's ideas. He recounted late last year how, diverting his return to Auckland from business in Geneva, he stopped by Canberra to meet the new Minister responsible for social welfare programs, Senator the Hon (later Dame) Margaret Guilfoyle, but to no avail.

While Sir Owen's ideas were shelved and the project team disbanded during 1976, the Hon Lionel Bowen and E.G. Whitlam introduced a private member's bill in February 1977. The Fraser Government did not allow a vote.

It's clear that the impact of the Woodhouse thinking pervaded many of the accident compensation reforms to emerge in Australia over the last four decades. For example, Victoria's then Motor Accident Board was established in 1974 to provide, for the first time, no-fault compensation arising from car crashes. It later morphed into today's Transport Accident Commission.

More recently, the establishment of the National Disability Insurance Scheme has brought to life the concepts of 'that decent fellow feeling' embodied in Sir Owen's reforms.

New Zealand's current Prime Minister, the Rt Hon John Key described Sir Owen as a man whose life exemplified public service. It's truly so. Hearing the wonderful tributes to Sir Owen's leadership and public influence at his funeral service helps one reflect on purpose and recommit to public service. Equally inspiring were the eulogies from his family that spoke of his impact, the father, the wise and caring man whose sage advice deeply shaped so many in his family and community.

Sir Geoffrey Palmer eulogised that what we acknowledge and celebrate about Sir Owen Woodhouse was, "…not merely a good life, it was a great one." Its greatness was captured nicely in the reflections of the Chief Justice, the Rt Hon Dame Sian Ellis when she spoke of Sir Owen's "deep engagement in mankind".

As Sir Owen would write in his valediction to those dear to him, "Be kind and good". So we will, sir, knowing the things that are right and how they must be done. Vale, Sir Owen.

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Actuaries – the Rock Stars of the 21st Century

> The principles in running a band are the same as any organisation employing actuaries. You need a mission, a brand and an eye to the financials.

There has been much speculation that musical and mathematical abilities are linked. Whilst not every musician is a good mathematician and not every mathematician is a good musician, there is evidence that musical training improves one's abilities to do mathematics. Mathematics is also well embedded in music – note frequencies and signature time or beats per bar.

So actuaries and music are linked and so it makes sense for actuaries to be rock stars.

My ambition as a teenager was to join the Rolling Stones. My mother was shocked – what a waste of my mathematical ability. So I embarked on a dual career of a rock musician and an actuary.

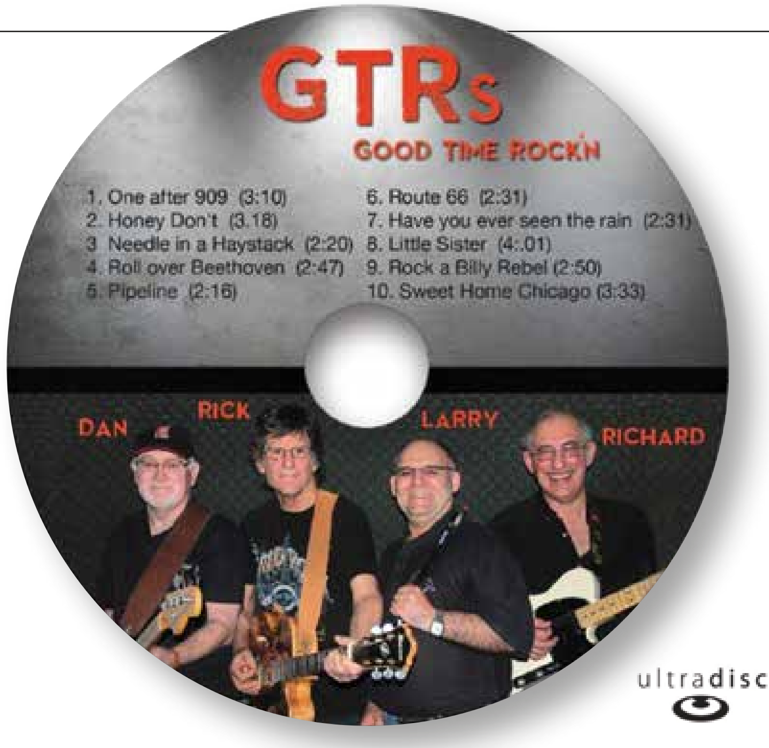
This made sense for a number of reasons. Economics was one. My hourly charge rate as an actuary and my likely total net earnings this year as a rock musician are closely aligned.

Another was it was easier to get a date if I said my ambition was to be a rock guitarist rather than an actuary.

Thirdly, when I stare down at my own shoes like an actuary at least they are tapping in time to music.

My career path was set. However, my actuarial studies and then married with three young children meant my guitars lay idle in the cupboard for many years. Recently, I realised that if I wanted to become a rock star "It's Now or Never".

Photo: Warriors Victoria Open Mic



I helped form a five piece band and wanted to call it "Mid Life Crisis" but found out that there was another band by this name. We ended up calling the band Kinda Kool after a piano tune written and played by my guitar idol Hank Marvin of the Shadows. We were moderately successful but found it difficult to get paying gigs.

A number of the members in Kinda Kool had other bands too so that they could maximise their chances of playing in public and I decided to do the same.

One day I received an email from Dan McLachlan, President of Warriors Victoria (an organisation for amateur musicians), that his band the GTRs was looking for a lead guitarist. I had seen Dan play bass guitar some years ago and was then really keen to play in a band with him. I was asked to contact Rick McGowan the band leader, guitarist and singer. As it happened I knew the drummer. We had played in a previous band together (that failed to get one gig) and after the auditions I was selected to join the GTRs. The drummer left shortly after that and we recruited Larry Finn to fill this role and to add vocal ability.

The principles in running a band are the same as any organisation employing actuaries.

Firstly, why and what is your mission? Ours was to quote the Beach Boys "Fun, Fun, Fun".

As regards the financials, we knew that "Money, Money, Money" was unlikely but as we got 'market rates' we were happy. I did suggest to the band we invest the band's earnings in diverse investments so we have something to fall back on when"It's all over now".

Rick was firm that we stick to our brand which is a 50s to 70s rock group playing cover songs people know and want to dance to. Our repertoire includes songs by such notables as Elvis Presley, the Rolling Stones, the Beatles, CCR, Chuck Berry, Roy Orbison and Cliff Richard and the Shadows.

To enhance the brand we bought matching suits and different coloured shirts. This highlighted both our united purpose (music) and our individualism and diversity.

We also knew that to survive we would need to get public engagements. We developed a sales and marketing plan that required us to record a CD and prepare a promotional kit.

Dan organised for us to be recorded at one of our rehearsals using a pc. For $80 each, we had our first CD. Larry, a keen photographer, took our photograph and my daughter Yael designed the CD cover and arranged copies to be made.

We also set up a Facebook page for the band.

Dan in his role as President of Warriors Victoria had connections with a community radio station 96.5fm. We were interviewed and a number of tracks off our CD were played. Many of the listeners connected via the internet

Woodside Pub gig


Rock Stars – Buxton Pub


Royal Children's Hospital (with new suits)

and we were told that we had people in America online listening to us – globalisation in one move. That night was real fun as we had plenty of banter and joking during the interview and poking fun at ourselves.

Rick organised a gig in December at the Woodside Pub (near the 90 mile beach in Victoria). Afterwards we stayed at Rick's beach house and discussed our future.

We were disappointed with the numbers at the Woodside pub gig and decided that, from then on, we would take a lead role in publicising our gigs. We held discussions with the pub owner the next day. We would market the next gig by contacting the local newspaper to run an advert and article for the band. We would also contact the local campsites and send them posters to put on their noticeboards. We sold the concept that it was in everyone's interest to promote entertainment at Woodside beach. Forming a partnership relationship with the pub owner and the local campsites meant that the next gig, two weeks later, had a much greater crowd despite there being a private birthday party that night.

This theme of partnering with the stakeholder became our modus operandi. Our marketing campaign, when asked to play at the Buxton Pub, was to contact the Marysville Tourism Board and market the idea of visiting the attractions of Marysville during the day and then relaxing at the nearby Buxton Pub in the evening. They were very happy to promote us on their website. We also contacted the local campsites and, without exception, they were very happy to assist by putting posters on their noticeboards. The pub owner was thrilled with the impact we had and gave us six more bookings for the year on the spot.

Warriors Victoria gives us the opportunity to pursue the band's social responsibility. We appeared at the annual fundraiser for the Royal Children's Hospital. We have also discussed the concept of a bike ride combined with a 60s rock party with the organisers of Super Cycle (Mercer sponsored event) as part of their fundraising.

The success of the GTRs in a relatively short period has meant that I had to sever my ties with Kinda Kool – a band equally talented but without the business focus.

Dan's friendship with (no relation) Roger McLachlan of Little River Band fame has meant that Roger has filled in as bass guitarist when Dan has been away. Imagine that, playing in a band with a real superstar! Whilst not quite the same as playing with the Rolling Stones it is a lot closer than I would ever have imagined. "Dream … dream dream dream". A

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Public Policy and APRA

I was going to start by saying that there's been plenty happening but then I had a quick look over my last couple of articles and they said that. From now on you can take it as read that a lot is going on 'behind the scenes'.

Council has not met since my last article so there aren't any particular Council matters to update members on. Instead I thought I would comment on two areas that the Institute is involved in, but which the views of members, about the Institute's role, vary.

The two topics are public policy and APRA. It is my view that it is important for the future of the profession that the Institute take a prominent position in public policy and have a good working relationship with APRA. These roles should benefit members generally but will likely be more important to younger members than older members (who have well-established careers).

PUBLIC POLICY

With the goal in mind of boosting the profession's reputation, the Institute has been increasingly proactive in recent years in commenting on public policy issues. Some members do not consider the Institute to have any role in public policy whilst many more would like to see the Institute more heavily involved in public debate.

It is my view that it is extremely important that the profession is seen as a body whose opinion is sought by decision makers and opinion leaders. It is far better to have a seat at the table when important decisions are made than to have to pick up the pieces after the event. Of course, we are not going to always get our way, but, it is better to have tried and failed than to have failed to try!

Whilst I am a believer in the Institute having input into public policy debate, I also consider there to be reasonably strict guidelines that we should work within.

- We need to be apolitical. It is imperative that our views are not seen to be aligned with a particular side of politics. We need to be sought for our independent views.
- We are not a lobby group. Our views should always be in the public interest, which may not always be in the best interests of our members (e.g. linking the preservation age to retirement age).
- We should aim to provide objective comment. Subjective commentary should be thoroughly canvassed with members (in many cases this will be via the practice committees).
- We need to be sure of our facts where we are using information developed by other professionals.
- Commentary should be consistent with the views of the majority of members – though should not be restricted to requiring all members to agree.

As long as we are mindful of the boundaries that we need to operate within then I consider that the Institute can be a significant contributor to public policy. In doing so, the reputation of the profession should be enhanced, which should ultimately benefit members.

Ultimately, I also think we need to have views on matters where we have expertise as actuaries (and quite possibly a duty to express those views) on the pressing issues which our society faces.

APRA

The Institute maintains an open dialogue with APRA across several fronts, and we are fortunate that senior executives from APRA are also prepared to invest time into building and maintaining the relationship. The practice committees have regular meetings to discuss topical issues in relation to their particular area of practice, and the President and CEO meet with senior executives from APRA on an informal basis.

APRA has recently raised some challenges for the profession to address and we will be considering the issues raised and responding to their concerns. That does not necessarily mean that we will agree with APRA, but rather that we will analyse the issues and will provide a considered response, and action, as appropriate.

APRA is not always going to act as we may like, however they have altered decisions, provided extensions or allowed exemptions in several cases where logical and constructive responses have been provided.

As long as we are mindful of the boundaries that we need to operate within then I consider that the Institute can be a significant contributor to public policy.

A recent example is the extension of the allowance for the FCR in general insurance to be provided within four months rather than three months. The Institute provided feedback that highlighted that the issue impacted some Appointed Actuaries (AAs) more than others and highlighted the logistical issues that some AAs face. A key element, in my view, was to be able to highlight that there are real reasons why the timing change is problematic for some, and not just people complaining because they are comfortable with the status quo.

Of course not everything goes our way and the inability of the AA to also be the Chief Risk Officer is an example.

It is important that we have a good working relationship with APRA but we must also maintain our independence as a profession. We should, however, be willing to look critically at the work that we do when others question the adequacy of what we're doing, and we should be willing to take action where that is warranted.

Obviously all the views expressed above are mine. Nevertheless, I think they are reasonably consistent with the views of the broader membership and are based on my wide ranging discussions with you. I guess we'll get an idea of that from the number of emails that I receive once people have read this.

As I mentioned at the start, Council has not met since my previous article. I will provide an update on the deliberations at our June meeting in the next edition, as I am committed to greater transparency of Council's deliberations.

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The Politics and Policy of Retiring

> **"Oh to be 70 again!"** – *Georges Clémenceau, French Prime Minister during WW1, on his 80th birthday.*

Politicians constantly have to make tough choices. Inevitably, compromise occurs and some voters are left unhappy – it's the nature of the beast – politics. The annual May Federal Budget is probably the apogee of this constant battle of tough choices. This year's budget, cast in the light of a 'budget emergency', was bound to divide opinion on all sides.

With this in mind it's worth examining the decisions the Government has made in recent times about how Australians are going to provide for themselves in retirement, and how these decisions stack-up with the Actuaries Institute's stated views. I will also reflect on what other organisations like the Financial Services Council (FSC), the Grattan Institute and the Productivity Commission say.

It's an important topic of debate for your profession to be engaged in because the challenge of how Australians are going to pay for their retirement is one that policy-makers are going to be wrestling with for some time. Actuaries have an important contribution to make by providing fact-based information to the community, opinion leaders and decision-makers.

But first, what is the Actuaries Institute's stated position on certain aspects of the retirement policy?

On budget night we essentially reiterated our views of the past weeks and months and said that given budget constraints we supported the decision to increase the Age Pension eligibility age from 67 to 70 (previously we had said that the Government should consider increasing the Age Pension eligibility age), with the important caveat that more reform was required and that a safety net was required for those unable to continue working. With this position we are in step with the Productivity Commission which has also supported an eligibility age of 70 for the Age Pension.

The average 65 year old is already expected to live well into their late 80s. Within 50 years this is projected to increase to the mid-90s. Over the next 30 years in Australia it is estimated that there will be 7 million people aged over 65, double the current 3.5 million. Based on these projections there will be 2.7 people of working age for every over-65 (down from 4.2). Further, the over 85s population nearly triples from under 0.5 million to 1.4 million people which will significantly increase demand for acute health care and aged costs.

We justified our position on the Age Pension by saying the decision was an important step in ensuring our pension and health care systems remain sustainable. We added that if we didn't take action now Australian taxpayers would find it difficult to support the ever increasing number of retirees, at the same level of benefit that retirees currently enjoy, particularly as our workforce was shrinking at the same time.

This problem is amply illustrated by considering that due to an ageing population, over the next 50 years it is expected that these three areas' share of GDP will soar from 7.6% to 13.3%, which is clearly unsustainable.

Pulling the policy lever on the Age Pension age needs to be complemented by other changes. We acknowledge some people will be unable to work to age 70 and there should continue to be government support for them, as is the case now. We also support removing impediments that discourage older Australians to work, a prime example being the current age restriction of 75 on making superannuation contributions.

Providing incentives for retirees to take their retirement benefits predominantly as an income stream, and extending pre-retirement defaults in MySuper to retirees so they benefit from appropriate product selection in both their initial years of retirement and in later life, also need to be added to the policy mix.

The most contentious (and unresolved) issue that needs to be addressed is the preservation age – when you can access your superannuation. For people born

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before 1 July 1960 their preservation age is 55. It will gradually increase to 60 for those born after 30 June 1964. That it is likely to be the new battle ground is evidenced by the increasing commentary on the issue.

Our position is that the preservation age should be gradually increased so that it is no more than three to five years lower than the Age Pension eligibility – and there are a number of benefits that flow from this. Australians will be able to save more for their retirement, and because people are living longer, it will also help ensure people do not draw down on their superannuation too early.

It would also help to reduce the increasing pressure on the expense side of the budget and, it could be argued, that it would have broader benefits to the economy by having people participate in the workforce longer.

Unsurprisingly other organisations have also joined the debate. The National Commission of Audit's recent report recognises the inter-relationship between different elements of the retirement system. It recommends increasing the preservation age to five years below the Age Pension age, extending the current phased increase in the preservation age by an extra four years so the preservation age reaches 62 by 2027, and increasing the preservation age in conjunction with the Commission's proposed increases in the Age Pension age thereafter.

The Grattan Institute, a public policy think tank, said in its 2013 report 'Balancing budgets: touch choices we need' (Nov 2013), that access to both the Age Pension and Superannuation should be increased to 70 years, saying it could ultimately improve the budget bottom line by $12 billion a year in today's terms. It would also produce a lift in economic activity of up to 2%of GDP. Balanced against this view is that "some who would prefer to stop working earlier will not be able to afford to do so."

In April this year FSC's CEO John Brogden articulated the FSC's position in the *Australian Financial Review* saying: "Accessing superannuation at 60 is no longer viable," and "A sustainable superannuation system goes hand in hand with a sustainable age pension system. Accessing superannuation at 60 when the pension is available at 67 encourages the wrong type of behaviour". The FSC position is that the preservation age should be raised to at least 65 and Age Pension eligibility tightened to stop double-dipping.

The reason I have evidenced other organisations' opinions, is that it demonstrates that the Institute is swimming with the mainstream on issues of retirement policy, though I would argue that we are taking a more balanced and holistic view in terms of other measures that need to be adopted, and through our recognition of the impacts on the community of changes made to the retirement system.

Watch this space, over the months and years to come there will continue to be debate and policy adjustment. The fact that there will continue to be an increase in tax revenue forgone from the superannuation system, combined with increased expenditure on the Age Pension, and the associated health and age care costs, makes that certain.

To help inform the Institute's views on aspects of retirement policy, we plan to hold an Insights session later on in the year. It will cover the broad demographic challenges and solutions that are being considered under the Financial Systems Inquiry and other reviews. Using this process as well as our existing committees, we can determine whether our official position on any of these retirement-related issues need to be changed, developed or updated.

BANKING AND FINANCE OATH

On a more personal note, I am a member of the Banking and Finance Oath Board (chaired by Stephen Dunne CEO of AMP Capital).

Our aim is to encourage individuals working in banking and finance to agree to adopt 'The Oath' and apply its principles in their work.

The principles contained in The Oath are:

- **Trust is the foundation of my profession**
- **I will serve all interests in good faith**
- **I will compete with honour**
- **I will pursue my ends with ethical restraint**
- **I will create a sustainable future**
- **I will help create a more just society**
- **I will speak out against wrongdoing and support others who do the same**
- **I will accept responsibility for my actions**
- **My word is my bond**

If you would like more information please go to http://www.thebfo.org.

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Pick a Fund. Any Fund. But, Pick One Now!

"Many knowledge. Such cash. So wow." I was having dinner with a friend after a twelve hour day of classes and this was the response from the aspiring engineer after I had explained to him the ins and outs of superannuation.

I was perplexed, for the friend in question had been in part-time work since he was 15; surely he would have taken the time to learn about his money? He had worked in retail for three years before moving to bartending, pays board to his mum, owns his own car (and has it insured) and recently booked a trip to Europe.

It's clear he always knows where his dosh is stashed, but only had a vague idea when it came to his super. A recent survey, commissioned by AustralianSuper, revealed "43% of people don't know their super balance, yet almost 50% know how many Facebook friends they have."

Supporting this are results from a recent REST Industry Super poll, which surveyed 1,007 youth aged 18-30 and found almost half could not explain superannuation. One in five thought it was government funded and one in ten believed it was a form of workplace benefit offered at the discretion of an employer.

I find it difficult to believe that a generation which so frugally saves its hard earned cash (albeit usually for expensive purchases) has so little knowledge about saving for retirement.

Longevity risk creates further problems. In a 2013 paper released by the Association of Superannuation Funds of Australia, it was shown that there is a 50% chance one member in a couple would live to 95 years of age. Given that this information is based on the life expectancy of today's 65 year olds, and using data from 2005-07 Australian Life tables, one can only imagine the retirement income issues that may arise when today's youth move into retirement.

For a range of probabilities, the following table shows to what age 65 year old females, males and couples are expected to survive. 50% of females are expected to live to over 90, and males over 87.

% surviving	Females	Males	Joint Life
90	76.1	72.9	85.9
80	81.7	78.1	88.4
70	85.2	81.7	90.2
60	87.9	84.6	92.4
50	**90.1**	**87.1**	**94.8**
40	92.1	89.4	95.2
30	94.2	91.7	97.5
20	96.4	94.2	99.5
10	99.5	97.7	102.7

It is crucial that young people take an active interest in their superannuation now. It is estimated that over 40 years, an extra annual return of 2% could accumulate to an additional $129,000 at retirement. Despite this, youth remain disengaged and uninterested in their superannuation.

The long time period for which superannuation money is saved away strengthens the effect of present bias, which is probably most evident when you choose to (repeatedly) hit the snooze button instead of going for a morning jog. The numerous tax breaks and concessions available to those who contribute to their super shows that the general population needs to be incentivised to save for retirement; youth are no different.

Here's a scenario: Have you ever walked into the supermarket to buy a tube of toothpaste, only to be confronted with an entire selection of the product and then found it difficult to choose which to buy? It's unlikely.

But the decision you are likely to have made was to make no decision at all. You will have picked up the one you usually purchase, without considering that for the same price you could have bought toothpaste that also has whitening properties or that a competing brand was offering a virtually identical product for half the price. The same can be said for superannuation.

American psychologist Barry Schwartz termed this the 'paradox of choice.' In his research, when two groups of shoppers were presented with either six or 24 jam varieties, those who had six options were 10 times more likely to make a purchase.

There are a plethora of funds available on the market and while it is good that consumers have so much choice, it is quite easy for less financially literate youth to be overwhelmed and make no decision at all. According to the REST poll, more than half the youth surveyed were in their employer's default fund.

The introduction of MySuper funds is a step in the right direction but more needs to be done. I would like to see the government develop a biannual or even quarterly newsletter (to which youth are automatically subscribed when they enrol to vote) emailed directly to youth to help increase financial literacy.

It need not be littered with jargon, but must be informative and persuasive enough to make youth want to take action. I would also encourage the private sector to consult with youth to develop simple but accurate product information, as many are deterred by the complexity of the topic.

It is important that youth are able to understand and form an opinion when it comes to their super. Let's make some changes to see that happen. A


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