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Actuaries DIGITAL

In this issue

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CareerView Podcast - The Rise of Digital Job Seeking

By Angat Sandhu and Nick Cowdery

The next instalment of the CareerView Podcast series discusses the rise of digital job seeking, from video CV profiles to online video interviews, new methods are attracting diverse talent.

In this podcast, Angat Sandhu (Chief Editor of Actuaries Digital) asks Nick Cowdery (actuarial recruiter and Director of InterAct Search) to explain the rise of digital job seeking and how job seekers can take advantage of digital media to advance their career.

"as technology becomes an increasingly important part of everyone's lives, it's also affecting recruitment and that means we're going to see some huge changes over the next few years." - Nick Cowdery

Listen to "CareerView - The Rise of Digital Job-Seeking" on Spreaker.

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Nick stresses the increasing importance of having both a traditional written CV and a video profile so you can demonstrate both your occupational excellence and a great personality to help managers and recruiters determine if you will fit into their workplace. Nick also discusses how video can assist in promoting a company's facilities and increase interest in their job advertisements through video profiles of the company.

"in the same way you can't get much out of a CV, you can't get much out of a job spec either and so I think that's the other area video is going to really play an increasingly important part. " - Nick Cowdery

Listen in to the podcast to hear the discussion on job seeking, job advertisements and how to be ahead of the game.

Download Transcript here.

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Asia Tour 2018 Report Part 2: Shanghai

By Kitty Chan *()*

Reading time: 4 mins

Kitty Chan reflects on the Institute's 2018 Asia Tour in Shanghai, including an interview with Shanghai-based actuaries Yu Sun (EY) and Minnie Tian (Minsheng Life Insurance).

Shanghai was the second destination of the 2018 Asia Tour following our stop in Hong Kong. Elayne Grace, the Institute CEO, hosted a networking dinner on 14 March and we were honoured to have Dr. Xie Zhigang, Director of the Insurance and Actuarial Science Research Centre at Shanghai University of Finance and Economics, as our special presenter.

Dr. Xie presented on the topic "*Work Together, Prove the Value of Actuarial Profession*". He shared insights with the audience about the great friendship and collaborations between the Australian actuaries and Chinese actuarial academics and professionals in the development of the Chinese actuarial profession.

Several milestones over the last 20 years include:

- Professor John Pollard visited Shanghai in 1998 and predicted that the actuarial profession would grow in Asia, and that there would be many actuaries working in China in 10 years time
- The AMP-Macquarie University China Fellowship was established in 1998
- In 2001, Fred Rowley, John Pollard and John Shepherd taught Control Cycle course in three Chinese universities
- Chinese academics worked together and translated the Actuaries Institute's Control Cycle textbook into Chinese in 2006




Dr. Xie called for further collaboration to prove the value of the actuarial profession in this new, global era. He raised some unsolved issues being faced by the actuarial profession, which have an important impact on society and the public:

- Product innovation
- Extension of service fields in emerging markets
- Industry regulation and standards
- Enhancing professionalism
- Theoretical foundation of Actuarial Science

Q&A with Shanghai-based Yu Sun and Minnie Tian

Here, Yu Sun and Minnie Tian share their stories from Asia and views on Dr. Xie's special presentation in Shanghai

Yu Sun, FIAA, Manager, Actuarial Services, EY China

Kitty: What brought you to Asia?

Yu: I grew up in Australia and joined EY after graduating from university, practicing in the field of non-life insurance since. During my time in Australia, I've had the pleasure of working across a wide range of clients such as large government insurance scheme regulators, self-insurers and commercial insurers.

EY has one of the largest and most prominent actuarial service team in the market with its members distributed across the world. In 2016, I had the opportunity to attend the EY Asia-Pac Actuarial Conference where I became exposed to the vastly different vibes of different Asian markets. I was intrigued by the evolving nature of the Asian market, inspired by my colleagues that were seconded to Sydney and decided to participate in EY's Global Mobility program. Fortunately, the Australian team and the Chinese team were happy to facilitate such an arrangement for me to discover and develop in this emerging market.

What challenges do actuaries in Asia face?

Yu: From my perspective, the challenge in Asia is the branding of actuaries and the market recognition of the value we add. Perception of actuaries by the wider audience has been recognised by the profession as something we need to focus on over the years.

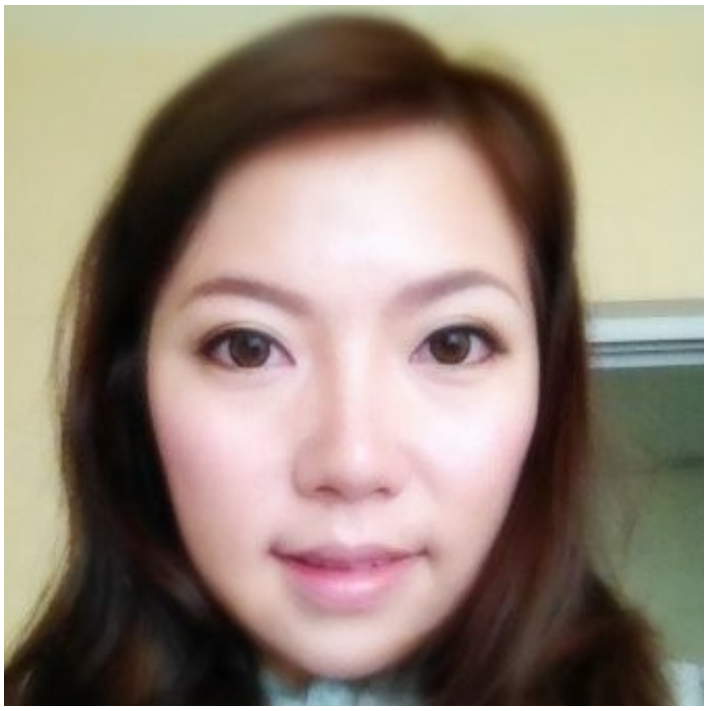
In the China market, actuaries are still establishing themselves as part of a respectable profession and have not yet achieved a strong sense brand perception in the market. Due to the nature of the developing market, many in the industry sees a very narrow role for actuaries and actuaries have not yet been utilised to their full potentials.

Kitty: What were your thoughts on Dr. Xie's Address in Shanghai?

Yu: The presentation delivered by Dr Xie highlighted the bond between Australian and Chinese actuaries through the development of China's actuarial education infrastructure. It was certainly surprising that several of the textbooks used in China's education system were translated versions of the very same textbooks I used while studying in Australia.

"As a profession, we should work to strengthen the bond between Australian and Chinese actuaries and promote channels of communication and knowledge sharing between our two markets" - Yu Sun

Minnie Tian, AIAA, Strategic Assets Allocation Manager, Minsheng Life Insurance



Kitty: What brought you to Asia?

Minnie: My name is Tian Tian (Minnie). After 16 years of a cosy life in NZ and Australia, I decided to move back to my home country of China in 2016, as I saw room for opportunities there, and I wanted to take on new challenges.

Kitty: What challenges do actuaries in Asia face?

Minnie: The working environment, regulations, accounting standards, insurance products are all very different. It was very hard at the beginning because these were all new to me. However, it was a good driver to push me to learn new things and take actions to overcome the challenges.

Kitty: What were your thoughts on Dr. Xie's Address in Shanghai?

Minnie: Dr. Xie's presentation was very interesting, and showed a lot of memorable stories between Australia and China. Given the strong historical cooperation, it would be meaningful that we keep the close interactions as he said. I think the Institute is of a great value to this, and it provides an open platform for us to exchange views with those practicing in Asia. This also helps members moving to Asia to adapt to the new environment and that makes life so much easier.

If you would like to participate and have ideas for the Asia Tour 2019 program, feel free to email Kitty Chan for further discussion.

FSF 'a must' for Super professionals

By Nicolette Rubinsztein

Curator of the Superannuation program for the 2018 Financial Services Forum in Sydney next month, Nicolette Rubinsztein (non-executive director at UniSuper, Class Limited, CBHS Health Fund, SuperEd and OnePath Insurance), gives us a taste of what industry leaders will be discussing at the Forum.

It's such a big year for financial services. We're in the midst of the Royal Commission. We've got four other reviews impacting insurance. We've got CIPRs and DSS changes happening for superannuation. And, finally, there's so much progress being made in the data analytics area. In these times of immense change, it's an opportunity for leaders to show how their companies can not just survive but thrive.

If you're working in superannuation, this is going to be a must come to event.

We're going to hear the latest thinking from all the big names in superannuation, including Michael Rice, David Knox, David Bell and Nick Callil.

We're also going to talk about the regulatory environment, so what's happening with CIPR's; the ISWG, DSS changes and deferred annuities. We're going to hear from Treasury.

One session I'm really looking forward to is Deborah Ralston and Jeremy Duffield's, looking at the digital side of how we can do CIPRs for retirement. Another great session will be that on data analytics in superannuation, which will feature four case studies on what's happening in that space.

View the video here:
https://youtu.be/dkt5sJ4yezc

I think super practitioners will find it valuable to not only get an update on the latest big issues, but gain the depth of insight that only comes from an actuarial approach to analysing these areas.

Taking inspiration from TED Talks

This year we've tried to up the ante on the conference. We've tried to take a more innovative approach and we've taken some inspiration from conferences like TED. One example is how we've appointed curators for each of the practice areas, with myself as curator for the superannuation practice area. I've had a lot of help from Nathan Bonarius from Rice Warner and Diane Somerville from Deloitte and together we formed the superannuation committee.

I hope you find this new approach to be a value-add. Personally, I have found it very liberating - putting together a line-up of speakers that I would like to see at our flagship event!

We've also tried to get Plenary and Keynote speakers who are 'big-picture' thinkers, who can push our own thinking; who can give insight but who are also very relevant to us as financial services professionals. I'm personally looking forward to seeing Aubrey de Grey on ageing and Trevor Gruzin from Accenture on technology.

So, I'm really looking forward to the Financial Services Forum this year, and I hope to see you there!

Asia Tour 2018 Report - Part 1: Hong Kong

By Kitty Chan

Kitty Chan reflects on this year's Asia Tour in Hong Kong, including an interview with HK-based FIAA, Chui Mei Siew and highlights from the Hong Kong visits.

The Presidential Dinner in Hong Kong was hosted by Actuaries Institute President John Evans, with the support of Actuarial Society of Hong Kong (ASHK) on 12 March 2018.

Kenneth Dai, the Vice President of the Actuarial Society of Hong Kong opened the dinner, before John Evans gave his Presidential Address to Hong Kong Members. The Address, which can be accessed in full here, discussed challenges and opportunities for the profession, including:

- globalisation of the actuarial profession;
- emerging new roles for Members;
- connections to local associations;
- conduct risk; and
- education.

Kenneth Dai

John encouraged the audience to make use of our global connections with other organisations to leverage their scale. Moreover, the Institute should develop, encourage and support members working in the new areas, he said.

Those gathered also celebrated Member's achievements, and Brian Tu was presented a certificate for the completion of the Associate program.

Congratulations to Brian Tu!

Q&A with HK-based Chui Mei Siew, FIAA

Chui Mei Siew, who was present at the Dinner, shared her own experience working in Asia with me, and personal views on the Presidential Address. Chui Mei is a Regional Director in the Chief Actuary Office at Prudential Corporation Asia.

Kitty: What brought you to Asia?

Chui Mei: In my 20 odd years as an actuary in the life insurance industry, I've had the privilege of working in Australia and Asia. The prospects of wider exposure to the different markets in Asia brought me to Hong Kong again and at the time it was also to take up a position in a regional internal audit function, focusing on actuarial work. Having always worked in the first and second lines, the new role offered a new perspective and challenge.

Kitty: What challenges do actuaries in Asia face?

Chui Mei: The challenges for actuaries in Asia vary depending on the market one is working in as markets in Asia range from highly developed to new and emerging. While an actuary working in a nascent market has the privilege of literally shaping the future of an industry and the local actuarial profession, there are many day to day challenges to contend with, for instance lack of investment opportunities due to underdeveloped capital markets.

Also, apart from having to navigate barriers of language and local nuances, local perception of risks can be very different. So actuaries are expected to develop business and leadership skills fairly quickly, often across multiple disciplines. With the fast growing economies in Asia and in turn insurance businesses, a continuing challenge for actuaries is the building of strong and sustainable actuarial teams in highly competitive environments.

Kitty: What were your thoughts on this year's Presidential Address in Hong Kong?

Chui Mei: I thought it was honest, thought-provoking and unfortunately not all good news; hence, the challenges. Changes and uncertainties are never comfortable circumstances, but it is reassuring that as a profession, we recognise them and are not afraid to tackle and address them. I have also always found the Institute to be, with its community of actuaries, open to and fast in embracing change.

Looking from the Asia context and life insurance in particular, actuaries are fully occupied, not just by virtue of developing markets but also by developments in new solvency regulations and the implementation of IFRS17, alongside changing business demands in the current wave of digital disruption.

A successful trip

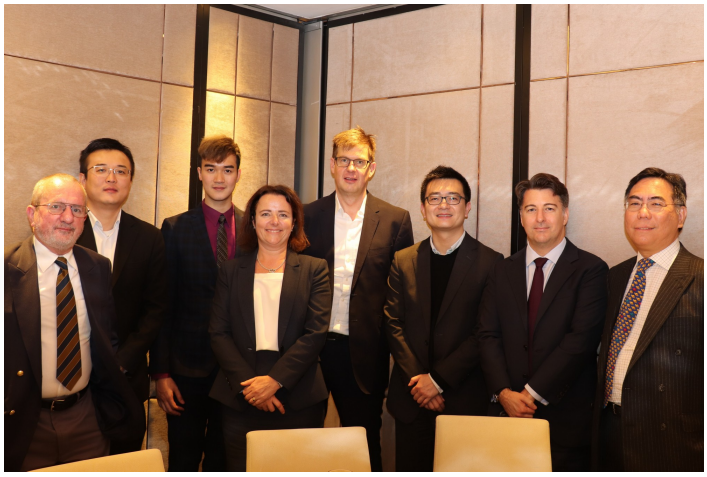
With the support of our Asian based members, volunteers and local hosting partners, the Asia Tour 2018 was completed in March. Elayne Grace, the Institute CEO and myself visited Hong Kong, Shanghai, Singapore and Kuala Lumpur, meeting with key stakeholders to discuss the issues and opportunities in the Asian market. We also hosted a few networking sessions with special presenters to further explore the challenges in Asian cities. Here are some of the highlights:

From left to right: Andy Yang, Elayne Grace, Raymond Tam and Steve Hui

We met with the Executive Director (Policy and Development) at the Insurance Authority, Raymond Tam. The IA is a new insurance regulator independent of the Government and recently took over the regulatory functions in 2017.

From left to right: John Evans, Elayne Grace, Kenneth Dai and Andy Yang

Meeting with the Vice President, Actuarial Society of Hong Kong, Kenneth Dai to discuss future collaborations and preparation for the Asian Actuarial Conference 2018.



From left to right: John Evans, Yifan Fu, Jeffrey Chan, Elayne Grace, Mark Wylie, Peter Fang, Paul Carrett and Andy Yang

From left to right: John Evans, Elayne Grace, Tony Cheng and Andy Yang

If you would like to participate and have ideas for the Asia Tour 2019 program, feel free to email Kitty Chan (kitty.chan@actuaries.asn.au) for further discussion.

CareerView Podcast - The Path to Becoming a Chief Risk Officer

By Gavin Pearce *(gavin.pearce@zurich.com.au)* and Susan Looi

The next instalment of the CareerView Podcast series discusses the path to becoming a Chief Risk Officer from the experience of icare's 'Chief Risky Dude' Gavin Pearce

In this podcast, Susan Looi (Head of Financial Risk, ANZ Wealth and Digital) interviews Gavin Pearce (Chief Risk Officer of icare) on his unusual path to becoming Chief Risk Officer, from studying statistics and mathematics in New Zealand, to resettling in Sydney and undertaking actuarial exams before securing an exciting new role

Listen to "CareerView - The Path to Becoming Chief Risk Officer" on Spreaker.

Listen on Apple Podcasts

Listen on CastBox

Gavin relays his career journey, including earlier roles as an Actuarial Analyst at Tower Investment Savings Ltd all the way through to his (self described) 'Chief Risky Dude' title at icare NSW, one of the largest general insurance provider in Australia and how he broadened his skill set to attain more senior positions.

Download Transcript here.

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"if you close your mind or don't avail yourself the opportunities to talk to a broad range of people, I think you're doing yourself, your job and your profession a disservice, so for me it's just get out there and talk to people, be the 'chief risky dude'." - Gavin Pearce

Listen in to the podcast to hear Gavin's advice on what skills actuaries need to future-proof their career and how to get their foot in the door of risk management.

The Critical Line - Volume 20

By Dan Mayoh *(dan@fintega.com)*

In honour of the 2018 Snooker World Championships which are being played this month, April's puzzle has a snooker theme.

Basically, your task is to count how many ways there are of making a break of exactly 100 points. First, some quick information on the relevant rules of scoring a break for those unfamiliar with the game (if you are familiar, you can skip over this).

At the start of a frame a snooker table has 15 Red balls, worth 1 point each, and 6 coloured balls worth between 2 and 7 points as follows:

Yellow = 2 points

Green = 3 points

Brown = 4 points

Blue = 5 points

Pink = 6 points

Black = 7 points

A 'break' is the total score earned by a player during a single visit to the table. The visit is over once the player misses a ball (or clears the table). Making a century break (100 points or more) is a big deal. Assuming there is at least 1 red ball still on the table, a player's first shot at the start of a visit will always be a Red ball. If the red ball is potted, it stays in the pocket and the player then attempts to pot a coloured ball (their choice which one). If the colour is potted, it is placed back on the table and the player then attempts another red ball, then a colour, then a red and so on. This goes on until the final red is potted, at which point the player pots a coloured ball of their choice, which is then placed back on the table, leaving the six coloured balls on the table. The player must then pot those **in order** from Yellow to Black, and they will stay in the pocket once potted. If at any point the player misses a ball, the break is over. The value of the break is the value of all balls potted, and a break can be characterised by the sequence of balls potted in the specified order. The maximum possible break (ignoring the free-ball rule, which this question is ignoring) is 147, earned by potting Red then Black 15 times in a row, and then the six colours in order. This earns (1+7)*15 + (2+3+4+5+6+7) = 147 points.

Note that every break greater than zero will commence with a Red ball, except when only coloured balls remain, in which case the break will begin with the lowest value coloured ball. From this you can see that every break of more than 27 must begin with a Red ball.

The primary challenge this month is to count the number of ways of possible breaks (characterised by the sequence of balls potted) that earn **exactly** 100 points (assume our player misses the next shot after scoring exactly 100, unless there are no balls remaining).

For example, there are exactly 5 sequences of 5 point breaks:

1. Blue
2. Yellow, Green
3. Red, Brown
4. Red, Green, Red
5. Red, Yellow, Yellow

Note that sequences (a), (b) and (e) are special cases. (A) can only occur when the break begins with just the Blue, Pink and Black balls remaining. (B) can only occur when the break begins with just the 6 coloured balls remaining, and (e) can only occur when the break begins with exactly 1 red and the 6 coloured balls remaining.

Also, a sequence of Red, Blue, Red, Black (which we can write as 1-5-1-7) is a different sequence to Red, Black, Red, Blue (which we can write as 1-7-1-5). Order matters!

So, how many 100-point break sequences are there?

If that is too easy for you, then here's an extension question. What value of break (from a minimum of 1 to a maximum of 147) has the most possible sequences? If you really want to impress me, show me a graph or table of the number of sequences for all possible break values from 1 to 147.

For your chance to win a $50 book voucher, send your solutions to ActuariesMag@actuaries.asn.au. You only need to answer the primary 100-point question to be eligible for the prize.

Volume 19 - Solution

We had 6 correct entries this month. Congratulations to Raymond Chow, Lawrence Uy, Dan Mayoh, Tim Yip, Andrew Parker, and Arvind Preetham. This month's winner of the coveted book voucher is Tim Yip!

Weighing Stones

You have a N stones in a bag and you wish to calculate the weight of the heaviest stone. You do this by randomly pulling the stones from the bag one at a time (without replacement) and weighing it. Each time the weight of the stone is the heaviest so far you record its weight. Assuming that the weights of each stone is identically distributed, what is the expected number of times that you will record the weight of a stone?

Solution

Consider the sequence of stones being pulled from the bag $s_1, s_2, \cdots, s_N$. The expected value of the total number of recorded weights is the sum of the expectation that each stone s_j is recorded (by linearity of expectation). The probability that s_j is recorded (i.e. is the heaviest stone so far) occurs with probability $\frac{1}{j}$. So the expected value of the total number of recorded weights is $\sum_{j=1}^{N} \frac{1}{j}$

Volunteer of the Year Awards

Volunteers to be recognised at 2018 Awards

By Lily Meszaros

Ahead of the Institute's second annual Volunteer Awards, taking place during National Volunteer Week, Lily Meszaros takes a moment to consider the impact of their generous work.

Over my last 20 months here at the Institute, I've had the chance to meet and work with many of our volunteers who contribute in so many ways. These volunteers continue to inspire me. They are busy professionals, like you, who find time to use their skills and experience to contribute to their profession.

The Institute relies heavily on the goodwill and support from its 500 + or so volunteers to implement key programs and initiatives ranging from education programs, events, public policy and contributing to digital communication content.

View the video here:
https://youtu.be/gJfn6i5LwSk

This is something to be proud of and we ought to celebrate these generous and passionate volunteers.

In 2017 the Institute introduced 'Volunteer of the Year Awards" to celebrate and recognise the effort of our volunteers who help enhance and extend the work of the Institute, bring new insights and ideas, and benefit the profession at large.

National Volunteer Week (NVW) runs from 21–27 May 2018; an annual celebration to acknowledge the generous contribution of our nation's volunteers. Thousands of #NVW2018 events will be held across the country to say thank you to the six million Australians who volunteer their time. Our Awards will be presented on 22nd May at the Hilton in Sydney.

2017 Award Recipients

Avanti Pakti - Young Volunteer Achievement Award for her leadership ability and her contribution to the Institute's Young Actuary Program in a such short time she's been in her professional working career. she was part of the 2016 GI Glimpse Organising Committee, Climate Change Working Group and 2017 YAP Conference Organising Committee which attracted more than 100 attendees and received a lot of positive feedback from those who attended.

Gae Robinson - Distinguished Service Award for her commitment and time involved in the Institute's Education System Review. As Convenor of the ECC, Gae ensures the Institute's education system is effective. This is one area that presents operational challenges and Gae has been instrumental in driving the change in the Institute's education system. Gae has been an active volunteer in many capacities since 1998.

"My volunteering experiences with the Institute have been rich and rewarding – I've had the satisfaction of making things happen, as well as working with lots of great people along the way. I encourage everyone who has time and passion to volunteer in an area that interests them.

I'm honoured to receive the first Distinguished Service Award – which could have gone to so many people!" said Gae in her acceptance speech.

Andrew Boal - President's Award for his long-term contribution to the Institute's key volunteer activities and his external positive influence on the profession particularly as a key contributor and commentator in the retirement income policy debates. Andrew was the Convenor for the Superannuation Practice Committee for nine years from 2008 to 2016. He also served on Council in 2012 and on the HR & Remuneration Council Committee (2012-2015). He is the current Chair of the Retirement Strategy group. He has been involved in over 140 submissions and two significant White Papers: *Australia's Longevity Tsunami, What Should we Do?* and *For Richer for Poorer, Retirement Incomes.*

View the video here:
https://youtu.be/esNCw_7qTac

"It is very humbling to receive the President's Award for my volunteer work with the Institute. The profession has provided me with so many career opportunities, it is a privilege to be able to support the profession in some way in return. At the same time, being able to influence public policy, especially in such an important area as retirement and the ageing, has been really rewarding for me personally," said Andrew in his award acceptance speech.

David Bell, former Actuaries Institute CEO, Avanti Patki (Young Volunteer Achievement Award), Institute Committee and Volunteer Engagement Manager Lily Meszaros, Gae Robinson (Distinguished Service Award), Jenny Lyon, 2017 Institute President, and Andrew Boal (President's Award).

This year we have introduced a fourth award category *The Spirit of Volunteering Award* which recognises the outstanding efforts of a volunteer who is committed and passionate about their volunteering duties. Someone who consistently contributes and helps others. Committee Convenors are especially encouraged to nominate outstanding members of their committees here.

We all know that one person who has gone above and beyond to ensure the work of the committee or the project is done, help us celebrate and recognise our outstanding volunteers by nominating them for an award.

- The Spirit of Volunteering Award
- The President's Award
- The Young Volunteer Achievement Award
- The Distinguished Service Award

Find out more and nominate in three easy steps:

1. Take a look at the criteria for each award;
2. Watch this short video; and
3. Submit your nomination via this short online form.

We value all our volunteers and the incredible job they do.

Aggregators within Private Health Insurance – Part 1

By Andrew Gower

Aggregators have become an important part of the Australian Private Health Insurance (PHI) industry, however, they are often discussed within submissions to government as having negative impacts and pushing up prices. In Part One of this two part series, health actuary Andrew Gower discusses the history and impact of aggregators.

While there have been small aggregators in the past, the most recent phase started with iSelect opening in 2000. They commenced operations with a focus on health insurance, and then expanded into other insurance classes, home loans, energy services, internet and telephone services. Health insurance remains their most important product, and sales of PHI generates about 50% of revenue and is the largest contributor to profits.

As iSelect developed a strong and profitable presence within Australian PHI marketplace; other aggregators also entered the market. While many of these have remained small (or stopped operating), Compare the Market has grown to a similar size to iSelect in PHI. They are backed by the Budget Insurance group based in the UK who also operate Auto & General Insurance and other general insurance brands.

These two aggregators have become an important distribution channel for some health insurers and are likely remain part of the environment within health insurance in the future.

Why do aggregators like selling PHI?

Aggregators are attracted to PHI for a range of reasons:

- An easy pricing basis, that is based on 2 core rating factors. This makes it easier to train staff and is easier to build and develop internet and customer relationship systems. In addition to these factors, insurers are more comfortable sharing pricing since the underlying pricing algorithm isn't as material a driver of performance like it is in other personal lines of insurance. All prices (and most key product features) are also publicly available allowing easy comparisons to be developed.
- Unlike other classes of insurance, health insurance isn't a financial product. This reduces the compliance costs for the aggregators as there aren't the product disclosure or training requirements compared to financial products. More importantly, this means that commission terms don't need to be disclosed to customers, hence assisting aggregators with their contracting with insurers.
- The products are complex and health risks are not well understood by customers. Aggregators have developed easier to understand approaches to explain what was covered and have increased the transparency in PHI.
- The PHI industry is highly fragmented with over 30 insurers; many of whom were regional players. Hence, many insurers had very limited market share outside of a small region and

the costs of expansion (e.g. brand development and distribution) would have been prohibitive. By using aggregators, these regional insurers have greater access to customers outside of their local region without the need to build their own brand.

- Customers have a complex relationship with any insurance product. For many customers, PHI was purchased for either a specific health need (e.g. obstetrics), tax purposes or since they are about to turn 31 and want to avoid lifetime health cover. While these are valid reasons to purchase, they require additional effort to develop broader, long term relationships between insurers and their customers.

The impact seen within the PHI industry

Since they launched, iSelect has had a material impact on the Australian PHI industry. They have been the third highest spender on marketing (behind Medibank and Bupa), and have played an important part of increasing customer focus within the industry as a whole.

They have also increased the level of churn within the overall industry. Seven years was once considered an appropriate average length of retaining customers, with this having reduced to four years. This leads to reduced time to repay any acquisition expenses; pushing up prices or reducing returns within the industry.

By taking sales away from other channels, insurers have also had to review their own distribution approaches. For the larger insurers (who operate on a national scale), this has meant a reduction in branches which in turn reduces the brand presence they have and removes an important service channel for customers.

For smaller, regionally focused insurers; the aggregators have opened up a new sales channel and offered growth outside of their traditional region. For many this has been a positive and offered increased scale and an increased ability to invest in their local community. There have also been cases where pricing, which was appropriate for their historical region, has needed to increase to cover the changes in risk. Due to the capital held, this hasn't led to insurers facing financial destress but has challenged pricing assumptions.

Aggregators have also increased the focus on the price paid by customers. This is not to say there is no focus on coverage by aggregators, just that there is an increased focus on price once coverage needs are decided. For insurers, this has increased the internal focus on commercial pricing, the value that customers see within their products and ensuring that the business is as efficient as possible.

In Part Two, we discuss the key response taken by insurers to date, look at possible reforms that may counter some of these challenges and the potential for actuaries to assist insurers understand and meet the challenge.

Stress and Scenarios

By Jeremy Waite

Insurers and reinsurers are in the business of risk management, and one key question preoccupies their minds: "What's the worst that can happen?" Jeremy Waite explores this question through the lens of scenario and stress tests, examines the merits of these approaches and highlights the necessary considerations.

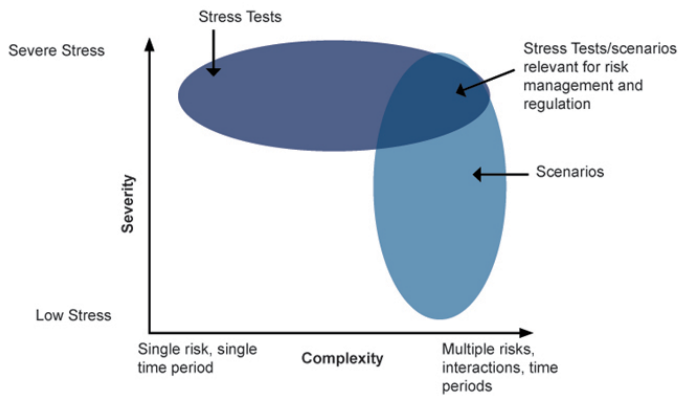
Stress tests and scenarios are used by companies and regulators, in order to explore the potential actions, post a "scenario event".

In insurance, this could be to explore policy limits from plausible events, or to think through correlations that may not otherwise be considered. Lloyds have been considering scenarios for more than 20 years, and typically describe an event and the syndicate would need to consider all the covers that it offers which could be impacted, as well as its own protections.

This became very real to the author following the World Trade Center events, where airline hull losses became 100% correlated with buildings losses, and even whether this was one or two events on the insurance side, and whether one or two on the reinsurance side.

The International Actuarial Association (IAA) has defined **a scenario as:**

"a possible future environment, either at a point in time or over a period of time. A projection of the effects of a scenario over the time period studied can either address a particular firm, or an entire industry or national economy. To determine the relevant aspects of this situation to consider, one or more events or changes in circumstances may be forecast, possibly through identification or simulation of several risk factors, often over multiple time periods. The effect of these events or changes in circumstances in a scenario can be generated from a shock to the system resulting from a sudden change in a single variable or risk factor. Scenarios can also be complex, involving changes to and interactions among many factors over time, perhaps generated by a set of cascading events. It can be helpful in scenario analysis to provide a narrative (story) behind the scenario, including the risks (events) that generated the scenario."

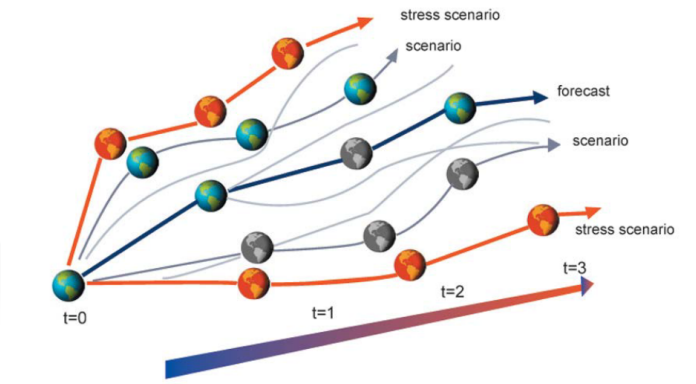


Source: Stress Testing and Scenario Analysis, IAA (July 2013)

The IAA has defined **a stress test as:**

"a projection of the financial condition of a firm or economy under a specific set of severely adverse conditions that may be the result of several risk factors over several time periods with severe consequences that can extend over months or years. Alternatively, it might be just one risk factor and be short in duration. The likelihood of the scenario underlying a stress test has been referred to as extreme but plausible."

The illustration below makes clear **the distinction between stress and scenarios:**



Source: Stress Testing and Scenario Analysis, IAA (July 2013), t represents time.

Stress tests and scenarios are a useful alternative method of measuring adverse outcomes in a way that is more easily understood by boards and senior management within a company. These scenarios can consider risk beyond the normal modelled loss and indeed consider things that seem remote.

Stress scenarios are one way to quantify catastrophic loss potential and thereby manage exposure. The Scenario approach has the following advantages:

- Less complex approach – Easily understood by non-technical management, board members and other interested parties;
- The output is "Board-friendly" and can provide significant insight into the effectiveness of a company's catastrophe risk strategy without unnecessary management time investment;
- Assumptions are explicit and able to be altered at an event level (e.g. vulnerability factors);
- The resultant loss is based on a realistic event, not a reading of an OEP curve at a particular return period (which is contributed to in a probabilistic manner by many events);

Natural Catastrophe Scenarios

In Australia, it would be necessary to consider not just major perils, such as earthquake and cyclone, but also more frequent perils such as flood, cyclone, storm and bushfire. Events occurring overseas could have a substantial impact (direct or indirect) on APRA regulated insurers, and as such may need to be factored into the analysis.

The following highlights some of the key considerations when developing realistic disaster scenarios:

Modelling Assumptions

- It is important to ensure that the underlying exposure information is accurate, and reasonable assumptions and adjustments are used in the scenario analysis; and

Multiple Events

- Scenarios could include multiple events within a short timeframe (e.g. 2 Earthquakes within 30 days within a similar geographic area), potentially occurring over a reporting or reinsurance treaty year.

Un-modelled perils

- Scenario events do not need to be limited to perils covered by vendor models and other relevant perils could be considered (e.g. Tsunami) if material.

Scenario Updates

- The event scenarios should be regularly reviewed and updated to ensure they represent material catastrophe risk to the insured.

Vulnerability Estimation

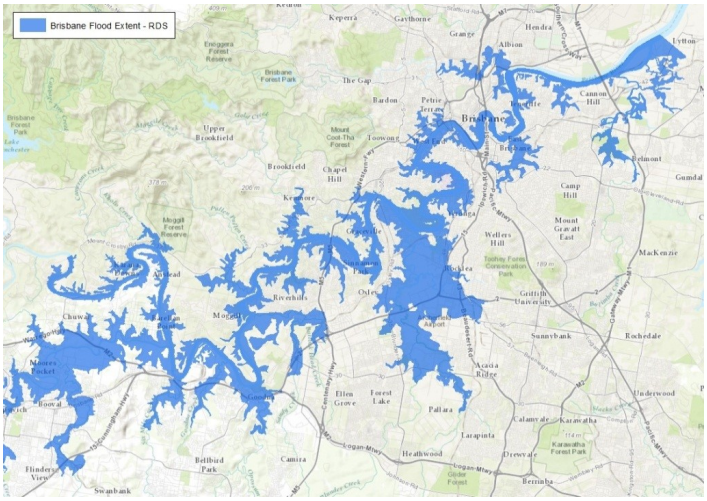
- Scenarios can be stress tested in that they contain damage assumptions which can be varied in realistic ranges. This is a practical and deterministic way to consider secondary uncertainty.

Secondary Perils

- It is necessary to consider secondary perils which may have a material impact on the insured. For example, with earthquake, it is important to consider other secondary perils such as liquefaction and fire following. For cyclone, it would be necessary to consider storm surge and precipitation flooding correlated with cyclone events.

Natural peril scenarios typical feature

- A definition or description of the physical event, with a map showing the hazard footprint or area affected (e.g. below we show the Brisbane 1974 flood extent)

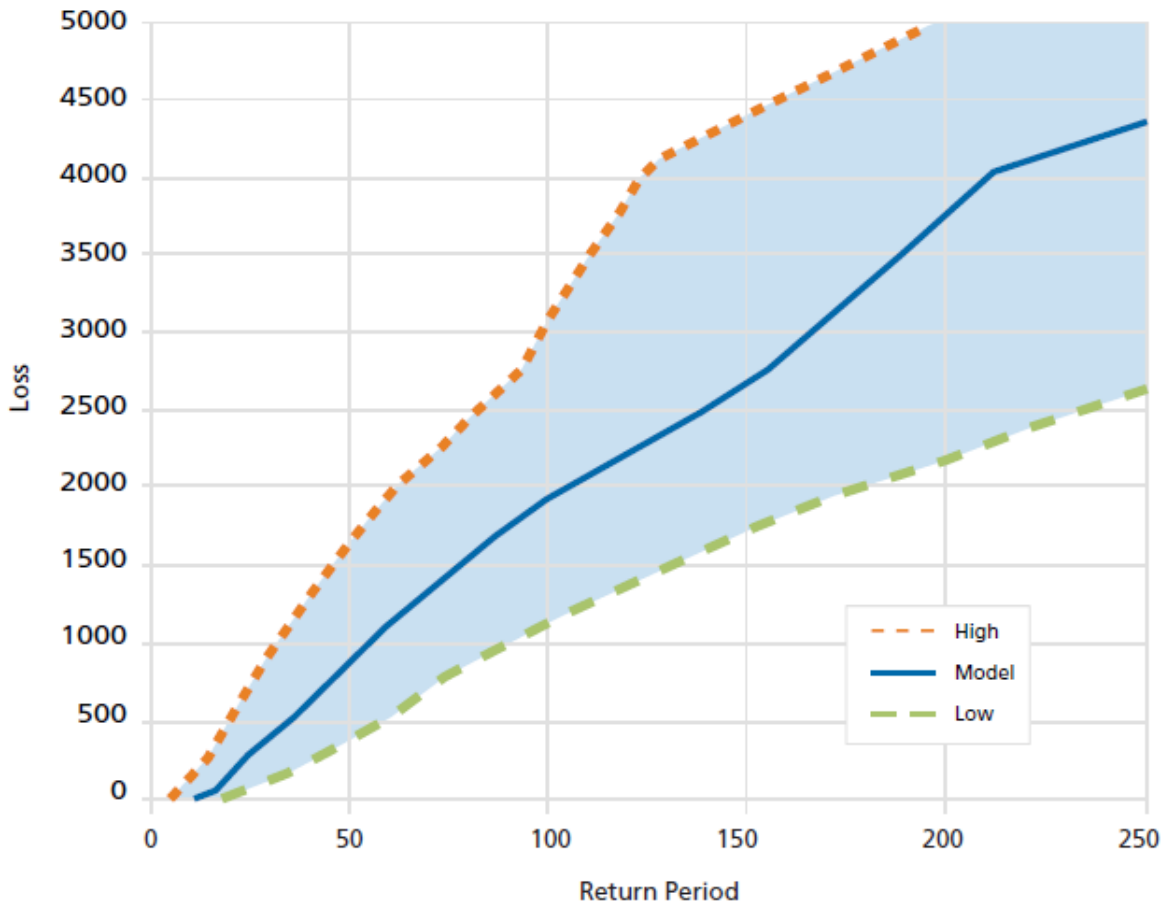


- The assumed industry insured loss which could be split by line of business, e.g. Property– Domestic, Commercial Industrial, or include other classes of business if material (e.g. Marine); and
-
- Other details could be provided (e.g. where applicable, a catalogue of major infrastructure (i.e. ports) that may be affected by the event, and consideration of wider impacts, knock on impacts.

Conclusion

Scenarios are a useful complement in risk assessment and strategic planning, and can highlight the need to avoid, mitigate, reduce or transfer risk.

FIGURE 1: CATASTROPHE MODELING: AN IMPRECISE SCIENCE



GUY CARPENTER

Source: RMS and Guy Carpenter

YAP Workshop - Climate Data and Insurance

By Mariella El-Azzi

Participants of a recent YAP Climate Workshop were asked to cast their minds forward to 2025 in a fictitious scenario where the small town of Derby, WA – now 'New Derby' – is a similar size to Darwin with a population of 100,000.

Welcome to Paradise… Derby, WA. A small town of approximately 3,500 people (2016 Census), located in the Kimberly region of northern Western Australia. It is surrounded by many special attractions and Aboriginal cultural heritage. Despite the beauty of this town, it is prone to a number of natural weather events. Derby is faced with the second largest king tides in the world. The town is also prone to tropical cyclones and storm surge.

At the Young Actuaries Program Workshop (YAP), run in conjunction with the National Environmental Science Program's Earth Systems and Climate Change Hub, Nick Wood from Climate Policy Research and Sharanjit Paddam, Convenor of the Actuaries Institute's Climate Change Working Group, asked participants to cast their minds forward to 2025 in a fictitious scenario where the town – now New Derby – is a similar size to Darwin with a population of 100,000.

"We, as young actuaries, should aim for further understanding of the cause and effect of climate change and how we can better incorporate it into our work to find solutions for the increased financial costs we will face."

The scenario

The plan for New Derby included building 5,000 new houses, an airport, a 400-bed hospital and an expansion of its existing pier and ship loading facilities. With a plan of this size and the weather conditions the town is subject to, we, the participants, were asked to brainstorm points related to the costs, time frames, weather risks, resilience methods and insurance coverage for each of New Derby's assets.

While weather events are generally taken into consideration through catastrophe modelling, they do not directly take climate change into account. So we were also asked to consider the impact of climate change on this plan and how an insurance company might decide to approach the risk. Each group, with the help of climate change science researchers Earth Systems and Climate Change Hub, came up with insights and presented their ideas to the crowd.

I've included some of the main take-aways from this event as I cannot fit in all of the great ideas within this one post-event write-up. As the organisers probably intended, we were all left with more questions and ideas than we could come up with answers. This highlights the importance of the issue for the financial sector and the need for further investment of research and time.

Insurance Coverage for the New Derby

The insurance coverage varied for each asset and individual home. Derby's exposure to natural weather events will most definitely be reflected in the pricing at a risk level. We thought the most important cover types to Derby were buildings, contents and business interruption. Buildings and contents are expected to be impacted due to damage from storm, cyclone, high tide or any other natural weather event. Business interruption insurance will also price with the same weather considerations as it will be expected to encounter frequent occurrences of business interruptions in the town. The port, airport and hospital will most likely be covered by a syndicate type insurance as we do not imagine one local insurer opting to take on all the risk.

"The frequency of natural weather occurrences might mean that insurers could possibly choose to 'price-out' of the market for Derby, leaving residents and business owners with no affordable insurance options."

We can see this has already happened to some degree in the Australian insurance market based on the ongoing Northern Australia Insurance Inquiry by the ACCC since May 2017.

To add some further complications to the scenario, when do we include the impact of climate change? Given there is already a large build-up of natural hazards risk, what will happen once we start to include the impact of potentially higher losses in the future?

Pricing for Resilience

It is not only in the interest of the insurer to have a resilience plan in place, but also for the home-owner, tenant, business owner, etc. Resilience is important for everyone as it impacts living standards. But who should be responsible for paying for resilience? We can see the direct benefit for all parties, but who is responsible for the cost?

Furthermore, are insurers even adjusting their pricing for resilience measures? If insurers do not reduce the premium for home and business owners who undertake resilience measures, then there is little direct financial incentive for owners to invest in resilience.

Building for Destruction

Most resilience measures will result in higher building costs. As the risk of catastrophes increases, that cost will also increase. Perhaps it may be a better idea to build destructible houses that are cheaper and quicker to rebuild? Depending on the frequency and severity of events, this might be a cheaper option in the longer term.

Risk Rating vs. Community Rating

The increasing amount of data we have access to has allowed insurers to price on an individual risk level where home owners can see significant differences in premium. For example, homes closer to the coast in Derby who have a greater exposure to storm surge may receive a significantly higher premium loading than homes further inland. To make insurance affordable for everyone, the concept of community rating was raised where everyone will be charged the same amount regardless of location – similar to how health insurance premiums do not differentiate between low risk healthy young people and high risk less healthy older people. However, will someone at the top of the hill be okay with paying a higher premium to subsidise the higher losses of someone living at the bottom of the hill? As risks increase under climate change and insurers get better at risk pricing, these questions of fairness will arise more and more.

To conclude, this workshop highlighted the impact of climate change on the financial sector and how we have more questions than answers when it comes its effects. Despite access to sophisticated catastrophe and natural peril modelling, adding climate change into the mix adds a new level of "unknown unknowns". We, as young actuaries, should aim for further understanding of the cause and effect of climate change and how we can better incorporate it into our work to find solutions for the increased financial costs we will face.

2018 Actuarial Hackathon - Update

By Emily Law

The Actuarial Hackathon Committee is excited to provide a much anticipated update on its very first actuarial hackathon event, sponsored by Finity Consulting.

We've worked hard on preparing and organising the logistics of the event, setting key dates and venues and building partnerships with not-for-profit organisations. We are happy to confirm that that we will be partnering with the following charities to help solve their problems:

- Cancer Council NSW
- CanTeen
- Compassion Australia
- Cure Brain Cancer Foundation
- Heart Foundation
- Life Changing Experiences Foundation
- Opportunity International Australia
- Starlight Children Foundation
- The Benevolent Society
- The Fred Hollows Foundation
- Wesley Mission
- Youngcare

Who?

Any member of the institute regardless of background and years of experience are welcome. We are currently looking for more volunteers so if you'd like to use your actuarial skillset to make a meaningful contribution to society – register now!

What?

Volunteers will work together in small teams and with their respective not-for-profit organisation to develop a solution to a real business problem.

As an example, the types of problems will vary from:

- Estimating long-term impacts and outcomes of programs and initiatives
- Client segmentation and understanding client journeys
- Data analytics and visualisation to understand drivers of experience and draw meaningful insights
- Predictive modelling to estimate the likelihood of a certain event e.g. lapse/cancellation rates
- Building long term projection models to estimate expected inflows and outflows

It's a fantastic way to meet and learn from other passionate actuaries and earn CPD points while you're at it!

When?

The hackathon will run during the month of **May** (after exams of course) and the teams will present their solutions to the not-for-profit organisations held on the night of **Tuesday 5 June 2018**.

Where?

Teams will be presenting their ideas at the **UNSW City Campus.**

If you have any questions, please feel free to email Emily.law@pwc.com

Register HERE

Letting Insurance Asset Data Speak for Itself

By Andy Yang and Thomas Tang

In late 2016, the Society of Actuaries (SOA) commissioned a paper on asset allocation trends of Asian life companies. Two FIAA's who co-wrote the paper "Letting Insurance Asset Data Speak for Itself"[1] highlight its key findings here.

SOA commissioned the paper from Coherent Capital Advisors Ltd (based in Hong Kong). It can be accessed in full here. This paper will be relevant to Australian actuaries who have an interest in life insurance business in Asia and in particular the asset management aspects. The life insurance market in Asia is significantly different to the Australian market – distribution is still by and large via agency channel whereas more traditional products (such as whole-of-life, endowment and universal life) are dominant. The asset allocations of Asian life companies reflect these differences.

Data Sources and Aim

At the time, we had accumulated a database of asset allocation data of major life insurers across eight Asian markets (China, Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand) over the four years to 2015[2]. This information was collected from various regulatory and audited sources and enriched with subjective commentaries from market practitioners particularly where data was lacking. Based on this information, we sought to explain some high-level trends in asset allocation.

Low interest rates and high growth

Given the paper was prepared for an American audience, we started with a "compare and contrast" of some aspects of the above Asian markets with the United States. Unsurprisingly, business growth rates, product mixes and investment market features vary across geographies. However, one global theme is the low interest rate environment that has proven a fundamental challenge to life insurers in sourcing long-term assets with decent yields and acceptable risks to back liabilities. Asian insurers can be heavily constrained: explicitly in what and how much assets they can invest under the local capital regime, and implicitly by the lack of depth and breadth in their respective asset markets. As an example, in Taiwan the entire government bond market is less than half the size of life insurance industry assets. Such lack of depth is not seen in developed markets such as the United States[3].

With an impressive annualized growth of 14% from 2012 to 2015, the assets under management (AUM) for the covered insurers in the markets reached US$2.4 trillion. Over the period, China recorded the highest annualized growth of 17%. Taiwan and South Korea managed to grow AUM at broadly the same pace as developing/emerging markets in the Association of Southeast Asia Nations (ASEAN).

Hunting for higher yield – more risky assets, less government bonds

The data shows signs of insurers shifting relative exposures from low-risk government bonds to riskier asset classes to generate sufficient returns to meet guarantees to policyholders and their reasonable expectations. Over the three years to 2015, the AUM for equities and real estate grew at 28% p.a. and 19% p.a. respectively – far outstripping that of government bonds at 8% p.a. Yet the demand for government bonds is expected to remain strong, given the relative regulatory advantages in terms of credit risk capital and the role of bonds in interest rate risk management.

Venturing into alternatives

Another theme that has emerged is the demand for alternative investments domestically and internationally — for example, infrastructure debt and foreign investments. We see potential for growth in real estate investment, given this asset class represents a lowly 2.7% in 2015. The recent wave of deregulation in several Asian markets and the growing size of AUM allow insurers to consider investing in large illiquid assets. The paper examined insurers' allocations to real estate investments in the Taiwan and South Korea markets as case studies.

Looking ahead

Lastly, regulatory frameworks are converging toward risk-based capital regimes in Asia and have strengthened the capital positions of various markets along the way. Duration mismatches continue to expose insurers to interest rate risk and higher risk capital charges, particularly in low interest environment.

[1] https://www.soa.org/research-reports/2018/2018-asia-insurance-asset/ published Q1, 2018 by the Society of Actuaries

[2] The database has been expanded to include Vietnam (insurer level) as well as Australia and New Zealand (country level only) and updated to 2016 and 2017.

[3] Data on the size of the Taiwanese government bond market from *Central Government Bonds Issued, Repayable and Outstanding Balance Sheet*, Central Bank of the Republic of China (Taiwan), 4th December 2017, https://www.cbc.gov.tw/public/data/71251548871.pdf. Data on Taiwanese insurer AUM from *Table14: The Balance Sheet of Insurance Industry,* Taiwan Insurance Institute, 9th February 2018, https://www.tii.org.tw/opencms/information/information1/000001.html

Volunteering for good – Q&A with the 2017 President's Award recipient

By Andrew Boal

Andrew Boal, Willis Towers Watson Regional Head of Australasia is one of the Institute's longest serving volunteers. We asked what he's learned after nine years as a Committee Convenor, and why he continues to serve as a volunteer.

1. You have volunteered with the Institute in many capacities for a long time. What drives you to do this?

The profession has provided me with so many career opportunities, it is a privilege to be able to support the profession in some way in return. At the same time, being able to influence public policy, especially in such an important area as retirement and the ageing, has been especially rewarding for me personally.

2. You were Convenor of the Superannuation Practice Committee (SPC) for nine years, what top three tips do you have on managing a successful committee?

It took me a little time to figure out how to best manage a Committee and to get the most out of it. One of the keys is to have great people around you on the Committee and to learn how to delegate responsibility for various aspects, to allow them the freedom to use their knowledge and experience to achieve the desired outcome. At times, there will be differing views around the table and among the profession, so it is very important to listen to all the different perspectives, find the common ground that is in the public interest, and identify a way forward that we can all agree on. Stakeholder management is therefore a very important role for any Convenor of a Committee.

View the video here:
https://youtu.be/esNCw_7qTac

3. Share one or two highlights of your experience as a Volunteer for the Institute?

One of the highlights of volunteering is being able to work with very experienced actuaries from other firms towards a common goal, on behalf of the profession and the community. After all, we always aim to influence public policy for the benefit of the community. While some things take longer than you would sometimes like, we have made some great progress recently in the regulatory environment for retirement income products. We are also continuing our work on enhancing the education and disclosure regime to improve the communities understanding of their personal retirement needs, the various risks involved and how to make good choices in the complex world of superannuation and financial products.

4. You were the recipient of the Presidents' Award in the 2017 Volunteer of the Year Awards. What does this award mean to you?

It was very humbling to receive the President's Award for my volunteer work with the Institute. It is not something you do for recognition, but it is good to know that your efforts make a difference and are appreciated. It was also a good opportunity to promote volunteering, as the Institute relies on the goodwill and efforts of its many volunteers to do everything it needs to do and to continue to make a difference in many public policy and professional areas.

5. What can the Institute improve to ensure its volunteers feel more supported and recognised?

I think the Institute already does a very good job in recognising the efforts of its volunteers. While more support would always be appreciated, it is difficult in a professional body like ours as we will always have limited resources - in order to keep our costs down. I think that the Institute does a really good job in finding the balance.

Nominations are now open for the 2018 Volunteer of the Year Awards across four categories. Nominate now by submitting this short Nomination form

View the video here:
https://youtu.be/b-frr5QzU4Y

Presidential Dialogue: Part III and CPD Education Reform

By John Evans *(jevans@pgeaus.onmicrosoft.com)*

In this opinion piece, 2018 President John Evans discusses the need for reform in how the Actuaries Institute provides Part III education to students and lifelong learning to members through CPD.

The Institute has released my Presidential Address which is intended to facilitate a dialogue throughout the year on topics where I consider we all need to engage to reach a consensus on the appropriate response of the Institute to issues that are of strategic importance. You can respond to my comments in this Discussion Forum. In addition to the Presidential Address, I will raise similar strategic issues in Actuaries Digital and you can respond to these issues by accessing the same Discussion Forum.

Almost all of the Part III students come to the Actuaries Institute via an undergraduate program at an accredited university. During their undergraduate program students can expect to receive a very high level of support in achieving their degree through program level expected outcomes, integrated learning outcomes at the subject level, and a teaching and learning system that involves regular assessments with feedback.

The entire university education system is aimed at ensuring through support that students can achieve the best outcome for them that is possible. When these students undertake their Part III subjects at the Actuaries Institute they have an expectation of similar support to that which they received at university. The Actuaries Institute education system is currently designed as self directed adult learning. It has become clear that students need and expect a higher level of support and therefore the current Part III program is in need of reform to meet the students' expectations.

Council has allocated significant funds for this reform in 2018 and similar financing will be required in at least 2019 and 2020. The first step in the reform process has been to employ professional educators whose role is to assess what changes need to be made in the Part III education process and what schedule of changes can be reasonably implemented. Council is holding a special meeting in May to consider the detail of plans that are being developed to improve the teaching and learning experience of our Part III students.

As well as some short-term improvements, there are some longer-term issues that need to be discussed and assessed to achieve the best long term outcome. One of the issues that needs to be taken into account is the affordability of the continuous improvement that will be required in the teaching and learning of Part III subjects as we are a relatively small organisation with limited funds, and just do not have the scale of the larger actuarial organisations with whom we compete for Part III students. Globalisation of the profession will alert students to the options available to them for their Part III studies and it would be foolish to assume Australian students will continue to automatically choose the Actuaries Institute's Part III program.

"It is imperative that to attract Part III students that we adopt the reforms being proposed, and we continue to improve the teaching and learning process. One of the consequences of an improved teaching and learning process is that pass rates should improve."

As well as reform of the Part III program we need to improve the CPD program to better meet the lifelong learning needs of members, including both up-skilling and cross-skilling. Whilst there are a lot of activities and offerings available, these are often not recognised by members and an integrated website is being planned to assist members to access appropriate offerings. As well as our own offerings and activities it is intended to bring to members' attention through this website to relevant offerings of other organisations. Online courses and digital offerings will be increasingly made available so that members not resident in Sydney and Melbourne can have access to the CPD resources and activities.

The combination of the Part III and the CPD reforms will be the major activity of the Actuaries Institute over the next few years and is critical in our maintaining our value proposition to both current and future members. The reforms do not come cheap and will use a significant part of the financial reserves that have been accumulated over the last few years. Council is very

conscious of this expenditure and is closely monitoring outcomes against expectations. There is to be a major review of the Part III reforms in December to ensure the process is achieving expectations.

Feedback and alternative views can be expressed here.

John Evans

President 2018

Under the Spotlight - Asia Series - Terence Chiu

By Terence Chiu

Strategy Consultant at Willis Towers Watson (Hong Kong), Terence Chiu goes under the spotlight to share a snippet of his life as an athletic, distracted and hungry actuary working overseas.

Summarise yourself in one sentence… to stop acquiring new knowledge is to stop living.

The sport I most like to watch… Formula 1

The last book I read (and when)… *Prisoners of Geography* by Tim Marshall – living our ordinary lives, in the 21st century in a western society, it is easy to just accept the world as it is. But you don't have to look very far back to see how different the world was – how country borders were drawn where they shouldn't have been in the first place – and the impact this has had in ensuring that conflict continues to exist in the Middle East and Africa.

My favourite app… Spotify – I need it to drown out the sound of the office.

What gets my goat… People who are afraid to speak their mind – or is there nothing going through their head?

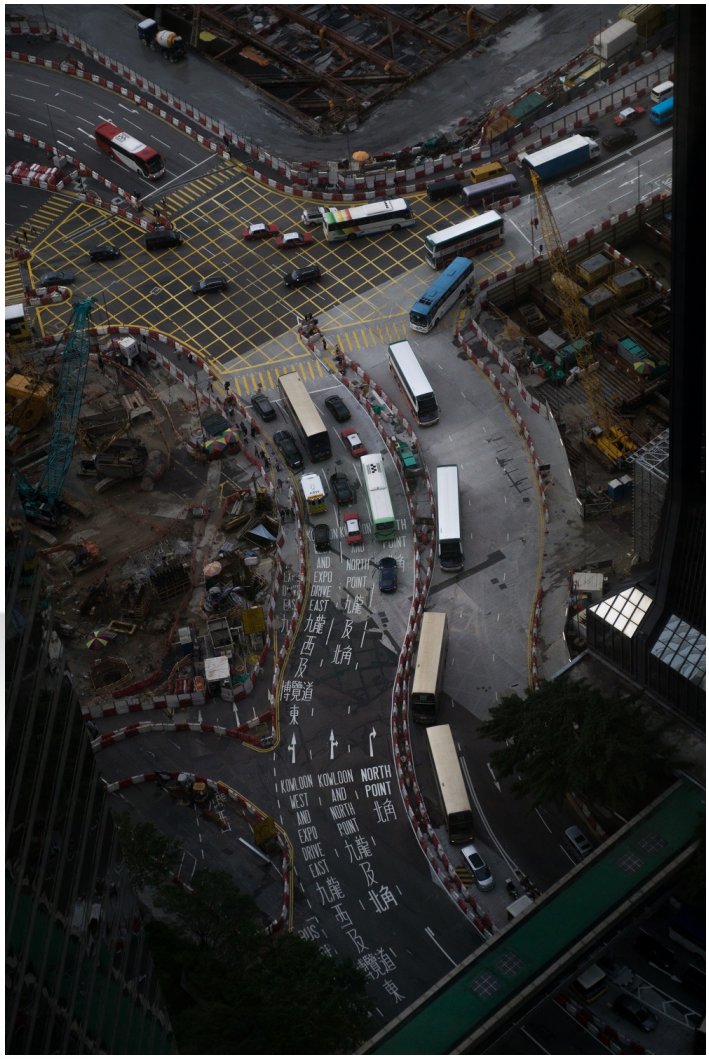
Not many people know this but I… am good at judging a book by its cover.

If I hadn't become an actuary, I would be… I don't know. I'm an actuary because I didn't know what I wanted to be.

Why and how I became an actuary… See above. I guess I just fell into it, and it was a fluke.

Where I studied to become an actuary and qualifications obtained… Melbourne University Bachelor of Commerce (Hons), majoring in Actuarial Studies. Qualified whilst in Hong Kong with FIAA and CERA qualifications.

My work history… Actuarial Analyst at Mercer (Melbourne) where I conducted actuarial valuations for pension schemes and friendly societies. Consulting Actuary at Willis Towers Watson (Hong Kong) where I mostly conducted large scale project implementation work in the pension environment. I am currently a Strategy Consultant and provide m&a and consulting support to insurers in the Asia Pacific region.



Hong Kong – where construction never stops and double decker busses are ubiquitous.

My role's greatest challenges... finding a way to bring value to clients as an actuary in a world which requires less and less 'traditional' actuarial advice.

Who has been the biggest influence on my career (and why)... NELSON YU (aka Nelly, Fish) (FIAA, CERA, CFA), because he knew ALL the gossip at work, and he taught me how to question absolutely everything at work, and understand the motives behind people's official business goals.

At least once in their life, every actuary should… work overseas. As an actuary, we are very fortunate to have a career that can take us around the world. Doctors – are not qualified to practice outside of their own country. Lawyers – are not familiar with other local legislation to become a specialist. But one plus one will always equal two no matter where you are in the world.

When I retire, my legacy will be… making a difference the working culture of people I work with in Asia.

My view on cultural differences is… I'm glad they exist, and until the world becomes just one single country, you should expose yourself to as many of them as possible. It's humbling, learning about why they exist, and the reason for different cultural norms.

Ouarzazate, Morocco.

Why I'm proud to be an actuary… because it's a small club.

The most valuable skill an actuary can possess is … the actuarial skillset. Once you understand the skills and knowledge you acquired as part of your training, you realise that being an actuary is not about being good at numbers, but it's about being able to dissect and understand business situations.

My best advice for younger actuaries… being an actuary isn't about being good at numbers. It's about being good at problem solving – and to be very good at it. One day you will be put in front of an audience, a client or senior management, and you will be asked questions you did not prepare for. If you cannot think of an answer to a question you have not thought about within five seconds, you will risk ruining your own reputation, but the reputation of actuaries…

If I won the lottery, I would… travel the world and become a storyteller.

2018 Insurance CRO Forum

By Actuaries Institute *(Actuariesmag@actuaries.asn.au)*

Three very different perspectives from a Strategist, a Board Director and an Innovator were presented at the annual Insurance CRO Forum at the Actuaries Institute.

The annual Insurance CRO Forum was held at the Actuaries Institute on Tuesday 6 March 2018. The focus of this year's discussion was the interaction of risk management with strategy and innovation. The subject was discussed from three very different perspectives during the half-day forum – a Strategist, a Board Director, and an Innovator.

The forum was facilitated by Gavin Pearce, CRO, icare (pictured below), who opened the forum with a formal welcome and Acknowledgement of Country. In his opening remarks, Gavin commented on the need for companies to be innovative – "if you're not disrupting yourself, chances are someone else is."

The forum consisted of three plenary sessions:

- Plenary 1 was presented by Amy Barouch (General Manager of Strategy, icare) who discussed Strategy Creation.
- Plenary 2 was a Director's View by Lisa McIntyre (Independent Director, HCF & icare).
- Plenary 3 was presented by Peter Bradd (CEO, Beanstalk Factory) who shared his views on innovation.

During the forum the Chatham House Rule was in effect. So, whilst we can't disclose who said what, here are some of the highlights from the forum discussions:

- Increasingly, the risk of doing something is much lower than the risk of doing nothing. In this day and age, standing still is unacceptable. We all need to embrace change and continuous improvement.
- Innovating how risk management is done enables more successful business innovation:
  - Optimise your portfolio of innovation projects, don't try and optimise each individual project or idea.
  - Use stage gate processes to weed out the innovations most likely to succeed and to confine risks whilst experimenting.
  - Ensure good governance processes are in place, including adherence to the Board's Risk Appetite Statement.

- There is a critical role for Risk Functions to play in enabling their organisations to successfully innovate:
  - Inform: conduct external analysis, provide thought leadership, etc.
  - Participate: get involved in steering committees, innovation labs, etc.
  - Enable: risk management should be the accelerator of innovation, not the hand brake!
- A risk function does not have to be reactive to a strategy.
- Risk/Strategy/Performance – organisations need all three connected and working well together.
- Strong companies have:
  - Clear vision and aspiration
  - Strong culture
  - Trust (between management and board)

- Some great quotes during the sessions:
  - "It takes courage to innovate and transform"
  - "The future is already here, it's just not evenly distributed"
  - "We don't need out of the box thinking, we need a bigger box"
- There are numerous ways of innovating:
  - Corporate accelerators
  - Corporate ventures
  - Open innovation (e.g. Kaggle)
  - Open innovation contests (e.g. hack-a-thons)
  - Skunk works (i.e. a SWAT Team injected into the business)
  - Labs
  - Platforms
  - Internal contests
  - Internal ideas platforms

The forum concluded at 1:00pm with a light lunch for those who didn't have to rush back to their offices immediately.

Many thanks to the Organising Committee - Gavin Pearce, Catherine Dube and Liz Gemmell - for a very successful Forum.

New FSF format includes international guest speakers

By Actuaries Institute *(Actuariesmag@actuaries.asn.au)*

The 2018 Financial Services Forum's innovative format includes a focus on 'big-picture' plenary and keynote speakers.

A new 'agile' organising approach to the program for FSF2018 features international speakers on health and ageing and specially 'curated' plenaries .

Convenor of FSF2018's Organising Committee, Melinda Howes, said she was excited to reveal the program, which has a strong insurance and super focus across both days, and a 'broader fields' focus on day two including wealth, banking, data analytics and investment.

"We've got some of our thought leaders curating each of the content areas and a fantastic committee under each of those [curators] that's been heavily involved through a really agile process and fortnightly meetings to get this fantastic agenda together," said Melinda, General Manager, Superannuation at BT Financial Group.

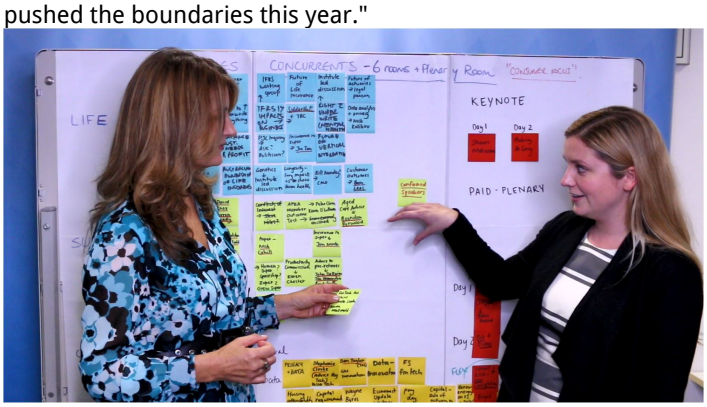



The Curators:

- Nicolette Rubinsztein (Superannuation)
- Jennifer Lang (Life Insurance)
- Jas Singh (Broader Fields)

"It is a great pleasure working with industry leaders to put together something that showcases the best of the industry and brings together the different areas of financial services," said Events Manager Sarah Gibson (below right with Senior Vice President Nicolette Rubinsztein).

"I look forward to the reaction from attendees when they experience all of the new components of FSF2018 that the Organising Committee have put together. They have really pushed the boundaries this year."



A pivotal time in Financial Services

With high levels of government and regulatory scrutiny, and changing customer expectations, it's a challenging time for the industry. "Banks are changing their business models, we've got new entrants into the market both FinTech's' and new life companies and we've got mooted changes to the default superannuation system. Financial Advisors are moving out of large institutions into smaller organisations right across the board in financial services and we've got massive cost and competitive pressures," said Melinda.

View the video here:
https://youtu.be/XI-3x1XwU_g?rel=0

That's why at FSF2018 you will hear from thought leaders, find out what the regulators are thinking and discuss innovative and best practice ideas.

"We're going to hear from the chair of FinTech Australia. We're going to hear from EY about their study into FinTech and from Professor Rod Maddock [in the] session on Fin Tech," said Senior Vice President Nicolette Rubinsztein. "[For] the other technology session we've got Trevor Gruzin, who is the Global Head of Growth and Strategy for Accenture, and he's going to talk to us around trends in technology, so we've got some great plenary sessions."

The Keynotes

The Forum's two Keynote Speakers are Shaun Matisonn from Discovery Health and English author and biomedical gerontologist Aubrey De Grey.

Shaun Matisonn

Aubrey De Grey

Bill Evans

"[They] promise to be phenomenal," said Nicolette. "Discovery is now being named one of the top most innovative companies in the world, and Aubrey De Grey [is] a very controversial scientist, who's going to talk to us around longevity, so I'm very excited for both of those."

Aubrey De Grey, CSO of SENS Research Foundation and VP of New Technology Discovery at AgeX Therapeutics, Inc), is known for his view that medical technology may enable human beings alive today to live indefinitely.

Shaun Matisonn is an actuary and Head of International Markets for Vitality Group, a division of Discovery Limited. Founded on the principles of consumer engagement and wellness, Discovery is a leading international financial services institution.

Shaun has published papers on health care reform and the use of medical savings account in various healthcare systems. He has also participated in consumer driven healthcare projects for the Harvard Business School.

The Plenaries

Plenary 1 will see Bill Evans Chief Economist Managing Director & Global Head of Economics & Research at Westpac discuss Australia and the Global Economy.

Fin Tech and Technology will be the focus for Plenaries 2 and 3 with Erik Heller, Stuart Stoyan, Professor Rod Maddock and Trevor Gruzin.

Later, Plenary 4 will highlight social risk and capital with Ian Laughlin (Advisory Board Chairman, Blackhall and Pearl, and former Deputy Chairman, APRA) and Hadyn Bernau (Causeway) and Plenary 5 will see Helen Rowell (Deputy Chairman, APRA) and Katrina Ellis (senior financial regulator, APRA) update delegates on what is happening at APRA in the data analytics space.

The final plenary Paul Howes (Partner, KPMG), Michael Vrisakis (Partner, Herbert Smith Freehills) and Anthony Asher (Associate Professor, UNSW) will discuss the highly anticipated Royal Commission.

This year the Program also features new Practice Area Plenaries which will run concurrently across:

Broader Fields

- Risk Culture and Maturity in Australian Superannuation Funds (Elizabeth Sheedy)

Life Insurance

- Update on the Profitability of Disability Insurance (Briallen Cummings, Greg Martin, Andrew Linfoot, Adrian Rees)
- Life Licence to Operate (Emma Curtis)
- Life on Mars – Some next Steps for Life Insurance (Ilan Leas)
- Future of Life Insurance (Damien Mu, Brett Clark)

Superannuation

- The Age Pension in the 21st Century (Michael Rice)
- Leveraging Digital Capability to Personalise MyRetirement (Deborah Ralston, Jeremy Duffield)
- Retirement Incomes: Australia vs the rest of the world (David Knox)

This is not to mention all the concurrent sessions!

The Organising Committee:

- Eric Ranson (Banking)
- Angat Sandhu (Data Analytics)
- Diane Somerville (Superannuation)
- Nathan Bonarius (Superannuation)
- Andrew Fisher (Investment and Wealth Management)
- Daniel Longden (Life Insurance)
- Colin Yellowlees (Life Insurance)
- Ray Bennett (Life Insurance)
- Ilan Leas (Life Insurance)

Build something that matters - Join the Social Networking Actuaries Group!

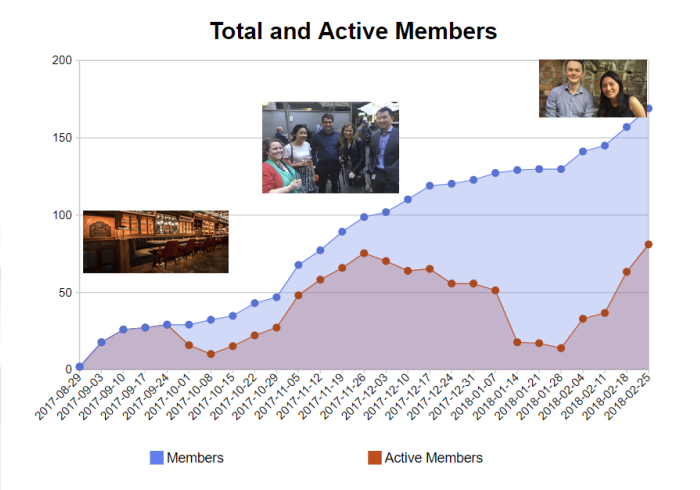
By John Low

The Social Networking Actuaries Group (SNAG) Committee helps the Institute's 4,000 members expand their social and professional networks. Here's a taste of what the group's been up to, plus its 2018 Calendar of Events!

The SNAG Committee was formed after a small group of individuals, passionate about networking, responded to a rallying cry to help the Institute's 4,000+ members expand their social and professional networks. Here's some background to the group and its 2018 Calendar of Events!

Since its' formation in September 2017, with the support of Lily Meszaros (Committee and Volunteer Engagement Manager) and leadership from Bill Konstantinidis (Council Member), SNAG is gaining traction quickly with its objective to connect Institute members.

Early on, the SNAG Committee chose to leverage Meetup, a digital platform for organising events. The chart below shows the significant growth in membership of the SNAG, to around 170 members currently.



SNAG has held five events (three coffee meetups and two drinks events) in the last six months with over 100 actuaries in total getting involved in the events.

As the SNAG committee developed and learned from members attending events, we realised that sometimes it wasn't clear what we are about. Early in 2018, the SNAG Committee held a planning session and brainstormed events we want to hold in the coming year and started building a more well-defined strategy for the group.

It's going to be an exciting year ahead. We plan to give Institute members more opportunities to network with coffee and after work drink events. We also plan to organise a greater variety of events with a plan to hold events that are more active (lunch time sports, runs etc), educational, and featuring high profile actuaries and networking experts.

The SNAG committee is looking for members!

As we progress on this unique journey, we understand that we can't do this without the generosity of Institute volunteer members. As the chart above shows, we could do better with engaging SNAG members and we will need a lot of help with organising the events we have in mind.

We are calling for Institute members who are passionate about helping others, to become part of the SNAG Committee.

We are team of networkers that are striving to build a platform that enable actuaries to expand their social and professional network. Be part of something meaningful, help shape the strategy of the group, meet new people and develop some unique skills outside of your technical repertoire. As part of the SNAG Committee, you will build valuable experience in:

- Networking for growth
- Leadership
- Event organisation and hosting
- Leveraging latest social media platforms and productivity tools (Meetup, LinkedIn, Trello, Slack etc)
- Content marketing and Writing – with opportunities to get published in Actuaries.Digital

- Marketing to membership bases

The SNAG is a fun and easy-going bunch who are passionate about helping members connect. The group runs in a relaxed environment with the full backing of the Institute and its leadership so we can make decisions and act quickly.

If you are interested in joining the SNAG Committee, please contact Lily Meszaros who will direct you to someone on the committee for a chat or to attend one of our committee gatherings as a guest to learn about what we do before you decide to join us.

SNAG Calendar of Events 2018

Mark your calendars for these exciting events for the year ahead. Please join the SNAG Meetup group to stay up to date.

May	**May Dinner** Date TBA Casual dinner and trivia possibly buffet dinner. More details coming soon
June	**June Coffee** Date TBA **June Drinks – Post Part III exam results drinks** Thursday, 21st June 5:30pm till late Customs House
July	**July Drinks – Post ST9 and ST1 exam results drinks** Friday, 13th July 5:30pm till late Customs House **Annual Event - Amazing Race/Treasure Hunt** Amazing Race/Treasure Hunt – half day on a weekend, small fee to join with prizes for winning teams.
August	**August Coffee** Date TBA
September	**September Drinks – Post Cap course results drinks** Friday, 28th September 5:30pm till late Customs House
October	**October Coffee** Date TBA
November	TBA
December	**December Coffee** Date TBA **Drinks – Post Part III exam results drinks** Thursday, 6th December 5:30pm till late Customs House **Drinks – Post ST9 and ST1 exam results drinks** Friday, 14th December 5:30pm till late Customs House

Biases and Heuristics: Beyond the Numbers

By Joshua Levy

In this student column, Joshua Levy (UNSW) explains the benefit of incorporating the studies of behavioural sciences to actuarial problem solving.

Actuaries deal with a conflation of academic fields including mathematics, statistics, and finance. However, we tend to ignore the more human, behavioural insights that psychology offers. This article will examine a variety of systematic errors that we are all susceptible to and explore how our field can benefit from a study of behavioural sciences.

When it comes to solving a problem, some actuaries are traditionally intrigued by the beauty of a singular, concrete, 'right' answer. However, the reality of problem-solving is that it is far from black and white. To navigate the irrational opacity that presents itself before us, we have various tools at our disposal. Statistical logic is certainly one way to brush aside our biases and partialities. Amos Tversky and Daniel Kahneman's famous 'Linda problem' evinces the way in which statistical insight negates what they called 'heuristics', shortcuts that the human mind takes when faced with uncertainty.

The problem describes Linda - "31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations". They proceed to ask "which is more probable:

1. Linda is a bank teller, or
2. Linda is a bank teller and is active in the feminist movement?"

85% of those surveyed answered '2' due to what the eminent psychologists later coined as 'representativeness'; a heuristic that leads people to overestimate their confidence when faced with vivid descriptions, leading to a neglection of Bayes' Theorem.

However, the two psychologists found that even those statistically inclined are subject to the ineluctability of behavioural biases. Kahneman and Tversky devised a series of complex statistical questions that they posed to mathematical psychologists in an attempt to extend their previous findings. One such problem asked the respondent to imagine a situation in which "a certain town is served by two hospitals. In the larger hospital about 45 babies are born each day, and in the smaller hospital about 15 babies are born each day. For a period of 1 year, each hospital recorded the days on which more than 60% of the babies born were boys. Which hospital do you think recorded more such days?

1. The larger hospital
2. the smaller hospital, or
3. about the same (that is, within 5% of each other)"

As we know, a smaller sample will have a higher variance, and thus we would expect the smaller hospital to record more of these days. However, 56% of subjects actually chose option 3. Whilst statisticians clearly possess a multitude of rigorous tests that make the correct solution evident, when they were surveyed away from their work, many were susceptible to the same biases that undergrads displayed.

How is this applicable to being an actuary? The following experiment illustrates the importance of behavioural science to fully understanding an actuarial problem. Insurance professionals were asked "What causes the most deaths in the UK amongst women aged 20 to 29?

1. Accidents
2. Cancer
3. Self-inflicted injuries"

Responses suggested that accidents accounted for around 50% of deaths in that age bracket, however, the actual percentage was closer to 30%. This disparity is perhaps quite hard to believe, how could those whose job deals with accidents provide such a large margin of error? Psychologists explain this systematic error as 'availability'. Ironically, the fact that these insurers dealt with accidents so frequently was the reason why they tended to overestimate their significance, they could easily recall situations in which similar accidents resulted in death.

Biases and heuristics are ubiquitous across all professions and experience levels. It is by educating ourselves about these biases, that we can truly refine and improve our actuarial problem solving techniques. Whilst statistical methods may be seen as the most important tools for an actuary, it is critical for us to consider empirical studies from other fields and recognise the fallibility that comes with being human.

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