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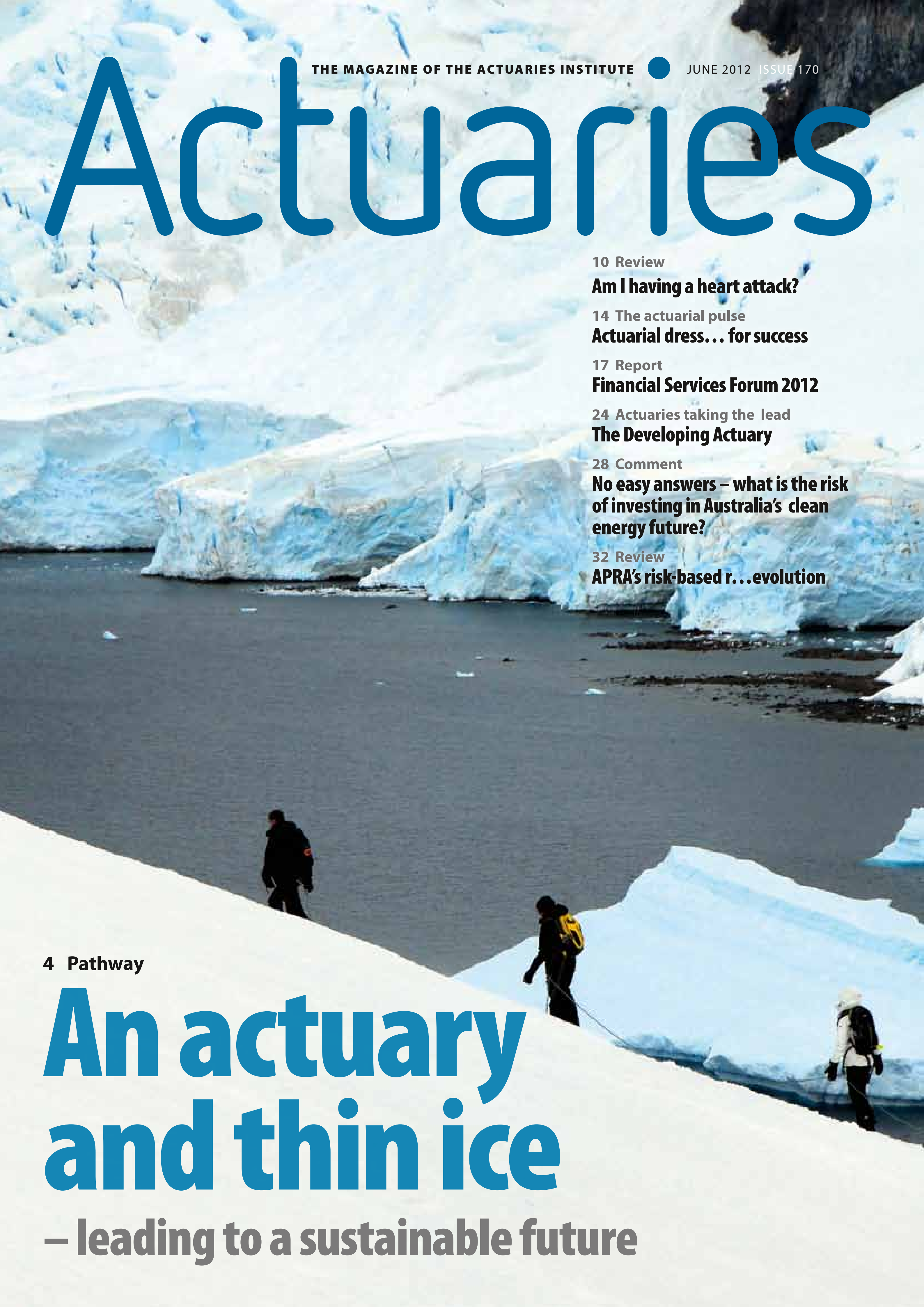
Actuaries



An actuary and thin ice

– leading to a sustainable future

Contents

JUNE 2012 ISSUE 170

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Actuaries

CONTRIBUTIONS
Contributions should be sent to the Actuaries Institute, marked to the attention of Katrina McFadyen (Communications and Marketing Manager) at:
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All contributions must conform to our submission guidelines which are available from the Communications and Marketing Manager.

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Coming up

June/July

Members only Evening of Networking and Art: Fred Williams Exhibition – Infinite Horizons
Wednesday 27 June, Melbourne

Insights
Information Note on Appointed Actuary Risk Management Advice
Thursday 28 June, Sydney

Actuaries in Leadership Speaker Series
Thursday 28 June, Melbourne

Young Actuaries Program – Effective Leadership
Monday 9 July, Sydney

Insights
Microfinance Masterclass
Tuesday 10 July, Sydney

Professionalism Course
Monday 16 – Tuesday 17 July, Melbourne

Fellowship and Presidential Dinner
Tuesday 17 July, Melbourne

Joint Regional Seminars Asia
19-20 July, Kuala Lumpur; 21-22 July, Bangkok; 25-26 July, Taipei; 27 July, Hong Kong

Volunteers Cocktail Party
Wednesday 25 July, Melbourne

Aug/Sept

Insights
Risk of Obsession with Peer Risk
Monday 6 August, Melbourne

Insights
Profit Margins in Regulated Insurance Schemes
Tuesday 7 August, Sydney

Young Actuaries Program
Wednesday 8 August, Melbourne

Professionalism Course
Monday 13 – Tuesday 14 August, Sydney

Fellowship and Presidential Dinner
Tuesday 14 August, Sydney

Volunteers Cocktail Party
Wednesday 22 August, Sydney

Interactive CPD Session with David C Miller – National Tour
Monday 10 – Friday 21 September: Perth, Adelaide, Melbourne, Brisbane, Sydney, and Canberra

Oct/Nov

General Insurance Seminar 2012
Monday 12 – Tuesday 13 November, Sydney

ERM Seminar 2012
Wednesday 14 November, Sydney

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To boldly go… into the health space!

Space is vast, and so is the 'Health' space. It comprises of many sub-groups including health financing. According to AIHW, Australia increased its expenditure on health from 7.9% of GDP ($72.2b) in 1999-2000 to 9.4% of GDP ($121.4b) in 2009-10, driven by increases in many areas such as public hospital services, medications and health research. The overall health system has many issues and challenges: ageing population, obesity, intergenerational issues, cost pressures, waiting lists, labour shortages, politics, etc.

Zooming in, private health insurance, while a smaller subset of the overall health industry, is not a small industry. PHIAC reported that over 50% of the Australian population have some form of cover and FY11 annual premium income is sizeable at over $16b. Private health insurance in Australia is also regularly featured in the media, particular in respect to premium increases and the recent policy changes for the Medicare Levy Surcharge threshold as well as income testing of the rebate.

Despite all of this, there are relatively few actuaries in the health or health insurance practice area. Why is this? After all, it is not a new industry. Here are some 'reasons' I often hear, and my responses:

'Reason'	My response
Actuaries are more respected in a traditional practice area.	Really? It's what you make of it.
There is no 'real' Part III subject.	There is the online PHI course, and you can now enrol in the UK subjects.
The money is better in financial services or insurance.	This is potentially a chicken and egg problem. Actuaries will need to 'prove' their value in order to gain the trust and recognition.
Other professionals such as health economists are less expensive.	

So, should individuals as well as the Actuaries Institute be more actively promoted in this space? How can the profession increase its profile and presence?

Australia's health system is an exciting and challenging space. A healthy health system is vital to a nation, its identity, its culture, its people and economy. Gandhi once said "It is health that is real wealth and not pieces of gold and silver."

I think that actuaries have a unique combination of skills of looking at the big picture as well as technical skills such as statistical analysis, financial projections, modelling, risk adjustments and financing. Actuaries can play a valuable role in shaping the Australian health system. I look forward to the day where health practitioners have their own forum/seminar/convention!

Please write in or tweet me @benooi, to let me know what you think! A

Editor

An Actuary and thin ice

– leading to a sustainable future

"The greatest threat to our planet is the belief that someone else will save it"
– Robert Swan

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Antarctica photos: ©John Luck
www.thkphoto.com/gallery/john-luck-antarctic

The rallying call! "Team Inspire, Team Inspire, Team Inspire…" From 6.00am until 10.00pm, every day for two weeks, this was my call to action. Whether it was to attend a lecture on leadership or the environment, do a team project, go on a hike or get ready to eat, these were the words blaring out of a loud speaker at the beginning of each announcement. Incidentally, all these activities took place on a ship just off the shores of the Antarctic Peninsula in March 2012.

After spending 16 days on the 'Sea Spirit' exploring and experiencing Antarctica and learning about the environment, sustainability and leadership, I was compelled to tell the story of my adventure.

THE EXPEDITION

'Team Inspire' was the name given to 72 representatives from 22 countries who gathered in late February to join Robert Swan for the 2012 International Antarctic Expedition (IAE). Robert Swan, OBE, is one of the world's most renowned polar explorers and environmental leaders. At age 33, he became the first person to walk to both the North and South Poles. His 900 mile journey to the South Pole, 'In the Footsteps of Scott', still stands as the longest unassisted walk ever made on earth.

Since 2003, Swan has been leading annual expeditions to Antarctica that focus on leadership training, environmental clean-up and education initiatives. The IAE is designed to give people the information and hands-on experience to educate, engage and inspire others to make a difference. IAE teams also helped design and build the world's first renewable energy education station in Antarctica, called the *E-Base*.

I was privileged to represent my company, The Calliden Group, and to become the first actuary to join this expedition, which included a 'Leadership on the Edge' program designed by Robert Swan to promote teamwork in harsh conditions and to create environmental educators. Team projects involved spending a night on the ice without any cover; hikes across the snow; and climbing glaciers attached by a rope to my new friends, who only a few short days ago were perfect strangers to me.

SO HOW DID I GET THERE…?

In 2011, Calliden Group employees were fortunate to hear Robert Swan's inspirational talk when he visited our Melbourne and Sydney offices. Earlier that year, Robert had been the keynote speaker

Robert Swan

at both the Steadfast and Austbroker/IBNA annual conferences. At the conclusion of these talks, our CEO announced that one of Calliden's employees would have an opportunity to accompany Robert Swan on IAE 2012. The first step of the selection process required everyone who was interested to answer six questions addressing a range of criteria and explaining their motivation for wanting to travel to Antarctica. A simple "I want to see lots of penguins" would not do.

There were 15 of us who were selected on the basis of the written applications. The second step in the selection process involved making a personal video about ourselves and why we wanted to go to Antarctica and represent Calliden. A shortlist of three potential ambassadors was then sent to Robert Swan who subsequently made the final decision.

I think what appealed to Robert Swan in my submission was my motivation for learning more about sustainability and environmental responsibility, as well as my commitment to influencing the thinking and behaviour of others. I want to do it for my children and for my children's children. I want to do it to keep the world a better place for future generations and to show my kids, by example, that one person can make a difference and you can achieve anything you put your mind to. My commitment is rooted in something very simple and personal, and that's usually the most effective way to get things done and inspire others to follow. I cannot describe in words my excitement when I heard that I was successful in my application.

For months after hearing Robert Swan speak, all I could think about was going to this wondrous land of ice and penguins to learn from Robert Swan and be able to draw on his amazing leadership skills. When Robert announced his decision, my reaction was a combination of elation and fear. This was not a pleasure cruise to snap a few photos of penguins and whales for the family photo album. This was an opportunity of a lifetime to experience leadership on the edge and test my physical and mental limits. The start of a personal commitment to take everything I would learn on this journey and use it to influence and engage others on my return.

One of the questions I was asked by my colleagues after I accepted the offer was: "are you sure you want to do this – there will be a lot of pressure on you to show what you can do after your trip?" There was no doubt in my mind that I was up to the challenge that lay ahead.

MY ANTARCTIC EXPERIENCE

The trip started in Ushuaia, the southernmost city in the world. I found the experience overwhelming. In the space of a day, I met almost 100 new people, made a temporary home in my ship's cabin with my Texan roommate and was assigned to my team of seven strangers from around the globe.

Crossing the Drake Passage, which is meant to be the roughest, meanest sea passage in the world was, luckily, quite uneventful. We were told this was the calmest crossing the crew had experienced in a while. Over the two days of the crossing we had a busy program of lectures on the Antarctic environment, its wildlife and the impact that human activity around the world is having on Antarctica. We got to know each other and got used to our ship and the routine. Then we saw land and the game changed once again.

You could feel the buzz of anticipation of seeing Antarctica after two days of sailing across a vast space with no life in sight except a few albatrosses that managed to follow the ship. As soon as we dropped anchor, the crew offered to take us out on Zodiacs – inflatable boats that seat 10 people. Needless to say, no one refused.

This was a fierce and glorious introduction to Antarctica. As the little boats bobbed on the five metre waves around the icebergs, we encountered the first of many residents of the waters around the frozen continent: we saw and followed a pod of humpback whales. I have seen many documentaries about whales and read many accounts of these amazing animals, but nothing prepared me for this first face to face meeting. I was in awe, and many weeks later, I still am.

This meeting was followed by many others. We saw leopard seals, fur seals, elephant seals, albatrosses, skua, orcas and many varieties of penguins, including Gentoo, Adelie and Chinstrap.

THE ANTARCTIC ENVIRONMENT

Antarctica is one of the most fragile ecosystems in the world, the last true "great wilderness" left on Earth. It is home and breeding ground to a number of principle species that support the biodiversity of the Southern Ocean and beyond. Antarctica contains 70% of the world's fresh water, and 90% of it is ice, from which ice cores are extracted. These cores provide us with crucial information on the history of the world's climate, dating back hundreds of thousands of years.

We heard a number of presentations from both climate change and Antarctica experts. We learned that over the last 50 years, the Antarctic Peninsula's average temperature has increased by 2.8 degrees. As a result, the ocean temperature and acidity have also increased, causing a reduction in population of krill – essential food for whales. This is a very real example of a knock-on effect that often occurs in ecosystems.

One of our stops was on King George's Island, where Robert Swan's *E-Base* is located on the grounds of the Bellingshausen Russian scientific research station. Looking over the pristine beaches on our approach to the station, I struggled to imagine what it was like 20 years earlier, before Robert Swan discovered the big dirty secret of the Bellingshausen station.

Bellingshausen was built in 1968, and for many years after the former USSR failed to manage and remove waste, resulting in thousands of tons of rubbish built up around the station. It wasn't until 1996 that Swan discovered the problem and succeeded in his request to the Russian and international authorities to clean up the beaches around the station. He took 35 volunteers from 25 nations to Antarctica and with the cooperation of the Russian government, Swan and his team set out to remove and recycle over 1,500 tons of waste. Five years later, through the team's enormous fundraising effort, planning and project execution, the waste and debris were finally consolidated and removed from the continent for recycling and proper disposal.

As he looked down on the beach that had been cleaned, Swan realised that by showing people the beauty of this incredible continent, he could inspire and educate people around the world to play a role in promoting preservation and conservation for future generations and the importance of renewable energy sources.

Robert Swan's *2041 Foundation* is committed to preserving Antarctica to ensure that the Protocol on Environmental Protection to the Antarctic Treaty (The Madrid Protocol) is extended forever. After seeing the pristine beauty of Neko Harbour and Lemaire Channel, it is hard to imagine that there is a chance that one day this landscape will be littered by oil and gas rigs or giant mineral mines.

MY LEADERSHIP EXPERIENCE

The lectures on leadership were often accompanied by practical experience – and what experience! On one of the days, we were told that we would be camping overnight on shore, with no tents. All we were given were sleeping bags and bivvy bags (aka bivouac sacks). After some instructions on how to protect yourself from the howling Antarctic winds, we were left to work in teams to build a protective wall of ice, dig ourselves in and make sure everyone stayed warm during the night. Robert Swan was there, observing how we worked together and reminding us of an important lesson he learned on his walk to the South Pole – "think carefully first, and then do it".

The leadership theme continued on numerous glacier climbs that we had to do in rope teams. This was something few of us had done before. The task required teamwork, communication, and most importantly, trust. One of the main lessons highlighted in these walks was that we can

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Dmitry Gorelik

Team Inspire

work together, no matter what language we speak, what background we come from and what physical abilities we have. Swan and his team used this example of teamwork and leadership to emphasise the fact that in most circumstances the barriers to cohesive and effective teamwork are superficial and by focusing on common goals and staying positive, we can achieve anything.

One of the objectives of the 'Leadership on the Edge' program is to teach leaders to perform outside of their comfort zones. I joined other participants in the ritual of a polar plunge – a quick 'swim' in zero degrees Celsius water. Taking a plunge into icy water was the ultimate stepping out of comfort zone experience for me. I now reflect on this when I need to take a metaphorical plunge in my professional life.

Everyone on the expedition had a different and often very personal story to tell, but we all had one thing in common – the desire to utilise our leadership skills and wield our influence to change behaviour and attitudes of people around us. The common goal was increasing awareness of the need for sustainability and social consciousness. The participants that inspired me the most were the *Cycle for Water* guys from Holland and a young man from The Maldives fighting for the survival of his country from inundation by the sea.

The two Dutch cyclists rode for 30,000 km over 20 months from Alaska to Ushuaia on bamboo bicycles to raise awareness for the global water crisis that now affects over a billion people. I learned a lot from them – about sustainable water projects, geopolitics of water consumption and their amazing journey through North and South America.

A young man from The Maldives, a co-founder of the Maldivian Youth Climate Network, had to find over a dozen sponsors to fund his journey to Antarctica. His story highlighted a very practical side of the sometimes abstract debate about the environment. The Maldives is one of the countries that will be severely impacted by rising ocean levels. The environmental impact of climate change will be catastrophic and will put the lives of over 300,000 people in The Maldives under threat if we do not do something to mitigate the human influence on the rate of climate change.

What set these two stories apart from others was the fact that both cases have illustrated a key leadership lesson from Robert Swan – you won't inspire anyone by sending them an email, you have to do something! In both cases, they not only did something but inspired many others to spring into action.

I feel that by having been part of the program, I am able to send a message to my family, colleagues, business associates and community that anything is possible if you set your mind to it; that human beings are capable of doing great good in the world, and that anyone can make a difference. Each of us has the capacity for physical and mental endurance and the opportunity to stand up and be counted.

WHERE TO FROM HERE?

Before participating in the 'Leadership on the Edge' program, I thought that my contribution to the protection of the environment would be limited to reducing my own carbon footprint and improving my recycling practices. However, I now realise that a much greater impact can be made by inspiring the wider community to make a change for a cleaner future. I have heard a number of presentations on this trip from corporate social responsibility (CSR) and sustainability leaders and experts who were able to achieve astounding results for their companies and their clients.

Upon my return from the expedition, I have taken leadership of the CSR working group at Calliden, which consists of representatives from various parts of the business. Our role is to identify and implement CSR initiatives across Calliden. This is a first step in Calliden's commitment to becoming an industry leader in social responsibility.

Organisations around the world have successfully integrated sustainability and CSR frameworks in their business strategy. There is now an increasing number of executives who believe that the benefits of developing sustainable products and processes outweigh the costs of doing so.

For two weeks, I lived remotely from work, friends and family and had a unique opportunity to dedicate all my waking hours to the issue of environmental sustainability. What I have witnessed, learned and experienced has convinced me that, not only is there a problem, but also that there is a very good chance that by taking positive action as individuals and professionals we can actually make a difference.

There is absolutely no reason why actuaries cannot become sustainability champions. Actuaries are in a unique position to influence key decision-makers to promote sustainable development. We have the right skills: financial modelling, data analysis, and most importantly, communications skills. We are seen to be professionals with integrity and others trust our judgement. We are able to persuade those around us with hard facts and by presenting the 'big picture' arguments. We can show that companies that integrate sustainability into business strategy and operations can generate a sound and measurable improvement to their bottom line.

As I was writing this article, I thought: what will my call to action be? And what I would like to leave you with is this – **do the research; find out for yourself.** I truly believe that you will reach the same conclusions I did.

I have become convinced that my actions matter and are necessary. I have now made a commitment to convince others around me. This is the beginning of a conversation I will be having with my colleagues and professional peers in the upcoming months and years, and I will not give up. One of the greatest pieces of advice from Robert Swan was: **"Do not give up with people who won't listen, just get better."** That is my plan. **A**


Andrew Gower
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Andrew Gower

Title… Ancillary Strategy and Planning Manager

Organisation… Medibank Private

Summarise yourself in one sentence… Someone who enjoys pushing the boundaries in work and life

My interesting/quirky hobbies… Photography and playing the trumpet

My favourite energetic pursuit… Cycling

The sport I most like to watch… Cycling and football

The last book I read (and when)… *The Upside of Irrationality – The Unexpected Benefits of Defying Logic at Work and at Home* by Dan Ariely

My favourite artist/album/film… Album: *Kind of Blue* by Miles Davis (I have purchased it at least 3 times (CD, SACD and 50th Anniversary Edition). Film: *Star Wars* (I have 3 copies of this as well, VHS, DVD and Blu Ray)

The person I'd most like to cook for… Sir Richard Branson

I'm most passionate about… Tigers

What gets my goat… Road users (including cyclists) who don't think of others – they are in control of a weapon

I'd like to be brave enough to… Quit my job and experience the world for a few years

In my life I'm planning to change… My fitness and weight

Not many people know this but I… Once drove a company car through a wire fence (and was 15 at the time)

Four words that sum me up… Larrikin, introverted, traditional, disorganised

What I wanted to be when I grew up… An actuary, an accountant and an engineer. Maybe I should really say 'professional student' since doing all of that would have taken 10+ years at uni

Why and how I became an actuary… Dad was an actuary and although he wanted me to do whatever I wished, I wanted to prove myself to him and saw becoming an actuary a way of doing that. Also the journal/magazine articles that I read throughout school sounded interesting. I'm lucky to look back and say it was the wrong reason, but I ended up doing something I enjoy

Where I studied to become an actuary and qualifications obtained… I studied the Part 1 exams through London, the control cycle through Melbourne Uni before finalising the Part III exams through the Institute and gaining my FIAA in Feb 2009. All up, eight years of study on top of University (where I did an Engineering degree)

My work history… Started working at Trowbridge then moved to AXA for seven years before moving to Medibank in October 2011

What I find most interesting about my current role… Trying to understand the allied health sector

My role's greatest challenges… Weighing up impacts on member against risk and profitability

Who has been the biggest influence on my career (and why)… Caroline Bennet for giving me my start; Andrew Brown for showing me the importance of leadership and communications skills; Steve Varney for assisting in my development of commercial acumen

My proudest career achievement to date is… Qualifying

10 years from now… Hopefully having a year off, but more likely paying down a mortgage

When I retire, my legacy will be… A stronger actuarial profession in Australia

The most valuable skill an actuary can possess is… Communication – your work can be great analysis but if you can't communicate the results no one will know it

If I was President of the Institute, one thing I would improve is… Interaction between retired members and young actuaries. Retired members have so much experience to share and many would be happy to share it

At least once in their life, every actuary should… Work in a non-traditional role

My best advice for younger actuaries… Read broadly about leadership, communications, psychology etc and speak up in work and life

If I could travel back in time I would… Go back to being in year 12 and change my university course

If I win the lottery, I would… Spend a bit, give away a bit, and invest the rest (both in myself and financial markets)

Am I having a heart attack?

Lately there has been a move towards making the Heart Attack definitions covered by trauma insurance much more generous, and it is expected that the claims costs will rise as a result – raising questions about the sustainability of trauma insurance in its current form.

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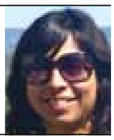
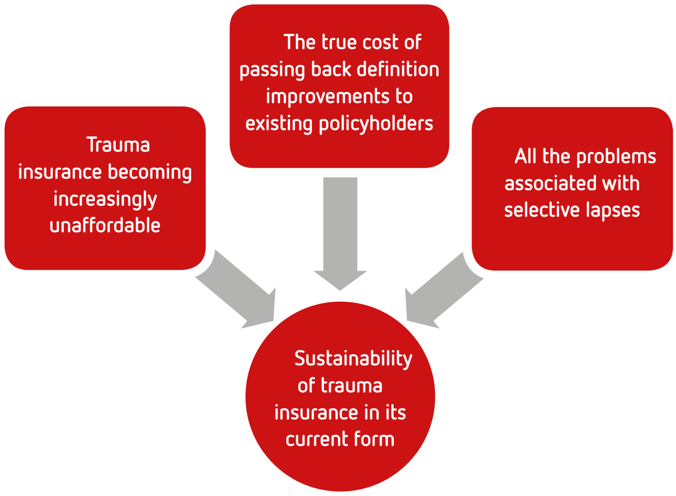


Trauma insurance in Australia is an expensive product and the cost is increasing. One reason is that incidence rates for conditions such as prostate cancer are generally on the rise. Another is that trauma definitions have become much more generous for lives insured over the last few years. A life Insurer might express this more emotionally and say that trauma definitions have been 'weakened'.

Over the last few years there has been a move towards making the Heart Attack definitions covered by trauma insurance much more generous. In moving to the most generous of these Heart Attack definitions, it is expected that the claims cost for a comprehensive trauma product will rise by up to 15% for males and up to 1% for females. In addition, some angioplasty procedures, which at present create an entitlement to a partial trauma claim, would now create eligibility for a full payment heart attack claim under these more generous definitions. This raises a few questions about the sustainability of trauma insurance in its current form.



THE MOST GENEROUS HEART ATTACK DEFINITION

Getting back to heart attacks, the most generous of the Heart Attack definitions are along the lines of the following:

> **Myocardial infarction evidenced by the detection of the rise and/or fall of cardiac biomarkers with at least one value above the 99th percentile of the upper reference range together with one of the following:**
>
> - **signs and symptoms of ischaemia consistent with myocardial infarction; or**
> - **ECG changes indicative of new ischaemia; or**
> - **development of pathological Q waves; or**
> - **imaging evidence of new loss of viable myocardium or new regional wall motion abnormality**
>
> **If the above tests are inconclusive, other appropriate and medically recognised tests will be considered**

WHAT DOES THIS DEFINITION ACTUALLY MEAN?

This definition is loosely based on the Universal Definition of Myocardial Infarction[1] that has been adopted by Australian doctors since 2007. The aim of the Universal definition was to aid doctors in the diagnosis and treatment of heart attacks. The first section of the 'most generous' definition considers the biomarkers that are released when a person suffers a heart attack. Typically during a heart attack there is a rise and then a fall in cardiac biomarkers. The most commonly measured cardiac biomarker in Australia is Troponin T.

Troponins are proteins released when there is muscle damage. They have the potential to be unique for the heart. Assays[2] are used to measure concentrations of troponin in the blood in order to detect heart damage such as that caused by an acute myocardial infarction.

The first section of the 'most generous' definition is based on the '99th percentile' observed from the range of a biomarker measured in a reference population. It means that 99% of the Australian population are assumed to have normal cardiac health, so the 1 % outside of this range is considered to be abnormal. This does mean there will be some people classified as 'abnormal' even though they are actually healthy, living asymptomatically in the population and are of no concern to cardiologists. A reference population was used to determine the 99th percentile. As each assay that measures Troponin T is unique, each assay has its own 99th percentile.

The second section of the 'most generous' definition gives a choice of four test criteria of which any 1 of these has to be met. When combined with section 1 of the definition, this is used to establish whether a heart attack has occurred or not. Of the four options given, the first – signs and symptoms of ischaemia… is the easiest to meet. This is medical terminology for pain characteristic of a heart attack.

HOW DOES THIS COMPARE AGAINST THE CURRENT MARKET STANDARD HEART ATTACK DEFINITION?

By defining 'current market standard' as the definition used by the majority of insurers[3] in the individual Australian market, the 99th percentile concept referred to previously as the 'most generous' definition is in itself a dramatic move away from the current market standard. Currently, the market standard definition specifies that a Troponin T level of 600ng/L[4] is the minimum to be met for a heart attack to be severe enough to validate the payment of a full heart attack claim. Where the Troponin T level measured rises to or above 600ng/L, cardiologists consider this to be indicative of a serious heart attack.

A new Troponin T assay, known as a high sensitivity assay (hsTnT), has been introduced across all Australian hospitals since the start of 2012. With this new assay, doctors are able to detect much lower levels of Troponin T release than previously. Doctors are now able to diagnose heart attacks that were previously undetectable. The new hsTnT isn't directly comparable to the previous Troponin T assays. Each pharmaceutical manufacturer of assays calibrates their individual assays slightly differently. Expressing the current market standard Troponin T requirement in terms of this new hsTnT, the previously stated required minimum level of 600ng/L level shifts to approximately 800ng/L.

The 'most generous' definition relies on exceeding the 99th percentile level. During 2010 and 2011, prior to the introduction of the new hsTnT, the 99th percentile being used by cardiologists was approximately 50ng/L[5] when expressed in terms of the new hsTnT. Where the Troponin T level measured rises to at least 50ng/L, cardiologists consider this to be indicative of a mild to moderate heart attack.

Current market standard definition	600ng/L ≈ 800ng/L using hsTnT = serious heart attack
2010-11 99th percentile	50ng/L using hsTnT = mild to moderate heart attack
2012 99th percentile	14ng/L using hsTnT = very low severity heart attack

	Heart Attack claims as a % of all heart attacks diagnosed during 2010					
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Current Mkt Std Trop T: 800ng/L	65	65	65	65	52	52
2010-11 Trop T 99th%: 50ng/L	0	0	35	35	35	35
Heart attack claims total	*65*	*65*	*100*	*100*	*87*	*87*
hsTnT 99th%: 14ng/L	0	0	20	20	20	20
New heart attack claims total	*65**	*65*	*120*	*120*	*107*	*107*
New claims/prev claims of 65	**100%**	**100%**	**185%**	**185%**	**165%**	**165%**

*E.g. 65 heart attack claims were paid from 100 heart attacks diagnosed during 2010

With the greater detection power available from the start of 2012 due to the introduction of the new hsTnT, the 99th percentile level has reduced to 14ng/L[6]. This is substantially lower than the 99th percentile concentration of 50ng/L that could be detected and measured during 2010 and 2011. Where the Troponin T level rises to at least 14ng/L, cardiologists consider this to be indicative of a very low severity heart attack – a person may easily return to work within a couple of days. When looking at biomarkers alone, the 'most generous' definition is much easier to satisfy than the current market standard definition.

For the second section of the 'most generous' definition, of the four options available, the first is the easiest to meet. As touched on earlier, this is essentially pain (usually chest pain) indicative of a heart attack. When a person suffers chest pain it is difficult for that person to know what is causing the chest pain. There are many important organs located where chest pain occurs. This creates a problem that chest pain by itself is not proof of heart disease. Chest pain is very non-specific. Most commonly, chest pain arises from musculoskeletal causes, followed by gastrointestinal causes and then cardiac conditions.

Only around 2%[7] of all people presenting with chest pain at hospital go on to be diagnosed with either unstable angina or myocardial infarction. Under the current market standard heart attack definition, chest pain by itself is not regarded as a sufficient indicator of a heart attack. It has been mandatory to prove that ECG changes have occurred. This second section of the 'most generous' definition has made it relatively easy to establish a heart attack claim.

WHAT DOES THIS ALL MEAN FOR HEART ATTACK CLAIM COSTS?

A difficulty with the new hsTnT is that there are many conditions that are not heart attacks that will cause movements in troponin which can now be detected. These conditions will also have associated characteristics that satisfy the 'most generous' Heart Attack definition. Examples of these conditions include extreme exertion, pulmonary embolism and the early stages of renal failure.

With the previous Troponin T assays, the amount of troponin released by these non-heart attack conditions were not detectable. The intention of trauma cover for heart attack is to only pay claims on heart attacks. If an insurer moves to adopt the 'most generous' definition, it becomes important to include appropriate additional wording if the insurer also wishes to maintain the intention to ensure that only genuine heart attacks are paid as full benefit heart attack claims. Without this additional wording, the claims cost from the 'most generous' definition will be significantly higher than what is shown in the table following:

The current markets standard definition applied during 2010, 2011 was intended to pay a full trauma claim for only a severe heart attack. During this period most insurers paid a heart attack claim if the claimant's Troponin T level reached at least 600ng/L under the old assays (approximately equivalent to 800ng/L using the new hsTnT).

From studies[8,9], and discussions with cardiologists, approximately 65% of all heart attacks diagnosed during this period would have met the current market standard definition for payment of a full trauma claim. During this same period cardiologists were using the Universal Definition (using the 99th percentile concept) to diagnose heart attacks, but mild to moderate heart attacks diagnosed at this Troponin T level of 50ng/L wouldn't have been eligible for a full trauma claim payment.

During 2012, if the 'most generous' definition is introduced, all heart attacks that could have been diagnosed during 2010 and 2011 would become valid full trauma heart attack claims under this new definition. In addition, due to the introduction of the new hsTnT in 2012, there will be a 20% increase[10] in the overall number of heart attacks diagnosed. Comparing this to the 2010, 2011 individual claims total of 65, there is a 85% increase in heart attack claim costs.

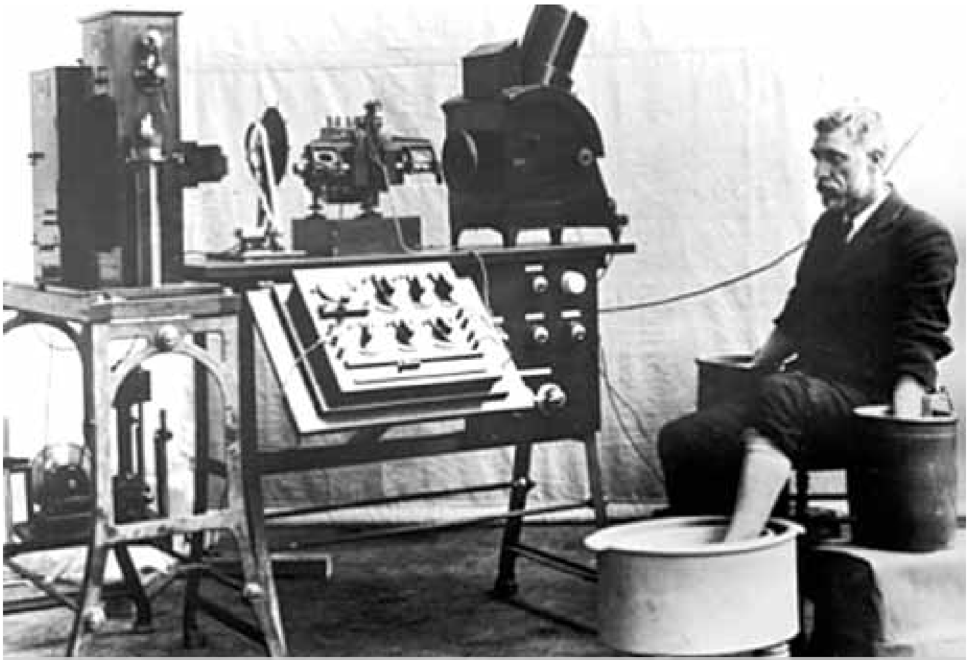
It is expected that by 2014 there will be a 20% reduction in heart attacks diagnosed at the more severe Troponin T level of 800ng/L. These 20% of patients, who would once have suffered a severe heart attack, will have been diagnosed as suffering lower severity heart attacks during 2012 or 2013. As these low severity heart attacks can now be detected, the patients suffering these will be regularly monitored and will commence medical treatment at very early stages of heart disease – previously undetectable.

As a result, it is not expected that these patients will progress in the future to suffer a serious heart attack. This is a further step in improvements in the diagnosis and treatment of cardiac conditions seen over the last 50 years. Heart attack rates, under the previous Troponin assays, have peaked and have been falling due to the increased use of preventative therapy e.g. statins. So the claims total for 2014 becomes 107 which is a 65% increase in heart attack claims cost when compared to each of 2010 and 2011.

WHAT IS THE IMPACT OF PERIPROCEDURAL HEART ATTACKS?

These are heart attacks that occur while undergoing surgery (sometimes caused by the surgery). These aren't covered by the current market standard heart attack definition but these are covered by the 'most generous' definition[11]. During any heart surgery there will be a movement in biomarkers. This has no impact for conditions where a full benefit is already payable e.g. Coronary Artery Bypass Graft. However there will be a large proportion of single and double vessel angioplasties – for which only a partial trauma benefit is currently payable, that will potentially become eligible for a full benefit claim.

During angioplasty surgery, approximately 1% of patients will suffer a heart attack according to the Universal Definition, so the patient will be told by their cardiologist they have had a heart attack during surgery. However, the Universal Definition has stricter requirements than the 'most generous' definition for periprocedural heart attack e.g. during angioplasty surgery, the Troponin T level reached must be greater than three times the 99th percentile to be considered a heart attack by a cardiologist.



The first electrocardiogram

The 'most generous' definition makes no distinction between periprocedural and all other heart attacks. So, without additional wording in place to put some restriction on periprocedural heart attacks, a large proportion of angioplasty patients will become eligible for a full benefit payment instead of a partial payment. Savvy customers and advisors would quickly realise that they may be able to obtain a much larger claim payout than the insurer possibly intended.

This will potentially cause a large cost increase, as angioplasty is a relatively common procedure; it is one of the more frequently claimed partial traumas. What this further additional cost turns out to be depends very much on how the insurer plans to restrict payments for periprocedural heart attacks under the 'most generous' definition.

HOW WILL THIS HEART ATTACK END?

For a comprehensive trauma product, where heart attack forms approximately 20% of the claims experience for male lives, the 65% increase in heart attack claims can translate into as high as a 15% increase in total trauma claim costs for males. For females, heart attack claims form a much smaller proportion of the trauma claims cost so there may be only a 1% increase in trauma claims cost from the increase in heart attack claims.

On top of this, the insurer needs to allow for some proportion of current partial claim payments for angioplasties to become full claims for heart attacks. Overall, insurers who move to the 'most generous' definition can expect to see a substantial increase in trauma claims cost that can't be easily absorbed within current premium margins.

So where does this leave trauma insurance? Will we see the introduction of new more affordable trauma products with tighter trauma definitions than currently available? Perhaps some insurers will introduce further tiering within their trauma products or have trauma products with varying definitions? Or, perhaps there will be a return to trauma cover that more closely matches needs?

Will we be seeing more severity based trauma product offerings? Is it possible for premium sustainability to form part of product ratings in an attempt to reach out to advisors?

Insurers certainly have some difficult tasks ahead in deciding how to deal with this 'most generous' definition. A

[1] Universal Definition of Myocardial Infarction, Circulation 2007, 116:2634-2653

[2] These are manufactured by pharmaceutical companies such as Roche and are of varying quality and specificity. They use antibodies to measure concentrations of troponin in the blood. Each manufactured assay is unique, you can't extrapolate the value of one assay to another. The more refined the assay, the more likely it is able to detect and measure troponin concentrations due to cardiac necrosis with minimal variation in results.

[3] I am generalising here. The Australian Life Insurance market is very competitive. Different insurers have chosen to use different definitions of heart attack in their trauma policies. The most common of the current definitions are those I have described in the text. For those insurers who already include in their definitions wording relating to the 99th percentile measure, the old and new 99th percentiles (described later) are quite different. For these insurers the new assay described in this article will increase their expected claims cost.

[4] The measure of 600ng/L is 600 nanograms per litre. 1000 nanograms equals 1microgram, which readers may be more familiar with. Cardiologists have recently moved to using units of nanograms per litre to measure troponin concentrations in the blood due to the minute levels of troponin now detectable.

[5] There was more than one Troponin T assay being used across Australian hospitals during 2010 and 2011. Each of these was manufactured by a different pharmaceutical company and each had their own unique 99th percentile. The 50ng/L measure I mention in this article is an approximation to cover all of these assay's individual 99th percentiles. Within a Australian hospital just one Troponin T assay would be used but this could be different to the Troponin T assay used by another Australian hospital. There wasn't much difference between the Troponin T assays used during 2010 and 2011 in Australia. It is moving to the new hsTnT that is causing a substantial change in heart attack diagnosis.

[6] Analytical Validation of a High-Sensitivity Cardiac Troponin T Assay, Clinical Chemistry, 56:2, 254-261 (2010)

[7] Diagnostic Approach to Chest Pain in Adults, UpToDate 2012

[8] Short term prognosis of patients with acute coronary syndromes: the level of cardiac troponin T elevation corresponding to the "old" WHO definition of myocardial infarction, Heart 2005;91:373-374

[9] Early Invasive Therapy versus Selectively Invasive Management for Acute Coronary Syndromes, N Engl J Med 2005;353:1095-104

[10] 2011 Addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes (ACS) 2006, Heart, Lung and Circulation 2011;xxx:1-16

[11] Unless the insurer elects to explicitly exclude periprocedural heart attacks

Actuarial dress… for success

NEW SURVEY QUESTIONS WILL BE AVAILABLE IN MAY 2012. 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

RESULTS: REPORT GENERATED ON 17 MAY 2012. 394 RESPONSES..

In the last few months the Australian media has reported that prominent law firms and banks are hiring fashion consultants to give presentations to staff on how to properly dress for particular occasions. There have even been presentations to female staff on how to apply makeup! This has commonly been met with a mixture of amusement, intrigue and offence from staff.

Does attention to detail in your appearance reflect how you carry yourself? Does it also affect the quality of your work? Perception vs. Reality – are these different concepts or are they easily confused as the same?

This month's *Actuarial Pulse* looks at the membership's opinions about Actuarial dress sense through a number of different lenses.

- Company instilled dress codes
- Comparisons to the rest of the corporate world
- Shopping frequency
- Ultimate wardrobe cost
- And of course, fashion catastrophes

QUESTION 1: WHAT AGE GROUP ARE YOU?

Age Group	Count	%
Under 25	27	7%
25 to 34	169	43%
35 to 44	94	24%
45 to 54	64	16%
55 to 64	30	8%
65 or over	10	3%

QUESTION 2: GENDER

Female (31%)	Male (69%)

QUESTION 3: HOW WOULD YOU DESCRIBE YOUR OFFICE DRESS CODE?

Dress Code	Count	%
Formal	88	23%
Smart Business	253	65%
Casual	47	12%
Uniform	1	0%

Many respondents pointed out that the term 'Smart Business' is also described as 'Smart Casual' or 'Business Casual' – a style in between 'Formal and 'Casual'. Whilst the large proportion of respondents described their office dress code as either 'Formal' or 'Smart Business' many commented that they were able to dress more casually on a Friday (fueling some of the answers in Question 11). One lady, who

Solai Valliappan
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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.

mostly works from home, will be the envy of many as she mentioned that she was 'still in PJs' as she was filling out the survey.

QUESTION 4: DO YOU DRESS TO?

Age Group	Blend in	Don't put too much thought into it	For comfort	Match your boss	Stand out
Under 25	37%	26%	22%	4%	11%
25 to 34	26%	22%	26%	4%	22%
35 to 44	24%	22%	29%	6%	19%
45 to 54	33%	21%	25%	6%	14%
55 to 64	24%	14%	55%	0%	7%
65 or over	40%	0%	50%	0%	10%

Across age groups members were split in relatively similar proportions for each of the options. However there was one obvious trend that couldn't be ignored. As members become 'wiser' they tend to dress more 'For comfort' or to 'Blend in'. They are also more likely to be the boss who staff will set their dress standards to.

QUESTION 5: RATE ACTUARIES FASHION SENSE COMPARED TO THE REST OF THE CORPORATE WORLD

This question gave members the option to select more than one option, so the disclaimer for this table is that it will not add up to 100%.

Fashion Sense	%
Conservative	55%
Smart and Professional	43%
Sexy	2%
Poor taste	13%
Tragic	12%

It seems that Actuaries view themselves as more 'Conservative' compared to the rest of the corporate world and it is very pleasing to see a relatively low proportion of 'Poor taste' and 'Tragic' responses.

To the gentleman who enjoys seeing an Actuary with or without 'VPL' – each to their own... For those who are unaware of this fashion acronym type it into a search engine – don't worry your company website blockers won't go out of control.

The most insightful comment to this question was "We tend to be at both ends of the bell curve – really boring or really out there". This will become apparent over the next few questions…

QUESTION 6: DO YOU DRESS DIFFERENTLY DEPENDING ON…?

Reason	%
Client meeting	78%
Board meeting	61%
How you are feeling that day	35%
How late you wake up	22%

78% of members will dress differently depending on a client meeting. So the next time you're in a meeting with a consultant or external party, take a moment to admire the outfit that they've worn just for you!

QUESTION 7: DO YOU THINK DRESSING BETTER MAKES MORE OF AN IMPACT ON FIRST IMPRESSIONS OR INCREASES YOUR CREDIBILITY?

Yes (92%) No (8%)

A large number of respondents indicated yes, with many stating that "First impressions are important". In a traditionally actuarial way, many respondents (both from the yes and no camps) commented that "ultimately your credibility depends on the work produced".

QUESTION 8: CAN YOU PICK OUT WHO AN ACTUARY IS BASED ON THEIR ATTIRE?

Yes (15%) No (85%)

Despite the stereotypical image associated with Actuaries a large proportion of members answered no to this question and a few quite appropriately stated that "we are no different to the other management professions".

The minority who did answer yes to this question tended to make a 'cardigan' related comment.

QUESTION 9: HOW OFTEN DO YOU BUY NEW CLOTHES FOR WORK?

Age Group	Gender	Weekly	Fortnightly	Monthly	Quarterly	Half Yearly	Yearly
Under 25	Female	0%	14%	43%	14%	14%	14%
	Male	0%	0%	0%	35%	30%	35%
25 to 34	Female	2%	5%	24%	40%	10%	15%
	Male	1%	0%	9%	21%	28%	37%
35 to 44	Female	0%	0%	25%	16%	28%	28%
	Male	0%	0%	8%	16%	39%	34%
45 to 54	Female	0%	0%	13%	44%	25%	0%
	Male	0%	0%	2%	17%	42%	40%
55 to 64	Female	0%	20%	0%	20%	20%	40%
	Male	0%	0%	0%	16%	40%	36%
65 & >65	Female	0%	0%	0%	0%	0%	100%
	Male	0%	0%	0%	11%	11%	56%

Within each age group it is not surprising that females shop more frequently than males. Younger age groups also shop more frequently, probably in order to expand on their limited work wardrobe. It would have been very interesting to collect data and observe whether internet shopping and the strong Aussie dollar are significant factors in shopping frequency…perhaps for a future Pulse.

There is one very important question that needs to be asked to the gentleman and lady who shop on a weekly basis – how do you sneak your purchases home?

QUESTION 10: ESTIMATE THE TOTAL COST OF YOUR WORK WARDROBE (INCLUDE ITEMS SUCH AS TIES, CUFFLINKS, SHOES AND BAGS)

Gender	<\$5K	\$5–10K	\$10–20K	\$20–30K	\$30–50K	\$50K+
Female	35%	30%	19%	5%	2%	2%
Male	56%	30%	7%	2%	1%	1%

Actuarial ladies have estimated the cost of their wardrobe to be skewed towards the higher bands compared to the gentlemen. We apologise for not asking how much you saved when purchasing these items, a statistic most women are very keen to quote in order to justify themselves.

Those with the more expensive wardrobes may be living the words of fashion savvy Carrie Bradshaw (from the TV show 'Sex and the City'): "I want my money right where I can see it - hanging in my closet".

QUESTION 11: WHAT IS THE WORST FASHION FAUX PAS YOU HAVE SEEN IN THE OFFICE?

The most frequent crimes against fashion (in alphabetical order) mentioned were:

- Bow ties
- Cartoon/Novelty ties
- Cleavage
- Hawaiian shirts
- Leggings (as pants)
- Men who wear trousers that are too short
- Short sleeved shirts (with/without a tie)
- Shorts/short skirts
- White socks

It was astounding to read the number of times 'red pants / jeans' was mentioned – there are obviously some members who aren't advocates of the 'hipster' trend.

This question did generate some highly entertaining answers. An entire article could easily be written, but here is just a sample of a few gems:

- "Fish-net shirt so an Actuary could show off his efforts at the gym". Did he have an eight-pack?
- "A small tutu occasionally worn over a black body suit" – this respondent mentioned they witnessed this in the 80s.
- "Mankini" – Was this an exam dare?
- "Beige suit" – accompanied with the name of the Actuary who wore it…
- "White shirt with 20 years of underarm sweat".
- "The grad who turned up to their first day of work with the 'square' creases still on the shirt like it had just been pulled out of the packet" – aww bless!
- There were also a couple of comments targeted at accountants which are not fit for print!

CONCLUSION:

With this new knowledge of the profession and its dress sense the next Actuaries Institute conference is going to be quite a spectacle. We look forward to counting just how many cardigans are present in the room! A

FSF Organising Committee

Financial Services Forum 2012

The forum was a lively and informative event, with a 'creative' start leading to a full and insightful program of relevant topics, presentations and peer discussions.


Todd Sampson presenting

KEYNOTE ADDRESS

Creativity may seem an unconventional subject to start a conference of actuaries, but Todd Sampson kicked things off with an energising and inspiring session. Todd is the CEO of Leo Burnett, a highly regarded advertising agency. His credibility stems from being the brains behind Earth Hour, as well as his appearance on the ABC's *The Gruen Transfer*. His key premise is that creativity is the last remaining advantage available to companies. But we have to beware. When people enter the corporate world we are "hit with a freight train of conservatism". Fear is leading people and companies to avoid creativity. Todd then coached the audience on overcoming fear. His theory is that if you can be braver for five minutes longer than the next person, you will succeed. Having had tea with Sir Edmund Hilary and been given the advice "Todd – don't be afraid", Todd embarked on a mind-bending account about climbing a mountain in Alaska.

His parting thought… companies must become gardens of creativity, not prisons.

PLENARY 1 – CHARTING A COURSE THOUGH THE GLOBAL ECONOMY

Dr John Edwards talked about how the Australian economy has increased steadily over the last 50 years despite a number of very large and prolonged global downturns including the GFC more recently. He also commented that while productivity had decreased over last few years and labour productivity reached a plateau, he expected the strong investment pipeline in both mining and services industries to increase productivity over the next 20 years and to support continuing economic growth in Australia. Chris Ryan warned of a potential 'second barrel' impact from the European crisis. Chris argued that bank bad debts and high unemployment in Spain, and potentially in Italy, could lead to tipping points that would lead to a second crisis. This in turn would lead to prolonged volatility and low top line growth in US and Europe. However the China story continues, with plenty of juice left in the five-year 'go out, go west, go green' plan which encourages Chinese companies to expand overseas.

PLENARY 2 – THE DIGITAL REVOLUTION

Tony Davis from Quantium gave an overview of how the digital revolution has already fundamentally changed the ways consumers behave. The explosion of data available through social media sites, online shopping


Plenary 1 – John Edwards, David Goodsall and Chris Ryan


Plenary 2 – Tony Davis, Alex Twigg and David Goodsall

Panel Discussion

Plenary 3 – Marc Lieberman, Richard Howes, Barry Rafe, Tony Lally and Brian Bissaker

Plenary 4 – Michael Pennisi, Barry Rafe, Pauline Blight Johnston and Melanie Evans

Plenary 5 - Barry Rafe, Andrew Gale, Debbie Blakey and Paul Barrett

sites and loyalty schemes means that customers increasingly expect highly-targeted offers and communications from brands at the right time in the right place. Alex Twigg demonstrated how UBank are leading the charge in responding to these changing consumer needs. He gave various examples of the bank connecting with customers via Twitter and YouTube, and ensuring that UBank is present wherever the customer is online.

PLENARY 3 – REACTIONS TO RETIREMENT

Retirement incomes and the approaches by various industry players was the focus of the Plenary 3 Discussion Panel. Ex-Colonial CEO Brian Bissaker pointed out the flexibility of Allocated Pensions which allow for flexible asset allocation strategies and drawdown patterns. Richard Howes, CEO Challenger Life advocated for a greater role for annuity products, while Marc Lieberman, CEO MetLife Australia, brought some overseas perspective on products which have succeeded well. However Tony Lally, CEO of Sunsuper, emphasised the need for products which were sustainable longer term and raising member awareness on the difference between capital appreciation and income assets.

PLENARY 4 – GIMME, GIMME … A GUIDE TO CONSUMER NEEDS

The second day opened with three skilled presenters who shared a passion for focusing on what customers really want. Melaine Evans started the discussion by outlining her customer centric approach to 'BT Super for Life'. This systematic approach first captures the customer requirements, next creates a prototype that meets these and finally delivers an effective solution. Michael Pennisi described QSuper's new approach to managing default members and retirement outcomes. Pauline Blight-Johnson changed focus from super to life insurance and gave an assessment of the life industry's performance from a customer's perspective. Commenting that the industry must remove road blocks, make it easier to get underwritten, provide a simpler product and live in our customer's world not our own.

PLENARY 5 – THE HARD SELL

Paul Barrett gave an overview of how ANZ Wealth views and engages the customer, noting the age old problem in what the customer is willing to pay being much less than what it costs to deliver financial advice. He also discussed the implications of FoFA regulation which prohibits ANZ remunerating bank branch staff for selling wealth management products.

Debby Blakey, deputy CEO of HESTA Super Fund, discussed what their approach to financial advice is, given the particular characteristics of an average HESTA member – typically a female with a broken employment history and a median balance of AUD$10,800. Debby emphasised the importance of education and outlined Hesta's approach to providing both general and limited personal advice services.

Andrew Gale, former CEO and Managing Director of Count commented that confidence in financial advice has been diminished and that a professional governance framework is needed. Andrew also talked about FoFA regulation and the implications for future advice models and access to advice within various customer segments, pointing out that the middle Australia is potentially disenfranchised with the new financial advice model going forward.

PLENARY 6 – LEVERAGING ENTERPRISE RISK MANAGEMENT TO SHAPE STRATEGY – A BOARD PERSPECTIVE

We opened with awe and finished with a flourish! For the last session of the Forum, following their presentations Greg d'Arville, principal of CRG Essentials and Dick Morath Chairman of GWM Advisor Services had a lively on-stage discussion with facilitator host Barry Rafe spurred on by a stream of direct SMS questions from the floor.

Brendan Pon, Ben Ooi, Ming Tan and Aravind Srinivas

Plenary 6 – Dick Morath, Barry Rafe and Greg D'Arville

Katharine McLennan and Melinda Howes

Greg brought his non-actuarial and non-financial services experience and perspective to the Board role on risk and strategy. Dick reflected on his board experience around the business of providing financial advice and the need to really understand the thinking of your senior management team and the advisor group by meeting them in person and asking direct questions.

CONCURRENT SESSIONS

The topics addressed in concurrent sessions were in accordance with the theme of the Forum, Think Big.

With Barry and Melinda's appropriately titled paper 'Living Until 120: The implications for Absolutely Everything' arguing that significant change is eminent for the financial services industry, driven by longevity and technology. They challenged the Actuary to step up from back office compliance and low order risk management, and to open up and drive the discussion on the impending changes in the pipeline.

Martin Mulcare gave us the tools and techniques in 'How to Think Big', while Jules Gribble sized up the micro-insurance market in 'How to Think Big by Thinking Micro'.

The breadth of topics covered at FSF2012 was excellent – visit http://www.actuaries.asn.au/FSF2012/Program/ProgramSnapshot.aspx to view the full range of papers, presentations, audio and webcasts.

THE COCKTAIL PARTY

FSF2012 broke with the previous tradition of hosting a sit-down dinner and opted for a cocktail party instead, giving delegates the chance to mingle casually over drinks and canapés, navigate the crowd and leverage the network effect. With skillfull jazz musicians setting the mood, there was plenty of opportunity to catch-up and meet new members in a casual setting. As the cocktails wound down delegates filtered out to dinner in groups, or those feeling lucky, hit the casino floor.

Anthony Asher and Bozenna Hinton

Martin Mulcare and Lesley Traverso

Andre Dreyer, Hoa Bui and James Collier

Michael Rice and Greg Martin

Jennifer Lang, Anton Kapel and Martin Paino

Mike Sherris, Michelle Finlay and Cathy Nance

David Goodsall (2nd from left) with Melville Biennial Convention Prizewinners Jamie Reid, Ashish Ahluwahlia and Sonia Tripolitano

FINANCIAL SERVICES RESEARCH PRIZE

The Actuaries Institute Financial Services Research Prize is intended to both promote and recognise research activities that focus on results that are of direct relevance to practising professional actuaries; i.e. a focus on professional research as is typically carried out by members and reported on at the Financial Services Forum. The inaugural prize was presented at the end of FSF2012 to **Ramani Venkatramani** for his paper Actuarial Challenges in Defined Contribution Schemes.

Events like FSF2012 are only possible with the support of our sponsors. The Organising Committee would like to thank **Towers Watson, RGA, DW Simpson, KPMG, Deloitte, Swiss Re, Matt Noyce** and **Milliman** for their support.

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VIEW FROM THE EDITOR – CREATIVE COURAGE

Delegates at FSF2012 were blown away by Todd Sampson's opening talk on creativity versus fear.

He used humour, inspiration, stories, music, video, examples as well as body language, tone and simple language with extreme effectiveness. His message was punchy, clear and simple.

Todd passionately weaved the following take-home messages into his awe-inspiring story of meeting Sir Edmund Hillary and climbing Mount Everest:

- creativity does not only belong in the arts;
- there are three main types of fear: fear of the unknown, fear of failure and fear of looking bad;
- unremarkable people can overcome fear by just "being braver for five minutes longer";
- one antidote to fear is action.

He also gave several interesting examples of creativity in his industry:

- 'convention killers' – e.g. an effective way of getting the message that "smoking was bad for you" through to young girls was that "smoking causes ugliness";
- 'reversing' – what if the situation was reverse? He gave an excellent example of when the Canadian legislation required factories to place their effluent pipes upstream of the factory which is significantly 'greener' behaviour than other incentives;
- 'what if' – accessorising Barbies dolls to create different personalities reinvigorated the previously stagnant market;
- 'rent a head' where one considered different perspectives – e.g. to get young children to use soap, a Disney toy was embedded in the middle of a transparent soap so that the child would have to use the soap to release the toy.

Other messages that stuck in my head were:

– "advertising is the price companies pay for being unoriginal"; and
– a video of Apple's 'Think Different' commercial from the 1980s.

Todd's talk was not technical or financial however, it set the benchmark for the rest of the Forum. He had an incredible charisma and presence, and easily captured my and probably the majority of the audience's attention. I sat there thinking that we need actuarial leaders like Todd to inspire us…

Ben Ooi *Editor*

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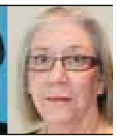


Professionalism CPD

A recent report to Council on the review by Council's Professionalism CPD Working Group (comprising Jules Gribble, Estelle Pearson and Stephen Woods) of the delivery of professionalism training by the Institute in light of the changing environment noted that:

Reputation as well as competence, are vital to the actuarial brand. Professionalism is a core part of both of these. Competence is based on gaining the appropriate technical training and experience. Reputation is underpinned on applying and being seen to apply, professional approaches and behaviours. Professionalism is vital to the standing and success of the actuarial profession.

The pace of change and development of technical knowledge, inside and especially outside, the actuarial profession, is rapid and pervasive. This pace and breadth of change can only be expected to increase, as can the interchange between the actuarial profession and other professions.

Therefore, it is not now appropriate to consider that training received at the beginning of a career will be sufficient to sustain a lengthy career. The current level of focused professional training delivered to the Australian profession has not kept pace with changes in the actuarial and external environment and may not be adequate in the current environment. Professionalism is multi-faceted and needs developing on a life-long basis reflecting both the environment and an individual's experience.

Council supported the Working Group's recommendation to re-emphasise to Members that professionalism training may be done as part of CPD requirements. Council also discussed the possibility of introducing a mandatory minimum annual requirement relating to professionalism CPD.

PROFESSIONALISM AS PART OF ONGOING CPD

Members are strongly encouraged to undertake some form of professionalism training as part of their CPD and are reminded that clause 4.4 of Professional Standard 1 (CPD) specifically cites "professionalism, including professional and ethical standards" as a form of compliant CPD. Undertaking professionalism training assists Members in meeting the profession's expectations under the Code of Professional Conduct with regard to the standards of professional behaviour. It is a core part of safeguarding the reputation of the profession.

As noted by the Working Group, professionalism is both multi-faceted and needs developing on a life-long basis, reflecting both the environment and an individual's experience. Examples of areas of study related to 'professionalism' include: management of conflicts of interest; behaving with integrity, honesty, and due care; as well as personal and professional ethics.

It is a matter of individual judgment as to what type of training is needed in professionalism and that judgment is influenced by an individual's career stage. Members are encouraged to seek out CPD sessions and materials provided by other associations, as well as by organisations interested in professionalism issues.

NEW PROFESSIONALISM ONLINE LEARNING MODULE

The Institute has begun the development of a series of online learning modules in specific areas of professionalism.

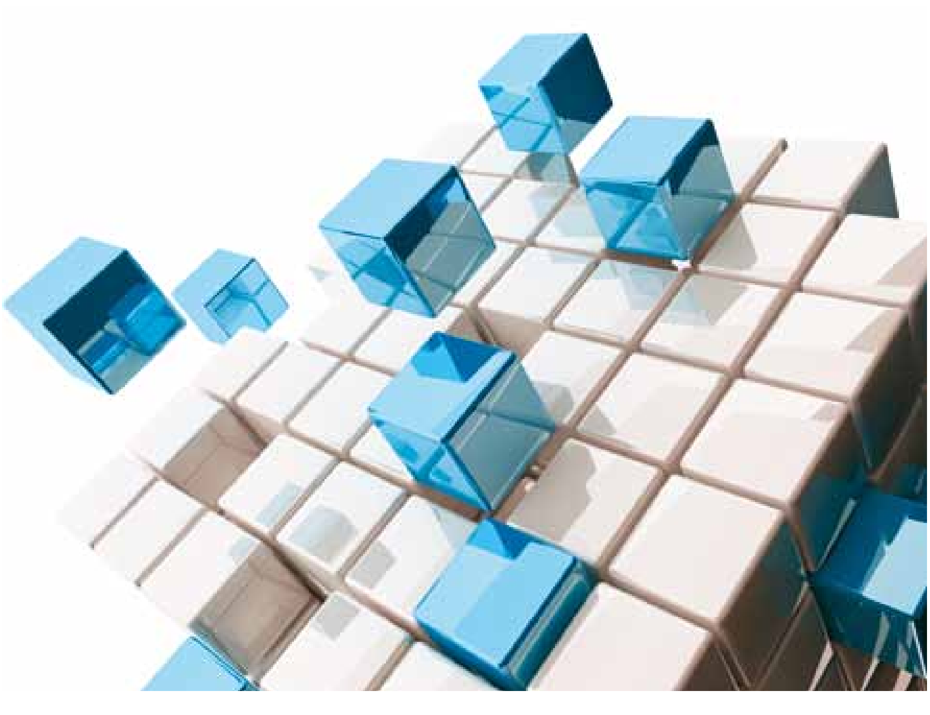
Later this year, the first of these modules – Practice Risk Management – will be launched. It will include both formative assessment and an optional summative assessment. Those who successfully complete the module will demonstrate:

- an understanding of the different practice risk management techniques and tools, with respect to both client management and work habits and practices;
- an awareness of failures in practice risk management and the consequences of such; and
- an ability to identify practice risk management techniques and tools for implementation in their own practice.

This module will provide members with a 'short and sharp', easily accessible, web-based training experience.

Future modules will be produced on topics such as whistleblowing, managing conflicts of interest and acting impartiality/independently.

Members are strongly encouraged to take up the new online course later this year. A



A Framework for the Future Capability of Actuaries

In February 2011, the Institute launched the 'Actuarial Capabilities for the Future Project'. This project aimed to develop a forward-looking capability framework for actuarial practice.

We are very pleased to announce that the **Actuarial Capability Framework** has been completed, and that with expert help, we've built an interactive online **Capability Assessment Tool and Report** that lets you compare your capabilities against the Framework and identify any gaps. The Capability Framework and the Assessment Tool will be launched on Monday 9 July 2012.

WHY CREATE A CAPABILITY FRAMEWORK?

Capability frameworks provide explicit statements of what people need to be able to do to practice successfully as professionals. The Actuarial Capability Framework analyses actuarial practice into functions (major work areas), which are sub-divided into elements (the major functions disaggregated into their components). Indicators of what might constitute successful performance of the elements are also part of the framework.

The Actuarial Capability Framework focuses on what actuaries who have had considerable experience should be able to do, **it is aspirational and provides a pathway that can be followed by individuals to reach the higher levels of the profession**. It covers a range of actuarial practices and can also be used as a pathway for actuaries seeking to move from one area of practice to another or into senior leadership positions.

THE DEVELOPMENT PROCESS

The project was guided by **Professor Andrew Gonczi**, Education Specialist in the Faculty of Health Sciences at the University of Sydney and **Professor Paul Hager**, Emeritus Professor from the Faculty of Arts and Social Sciences at the University of Technology Sydney. Both Professors have worked collaboratively in the area of Capability Framework design and development since the mid-nineties and were pioneers in developing a methodology for the development of capability frameworks for professions. They have performed similar work for the teaching profession, migration agents, lawyers and osteopaths.

The development of the capabilities document was project managed by **Philip Latham**, the Institute's Head of Education. Philip recruited the academic consultants and sourced volunteers who met the required demographics at each stage of the process according to the methodology. He attended all meetings and

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managed the version control of the document.

A lot of work went into developing the Capabilities Framework document. It took 13 months to complete, from February 2011 to March 2012. There were 13 meetings with Institute members - a total of approximately 30 hours. 48 actuaries were involved in meetings to develop and review the capabilities document. These meetings were initial workshop of leaders of the profession (9), cross-functional focus groups in Sydney(8) and Melbourne (10) of actuaries with a wide range of practice areas and years of experience, five function specific review groups each with experienced actuaries in practice areas relevant to each specific function (16) and five critical incident interviews with recent qualifiers. Participants included the CEO, the 2011 and 2012 Presidents, members of Council, members of Practice Committees, the Leadership Committee, academics, actuarial recruiters, and experienced and recently qualified actuaries in both traditional and non-traditional areas.

THE ASSESSMENT TOOL, REPORT AND DEVELOPMENT PLANNER

The Assessment Tool enables members to identify and weigh the importance of the core skills required for their role relative to their capability to perform and deliver outcomes indicated in the Framework.

After completing the Assessment, a Capability Assessment Report is generated that shows capability relative to two measures;

- importance of the capability to the role you are undertaking; and
- your present ability to perform and deliver capability outcomes.

Capability gaps are displayed numerically and graphed to identify areas for development and where you may have ability above that which is required in your role.

The Capability Development Planner will be downloadable via the Report as well as the Institute website and can be used to plan your future CPD experiences to build capability and to reduce any assessment gaps.

CPD offered by the Institute will be mapped to the Capability Framework to enable members to select and participate in activities that will build their capability and close their gaps.

HITTING THE DEVELOPMENT TARGET

How will the Capability Framework, Assessment Tool and Report support and drive actuarial capability development?

To hit their development targets Members:

- launch the Assessment Tool and receive their Report;
- identify capability needs and search for experiences to address their needs;
- gain CPD, grow their capability and improve their work performance;
- undertake the Assessment again in six months and note changes in the report;
- identify where their development experiences have decreased a capability gap; and
- use their Capability Assessment Report to inform their employer performance review.

FEEDBACK ON THE DESIGN AND DEVELOPMENT OF THE FRAMEWORK

The design and development of the Capability Framework, Assessment Tool, Assessment Report and Development Planner has been achieved with the help of many people. Throughout the process, reviews have been undertaken and feedback sought to finely tune the development.

Throughout the next year, the Institute will provide opportunities for you to give us your feedback. We look forward to hearing how you have used the Framework and associated tools and templates as we want to ensure that they continue to support professional growth and development of actuarial capabilities for Members and the Profession. A

Professor Gonczi, on "why we need a capability framework" – "Over the last twenty years, virtually all professions in Australia, or at least some parts of them, have adopted a capability framework (sometimes called competency standards). Potentially they provide the public with direct knowledge of what might be expected of a professional in a particular occupation. (In practice, however, most members of the public rely on the accreditation and regulation systems for each profession to warrant that professionals have the knowledge skills and dispositions to perform competently. However, the process of accreditation of professionals, whether at initial or higher levels, is now almost always based on capability frameworks, whether or not a registration model is also in use)."

Philip Latham, Institute Head of Education (Project Manager) – "The development of the capabilities framework has been one of the most interesting projects that I have been involved in at the Institute. The production of the document has essentially been a consensus building exercise, with the end product articulating the knowledge, skills and dispositions of a capable actuary. The capabilities should now become a central part of the Institute's activities and its members in a range of areas such as the education program, on-the-job training, CPD courses, conferences and events."

Anonymous, (participant in the initial two-day workshop) – "Relative to past exercises I have been involved in, I feel you have approached the initial exploration of this in a way where there is a real chance for change (engaging the President, CEO and the profession early on, taking a holistic view rather than a fix-it view). I look forward to the continuing engagement of the profession in this important initiative."

The Developing Actuary

"A development-oriented leader pushes people beyond the threshold of their self-imposed limits toward their own unrealised potential."
Lyman Wood

A LEADERSHIP DEVELOPMENT EXPERIENCE

When I reflect back, one of the times I really developed my leadership was when I took on the role as Chief Actuary for AXA Life Singapore. Apart from moving to a new country, reporting to a CEO and being part of a leadership team for the first time, I had a much bigger team and much broader responsibilities, including areas where I had no working expertise.

One vivid memory was presenting a re-priced participating product range to the 150 most senior agents and advisers – with lower projected bonuses, lower commissions and higher premium rates. Gulp. I prepared for the workshop for weeks, drafting and crafting the messages with the executive team, imagining my responses to the adviser questions. Even though I hadn't anticipated the hushed uproar, followed by a slew of questions, and mad beeping as the advisers sent each other text messages from one side of the room to the other, I somehow maintained my equilibrium. And I stood shoulder to shoulder with the Head of Distribution as we helped his people work through the implications.

This stretched and challenged me in ways that has shaped how I bring myself to the challenges I face today, and is a constant reminder that if I have got through times like that, I can get through just about anything . So what was it about this experience that helped me to develop? More broadly, how do we develop our leadership as actuaries?

LEADERSHIP DEVELOPMENT

For over 30 years, The Centre for Creative leadership (CCL) has been researching how senior managers learn, grow and develop leadership capacity throughout their careers. A core question CCL asks successful senior managers is:

"When you think about your career as a manager, certain events or experiences probably stand out in your mind; identify at least three key or memorable events in your career that made a lasting difference in the way you manage now".

Before reading on, I encourage you to take a minute out and reflect on this question – what three events have made the biggest lasting difference to your leadership development?

Answers from over 500 senior managers across 47 companies and four countries consistently fall into one of five categories (in order of importance):

- Challenging assignments (increased job scope, creating change, boundary spanning).
- Developmental relationships (mentor, manager as coach, dealing with conflict).
- Adverse situations (crisis, mistake, career setback, ethical dilemma).
- Course work and training (training programmes, professional discussion forums, self paced e-learning, reading).

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- Personal experiences (early life, early work, transitions, traumas, reflective practices).

Did your experiences fall neatly into one of these five boxes, or was there something else? When I have run this exercise in organisations, I find that by and large people's leadership development experiences mirror these, and also tend to have a similar order.

CHALLENGING ASSIGNMENTS

So why do challenging assignments rate so highly, whereas coursework and training ranks only fourth? To explore this a little further, it is useful to distinguish between three types of development – technical, professional and leadership.

Technical skills can easily be taught and in many instances self taught; by nature they are specific models, techniques and processes that are highly replicable. How to apply these requires workplace experience, and challenging workplace assignments will support embedding the learning.

Professional skills are more conducive to being developed in the workplace, and harder to replicate in a training environment. They require a level of judgment, and a level of embracing the world beyond the immediate profession. Business acumen and communication are great examples.

DEVELOPING LEADERSHIP CAPACITY

For leadership development, the focus of this column and the focus of the CCL research, there is an old axiom that leadership can't be taught; it can only be learned. Leadership is much more about mindsets and behaviours; how we choose to respond in the face of challenges. These are opportunities that present themselves in our day-to-day work, such as my challenge with the advisers.

What this suggests is that challenging workplace assignments will be pivotal in developing leadership capacity. The word challenge implying there is a stretch, something that you don't yet feel comfortable with. In Ron Heifetz's book *The Practice of Adaptive Leadership* he puts forward the thesis that people learn significantly through times of disequilibrium, and through disequilibrium there is a productive zone of learning. If the disequilibrium is too minor, it means little learning takes place, as the problems trying to be solved are already known and you are below the productive zone of learning. If the disequilibrium is too great, then the tension or anxiety becomes so high that learning is inhibited.

This has significant implications for how we lead ourselves and our teams. If we don't provide enough challenge for ourselves or our teams, we will not build much new capability. If we stretch and challenge so much that it causes deep anxiety, learning will be inhibited and people will become overwhelmed or burnt out. The role of leadership is to set the challenge in the productive zone of disequilibrium, which lifts people out of their comfort zone, but not so uncomfortable that it becomes unsafe.

How can you support your own development or that of your team through challenging actuarial assignments? How will you stretch yourself and your teams beyond the current limitations? How will you find space for developing yourself and your people within the constraints of your workplace culture? If the constraints in your workplace culture are too inhibiting, how will you challenge them to provide greater opportunity for development? The following are food for thought:

If you are leading people, have regular job rotations for your people, to allow them to deepen their capacity and to reduce single points of dependency. Encourage them to peer review each others work, so that they can learn from each other. When people are on leave, including you, have another member of the team step in to that position so that they can broaden their experiences.

If a leadership challenge for you is to build more effective professional relationships and networks, then join an Institute sub committee. Seek out internal sub committee roles and offer to represent your team in cross functional initiatives; if you feel particularly courageous, work with the client that most people are complaining about. I just love that saying "we often learn more from our enemies than our friends".

SETTING CREATIVE CONSTRAINTS (LESS TIME TO DO SAME PROCESS)

In the 1400s, Portugal navigation wasn't sufficient to sail around a rocky outcrop called the Cape of Storms and many sailors died and boats were wrecked. The Portuguese continued to modify their navigation equipment until finally they were successful in 1488. This brought Portugal enormous wealth through the spices they brought back to Europe, and they also become the most powerful navy in the world. The Cape of Storms was renamed to the Cape of Good Hope.

There is an old axiom that leadership can't be taught; it can only be learned. Leadership is much more about mindsets and behaviours; how we choose to respond in the face of challenges. This suggests challenging workplace assignments will be pivotal in developing leadership capacity.

WHAT CAN YOU DO?

What are the Cape of Storms in your organisation? Seek out challenges through creative constraints. If you work in a financial reporting role, it may mean setting a target of speeding up the reporting process by a day. Doing this creates all kinds of opportunities to experiment and opens up new possibilities.

Put up your hand to support a really difficult project, one that hasn't yet been able to be solved in the organisation. You will not only learn a lot about the technical nuances of a problem, but will no doubt need to consult widely, engage people differently, and fundamentally build your leadership capacity in order to move towards a solution.

There are many ways that challenging assignments can help develop our capacity to lead. If you have other ways that you have seen work well in an actuarial context, please email me so that I can share these in future columns.

Next months column will focus on building leadership capacity through developmental relationships. A

Working in the Energy Industry

Actuaries are synonymous with risk management, so a career in one of the world's most variable commodity markets seems reasonable. Throw in the phrase 'energy industry' though and you'll rapidly find that there aren't many actuaries about.

After qualifying as an actuary in Ireland in 2005 I've spent the last six years working for Meridian Energy. Meridian is an integrated developer and generator of renewable energy and is New Zealand's largest renewable energy generator, supplying 30 percent of the country's total electricity needs. The industry is complex, fast paced and data intensive, with pressures from wholesale and retail markets. Plus, as in all geographies, electricity is a key commodity that drives much scrutiny from political and regulatory bodies as well as from the general public. It calls on many of the skills learned both in the actuarial exams and in traditional fields; and is a hugely rewarding field in which actuaries can really make a positive difference.

Consumers can be reasonably expected to only care about having competitive, cost-effective and reliable power and are largely shielded from how the market operates. Behind the scenes New Zealand's energy generation is continuously traded in half-hour blocks, with generators offering tranches of available output into the market and the system operator controlling the dispatch system. This creates initial spot prices at a handful of 'input nodes' where power enters the national grid. Correspondingly power is taken from the national grid at multiple 'exit nodes', meaning over 250 different spot prices per half-hour across the country, often varying significantly by region. In comparison the Australian market has four nodes.

These spot prices are highly variable; fuel supply, plant or line outages or general supply and demand dynamics interact to create prices that can rapidly rise and fall. Energy generators sell their input to the grid, receiving these prices as revenue, while energy retailers purchase power at spot prices and sell to customers at fixed prices. The fact that customers are protected from the half-hourly price fluctuations brings comparisons with more traditional actuary fields (e.g. managing variable insurance costs or long-term pensions investments), while exposure to such market risks drives careful management of company portfolios.

Graph 1 shows historic monthly average spot prices at an Auckland node. While this illustrates monthly variability it hides intra-month and intra-day effects. Over the 2011 calendar year the node's simple average spot

Benmore Dam – the largest earth dam in the Southern Hemisphere

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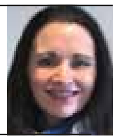
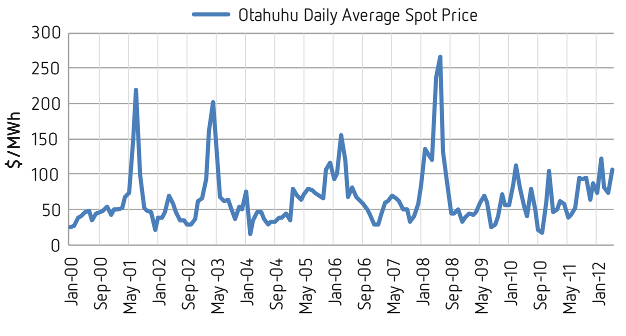


Graph 1: Historical Daily Average Spot Price (Auckland Node)



price was $65/MWh, however individual half-hourly prices ranged from $0 to over $8,000 and are also typically profiled according to demand. While some large users (typically industrials) may opt for some spot market exposure, most retail customers are on fixed rates. This continuous market variability has to be managed in optimising the use of resources (i.e. generation) and in calculating fixed retail tariffs that are both profitable and competitive.

The resulting wide net revenue risks have driven most New Zealand energy companies to adopt strategies of vertical integration; creating a mix of generation capability and retail customer bases and matching size and location. Limited power can be transferred between the North and South Islands and differing demand dynamics and fuel supplies in each island lead to different price levels and risks. While matching generation and load is the key portfolio management technique, it is supplemented with inter-company hedges traded either as energy futures on the ASX or as bilateral deals. Historically, companies' generation assets largely drove them to concentrate their retail exposures regionally, however government intervention through the Electricity Industry Act in 2010 saw both real and virtual asset swaps (traded as hedges). This creates significant changes to companies' retail portfolios due to substantial changes in overall risk exposures.

This macro-level management of revenue risks as well as risk appetites typically governs the size of companies' retail portfolios. The retail market itself is highly competitive, fuelled by changes to company profiles, focus on customer margins and government measures to increase competition. Retail margins are highly prized but difficult to optimise, with the industry rapidly moving to identifying, attracting and retaining specific customers. Customer switching has increased rapidly, with 25% of retail customers now changing supplier annually, so selection and management of acquisition and retention costs are key. To complicate matters, New Zealand has 38 different network regions, with individual network companies each managing the local grid and charging costs directly to retailers. The levels and structure of these costs can differ by meter type and often by time of day and are difficult to model and re-price to customers. As a result, retail tariffs vary significantly across the country – overall reflecting both regional wholesale risks, the cost of using the grid and the competitiveness of the local market.

Internally the industry brings huge modelling requirements; forecasting variable costs and outcomes and using rich intel to inform both effective risk management techniques and simple, competitive and profitable retail tariffs. Actuarial skills have been used to develop sufficiency models, taking 10 years of variable history and foreign exchange modelling algorithms to understand pricing scenarios where forecast net outcomes can be projected. Such models challenge traditional energy portfolio management techniques and offer new ways of understanding risks and rewards. Stochastic modelling and use of intensive data analysis packages are also key, while management focuses on clear KPIs and objective means of understanding complex and highly variable outcomes.

From an actuarial point of view this dynamic industry offers huge opportunities. From understanding the principles and practice of portfolio management, being comfortable with modelling risks and revenue outcomes, to understanding complex strategic issues. There are many opportunities to grow, explore and lead change in this non-traditional field.

What about from a purely customer point of view? Competition due to portfolio changes or long-term focus on retaining valuable customers can lead to service and price outcomes that put the customer in control. Meridian's PowerShop subsidiary is the world's first online energy retailer, where the customer can buy power in advance and take advantage of special offers in response to low spot prices. Smart meters that offer half-hour usage data and pricing plans can help customers move their usage to cheaper periods. Introduce smart appliances and the energy industry may just be poised to become the successor to smart phones as the cool kids on the block.

For me, it's offered me a valuable opportunity to grow portfolio management and pricing techniques; and to really make a difference to both the company's understanding of risks and its revenue outcomes. And it's not over yet; the industry keeps changing and it will remain an exciting place for anybody who loves a challenge. A

This article is written in the personal capacity of the author, and the views and opinions expressed do not necessarily represent the views of her employer Meridian

No Easy Answers

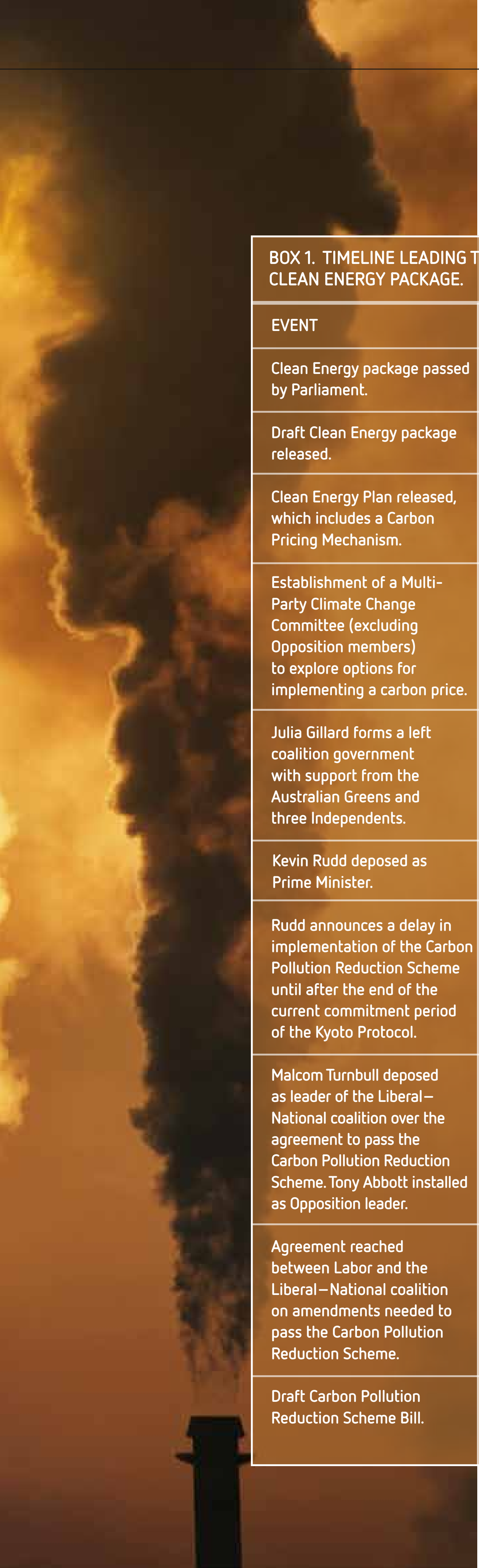
What is the risk of investing in Australia's clean energy future?

For carbon market participants, the successful passage of the Australian Clean Energy package in November 2011 was the high point of an otherwise disappointing year. Since November, investor interest has waned in the Australian scheme, as the political risk associated with the clean energy package has become clearer. This article briefly reviews the history of pricing carbon in Australia and factors affecting the political risk associated with the clean energy package, and offers some views on likely developments before the next general election.

HISTORY OF PRICING CARBON

Carbon pricing gained prominence during Kevin Rudd's successful 2007 election campaign that culminated with his victory over John Howard in November 2007. Since then, Australia has had a protracted political debate over pricing carbon (see Box 1). Political commentators partly attribute John Howard's political demise to his inaction over climate change and Kevin Rudd's fate was later sealed when he dropped the Carbon Pollution Reduction Scheme (CPRS). The subsequent collapse in the opinion polls precipitated a leadership coup that installed Julia Gillard as Prime Minister. The CPRS also claimed the scalp of Opposition leader Malcolm Turnbull, who lost the leadership of the Liberal-National coalition to Tony Abbott.

Prior to the August 2010 Federal Election, Julia Gillard promised the Australian people she would not introduce a carbon tax. At the general election, the Labor Party did not achieve the numbers needed to govern in its own right. When confronted with the political necessity of building a coalition government with support from the Australian Greens, political expediency prevailed, with Labor committing itself to action on climate change. Julia Gillard subsequently announced plans to start pricing carbon, starting on July 1, 2012, subject to negotiating an agreement with a majority in both Houses of Parliament. On July 28, 2011, the Australian Government



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BOX 1. TIMELINE LEADING TO THE CLEAN ENERGY PACKAGE.

EVENT	DATE
Clean Energy package passed by Parliament.	18 Nov, 2011
Draft Clean Energy package released.	28 Jul, 2011
Clean Energy Plan released, which includes a Carbon Pricing Mechanism.	10 Jul, 2011
Establishment of a Multi-Party Climate Change Committee (excluding Opposition members) to explore options for implementing a carbon price.	27 Sep, 2010
Julia Gillard forms a left coalition government with support from the Australian Greens and three Independents.	22 Aug, 2010 – 7 Sep, 2010
Kevin Rudd deposed as Prime Minister.	24 Jun, 2010
Rudd announces a delay in implementation of the Carbon Pollution Reduction Scheme until after the end of the current commitment period of the Kyoto Protocol.	22 Apr, 2010
Malcom Turnbull deposed as leader of the Liberal–National coalition over the agreement to pass the Carbon Pollution Reduction Scheme. Tony Abbott installed as Opposition leader.	1 Dec, 2009
Agreement reached between Labor and the Liberal–National coalition on amendments needed to pass the Carbon Pollution Reduction Scheme.	24 Nov, 2009
Draft Carbon Pollution Reduction Scheme Bill.	14 May, 2009

released a draft domestic clean energy package of bills, consisting of a carbon tax transitioning into an emissions trading scheme.

In November 2011, the Gillard government succeeded in getting the clean energy legislative package through the Australian Parliament. The package includes:

- A three year, fixed price period starting July 1, 2012 at AU$23.00, indexed at 2.5% p.a. until July 1, 2015 and then moving to a cap-and-trade emissions trading sche me.
- Coverage of stationary energy, commercial transport (aviation, domestic shipping, and rail, heavy on-road liquid fuel use from July 1, 2014), industrial processes, non-legacy waste, and fugitive emissions (it is expected that about 500 installations will be covered).
- A cap set by regulations, with a default decline built-in if the Parliament can't agree on the cap. Five years of caps are known and will be extended by a year each year.
- International linking from the start of the trading scheme (July 1, 2015), with 50% maximum limit on the use of international offsets.
- Ceiling and floor prices for the first three years of the trading scheme. Floor price AU$15.00 indexed at 4% p.a. in real terms. Ceiling price set at AU$20.00 above the expected international price, rising at 5% p.a. in real terms.

POLITICAL RISK FOR INVESTORS

Emission trading markets are subject to the risks commonly associated with commodities markets, but are particularly sensitive to political risk, as government actions can significantly affect the supply and demand characteristics of the market, and hence price. In the early years of the Australian scheme, due to the fixed price, political risk dominates investor concerns. There are a number of factors affecting political risk:

- **Business and community perceptions.** Australian businesses with liabilities under the scheme remain concerned about the costs of the scheme (both price and implementation costs), the lack of comparable international action (competitiveness risk), and the capability of the current government to implement the scheme. A deteriorating international economic environment, high domestic interest rates, and a high Australian dollar continue to fuel these concerns. Opposition groups have used the recent announcements by Bluescope Steel and others of job losses due to the sustained strength of the Australian dollar, to heighten community concerns over the cost and jobs impact of the Clean Energy package.

Emission trading markets are subject to the risks commonly associated with commodities markets, but are particularly sensitive to political risk.

- **International market prices.** If the current price weakness in the EU ETS (prices as low as €3.90 per ton) persists, the Australian scheme will continue to look expensive. The relatively high starting cost of $23 is potentially attractive for investors in emissions reduction projects, but significant price discrepancies between EU ETS and the Australian scheme will continue to be used by opposition groups as a reason to repeal the scheme.
- **Poor polling by the Gillard government and threats to repeal the package.** Continued weakness in opinion polling showing low support for the government, coupled with the changing political landscape at the State level, increases the perceived risk of political change at the next election. The Liberal–National coalition is committed to repealing the package and appears likely to close the Department of Climate Change and Energy Efficiency. After the Queensland election, Tony Abbott again reaffirmed his intention to repeal the Clean Energy package, and if necessary, go to a double dissolution election.

The future price of carbon is going to be subject to politically uncertainainty, and it is unlikely that the next general election in 2013 will resolve the balance of power issue in the Senate and deliver clear control to either major political party.

ANALYSIS AND OPINION

Despite the economic outlook and domestic opposition to the Clean Energy package from some industry segments, the Government has, so far, remained committed to the package. The Queensland election results may cause the government to rethink its current strategy, but given the dependence of the government on the Greens, it is unlikely that the legislation will be repealed. A sustained deterioration in the international or domestic economic situation may pressure the government to change the timetable for implementation of the scheme, but while possible, this seems unlikely because the government has tied tax cuts, revenues, and its election strategy to the scheme.

An early move to emissions trading, mooted by Kevin Rudd during the recent leadership challenge, would allow Australia to import the international price of carbon, with prices as low as €3.90 per ton. This represents a substantial saving for businesses. An early move to emission trading would likely trigger the minimum scheme price of $15 per ton and the Australian Treasury is opposed to this change without spending cuts, as it has projected revenues using the legislated $23 carbon price. It is also not clear if the government would have parliamentary support for such a change, due to the Greens holding the balance of power in the Senate.

It is unlikely that the next general election in 2013 will resolve the balance of power issue in the Senate and deliver clear control of the Senate to either major political party. This is due to the peculiarities of Australian Senate elections. Therefore, it will be difficult for an incoming Liberal–National coalition government to repeal the clean energy package. The government has also built-in safeguards within the legislation that are designed to frustrate any attempt by the Liberal-National coalition to weaken the package, by loosening the cap, should they gain power in the general election. The emission cap will be set by regulation, with a default decline built in if the Parliament can't agree on the cap. An incoming Liberal-National government has the option of holding fresh elections if its legislative agenda is obstructed in the Senate, leading to a double dissolution election. This would only occur if the electoral conditions were likely to deliver control of the Senate to the Liberal-National coalition.

In conclusion, there are no easy answers for investors, who will await the 2013 general election before deciding to commit significant funds. Before the general election, the Government may decide to modify the legislation, but this will be difficult without the Greens' support. However, the chances of modification or repeal of the legislation increase significantly if a Labor leadership change results in an early poll. Irrespective of the timing of the general election, investment uncertainty will continue due to the Government's poor electoral standing and the Liberal–National coalition's commitment to repeal the legislation. A

Dr. Nicholas Linacre is Managing Director of 2050Carbon and was lead author of the World Bank's State and Trends of the Carbon Market 2011 report. An earlier version of this article was published in *Trading Carbon*, Vol 05, Issue 08, October 2011.

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The role of the Actuary under the new capital standards

Overall, there seems to be consensus that the new capital standards are a positive development to the actuarial profession – provided we take the right approach…

The Life Insurance and Wealth Management Practice Committee organised a session on the role of the actuary under the new capital standards for life and general insurance, which are due to take effect from 1 January 2013. The session started with a 'mock up' debate of the hypothesis that the profession's role is being diminished by the new capital standards.

On the negative side, Iain Bulcraig and Heather Navid expressed concerns that, under the new capital standard, actuaries are being relegated to technical boffins, due to the increasing complexity of the new capital calculation. The profession's role will become more technical and less influential than in the current world. New members will desert, as the role will not be very attractive.

On the affirmative side, Kevin Allport and Brendon Counsel portrayed a world where the role of actuaries in insurance companies will be enhanced because the legislation formalises the actuary role as providing key input to the ICAAP process, in addition to our current role in advising the Board on reserving and pricing. Actuaries are likely to become more valuable and relevant, since we understand the various types of risk that impact an insurer and the implications of these risks.

There was a wide range of comments from the floor, including:

- The role of the actuary has been as an advisor since the Life Act of 1995. The new standards will really just reinforce this view, and formally expand it to capital management.
- The profession should avoid spending too much time with the calculations (as per the 1995 MOS implementation), but should instead spend time communicating to the business the implications of the change. This is how we can continue to be the key advisor to the business.
- The ICAAP report and the FCR are complementary, not overlapping.
- There were concerns about potentially insufficient resourcing provided to actuaries to perform the Pillar 1 calculations.
- In Solvency II, in the UK, the risk function was made the owner. The ownership of the capital management / risk management process (below board level) has not been called out by the Australian legislation. Is this an opportunity for the actuarial profession to own this?
- APRA's latest paper discussed target capital rather than target surplus, suggesting a bottom up rather than top down approach to viewing capital.
- Supervisory adjustment : APRA is aware of the angst in the industry as to how likely companies are to receive a supervisory adjustment, but is not expecting to have many adjustments, as LAGIC is more risk sensitive than BASEL
- Companies should be doing the thinking about ICAAP now. The September APRA paper will not provide the magic answer.

Overall, there seems to be consensus that the new capital standards are a positive development to the actuarial profession, provided we take the right approach by focusing on informing the business of the insights rather than getting bogged down with technical details.

Reflecting on the discussions, I think the impact on the role of the actuary is likely to be neither of the two extremes painted by the debaters in the session, but somewhere in the middle. I don't believe that the complexity of the new rules will turn the profession into calculators of capital requirements. As a profession, this is our strength, and in a way, it is the least of my concerns. We thrive on this stuff! The drivers of capital have changed, and we need to understand them and communicate them to the business. However, I see that this is well within our comfort zone.

Nevertheless, I am not convinced that the standards actually enhance the actuaries' trusted advisor standing with the business. In my experience, actuaries add more value if we are working with the business, rather than acting in a reviewing / watchdog role. The requirement that the board owns the ICAAP and actuaries provide input (and potentially formal advice) to the ICAAP leads to a subtle nuance: can actuaries be in the business to develop ICAAP with them, as well as reviewing the ICAAP? In my mind, a reviewer and the doer are two separate people. How would we manage this conflict?

APRA's risk-based r...evolution and the AA in ICAAP

In case you are wondering how seriously to take these proposed regulatory changes – it looks more like a tsunami than a wave. In broad terms the world's insurance capital regulatory processes are starting to align.

Insurance company regulatory capital requirements have evolved over time. Never has there been greater global focus and interest on this area than right now. In Australia the most recent indication is that APRA plans to implement the new capital framework from January 2013, only a hop, skip and half a leap year away!

A SUMMARY OF THE AUSTRALIAN PROPOSALS

APRA has proposed a three pillar approach to insurance capital regulation:

PILLAR 1 is a prescribed formula with a focus on being sensitive to the underlying insurer risks (as opposed to a more generic one-size fits all approach). The prescribed risk sub-categories are shown in the first pillar below.

PILLAR 2 includes a judgemental Supervisory Adustment to capital, should the regulator deem this necessary. Combined with the Pillar 1 capital calculations this will amount to the Prudential Capital Requirement (PCR).

In Pillar 2 APRA also introduces the Internal Capital Adequacy Assessment Process (ICAAP). This puts an insurer's capital risk management process in the spotlight, providing the framework for the management of the Prudential and surplus capital. APRA places responsibility for the ICAAP squarely with the Board.

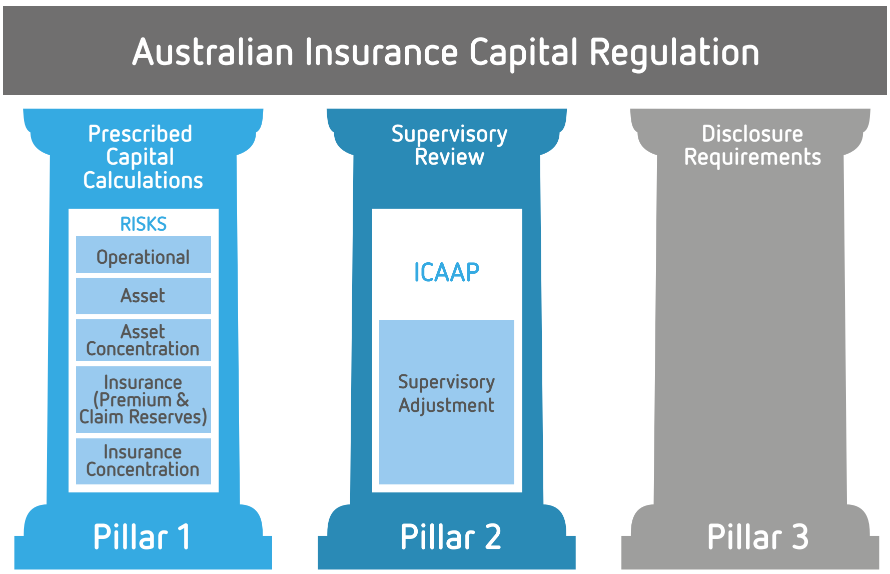
The ICAAP governance will need to be in place and documented in an ICAAP Summary Statement from 1 January 2013.

The Board of the insurer will be required to submit an ICAAP report annually to APRA. This will include a projection of capital levels against target levels for a three-year period, a comparison of the outcomes of the capital management strategy against planned and detail any changes to strategy or capital management over the year.

Emphasis has been placed on a clearly defined and understood risk appetite statement that should be central to driving strategic decision making. The ICAAP should provide evidence of risk management being embedded in the day-to-day management of the business, with a focus on return-on-capital (ie linking the risk management and capital management strategies).

PILLAR 3 covers the reporting and disclosure requirements. The Supervisory Adjustment and therefore the Prudential Capital Requirement will not be put into the public domain.

How much information should be made publicly available is likely to continue to be a moot point for years to come.



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INTERNATIONAL DEVELOPMENTS

In case you were wondering how seriously to take this change, it looks more like a tsunami than a wave.

In broad terms the world's insurance capital regulatory processes are starting to align (To name a few: Australia's ICAAP, Europe's ORSA, the UK's ICAS, the USA's SMI and South Africa's SAM are becoming more closely aligned).

It is interesting to compare the development of capital regulations in the different regions as indeed it is to compare the underlying risk measures and calibrations (potentially a subject for a future article).

Risk based capital has roots in Europe as far back as the 1970s. Solvency II, is the latest initiative to modernise the European capital and risk management regime. It has had a lengthy gestation period, not least because of the politics involved in implementing such a directive across multiple countries. Five separate Quantitative Impact Studies have been completed since 2005 and the target implementation date of the Own Risk and Solvency Assessment (ORSA) has moved out to 2014.

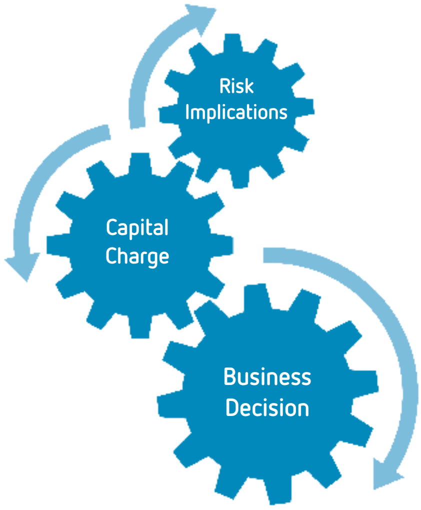
In the UK the Financial Services Authority (FSA) used its Advanced Risk-Responsive Operating Frame Work (ARROW) to operationalise its risk based regulation of the UK insurance industry. This framework has evolved since 2003, being complemented by the implementation of the Capital Requirements Directive and Individual Capital Adequacy Standards (ICAS). This pre-empted Europe's Solvency II directive, assisting UK insurers with the early implementation of changes that were likely to be required by the ORSA (which is due to replace it when it becomes effective).

In South Africa the Financial Services Board (FSB) recently implemented an updated interim risk based capital formula (effective January 2012), to precede the Solvency Assessment and Management regime(SAM), which has a target implementation date of January 2013.

In the USA a risk based capital formula has been in place for many years but the National Association of Insurance Commissioners (NAIC) commissioned a Solvency Modernisation Initiative (SMI) in June 2008, with its final proposals due by December 2012.

ACTUARIES ARE WELL PLACED TO *CAPITALISE*

Although this article might have burst your bubble if you thought that the AA in ICAAP stood for 'Appointed Actuary', the proposed changes certainly provide actuaries with many opportunities:



APRA is looking for companies to embed capital into all of their decision making processes with capital as the price for risk. This means that there should be greater demand for capital calculations in all aspects of the business.

The Actuarial skill set is a natural one to respond to this.

In addition the new LAGIC risk-based capital formulae are more complicated than their predecessors, particularly for general insurers, and actuarial skills are more likely to be needed just to calculate the capital on a quarterly basis (*see following diagram*).

Historically general insurance Appointed Actuaries have tended to have a smaller statutory role than life insurance Appointed Actuaries, who have often been more embedded in the business. These changes will continue to move the two sides of the profession closer to each other, with the Appointed Actuary continuing to have a review and advice role, but with less of a doing role, as the AA provides advice to the business on capital related decisions.

THREE LEVELS OF RISK MANAGEMENT

Business Operations	Risk and Control Functions	Internal Audit
First line of defence: Risk management by business operations	**Second line of defence:** Independent risk and control compliance	**Third line of defence:** Internal audit
RISK		

With greater emphasis on capital in insurer decision making, there will be greater demand for professionals that can calculate, understand and communicate t he capital drivers.

This will assist companies to make better decisions and actuaries are well placed to capitalise on this opportunity.

CONCLUSION

Carpe Diem! 🅰

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

Made in Japan – from imported ingredients

SAMURAI SUDOKU

Welcome to Japan, the country from which many new puzzle types have emerged in recent years, including the Sudoku. In spite of its name, the Sudoku puzzle was not, in fact, invented by a Japanese person, but by Howard Garns, an American architect who created his first Sudoku (or Number Place, as it was called) in 1979. In 1984, Maki Kaji, founder of the Japanese puzzle publishing firm Nikoli, discovered Garns's Number Place puzzle and brought it to Japan under the name *Suji wa dokushin ni kagiru* (meaning 'the numbers must be single') which was later shortened to Sudoku. Then, in 2004, the Sudoku returned to the Western world when Wayne Gould, a Hong Kong based New Zealander, discovered the puzzle on a trip to Japan and convinced the London *Times* to publish some that he had generated.

Since then, the Sudoku has gained widespread popularity throughout the world and many variants on the puzzle have subsequently emerged. One such variant, sometimes referred to as a Samurai Sudoku or Sudoku Cross, is given below. This puzzle comprises five overlapping Sudoku grids. The standard Sudoku rules apply to each nine x nine grid and where the puzzles overlap, the rows and columns do not extend beyond their usual length. However, the interlocking grids provide the solver with additional clues – and add additional complexity to the puzzle.

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

	1		9	6								1					6		3	7
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3	6						9						7			4			8	2
4	1		2	3	5			9							5	3			4	
	3		7	1			5					9	6	4	7		2			
		2			4	3	7	1				7	5							

PYRAMIDS (AA168 SOLUTION)

Replace the letters with numbers in the pyramid given in AA168 so that each block is equal to the sum of the two numbers beneath it.

Solution: To solve this puzzle, start by setting up three equations in terms of the three unknown bottom boxes and the five known values:

(i) $42 = (17 + a) + (a + b) \rightarrow 25 = 2a + b$

(ii) $36 = (b + c) + (c + 13) \rightarrow 23 = b + 2c$

(iii) $81 = 36 + ((a + b) + (b + c))$ $\rightarrow 45 = a + 2b + c$

Solving these simultaneously gives $a = 2$, $b = 21$, $c = 3$. Given these cells, it is easy to fill in the rest of the pyramid ($d = 19$, $e = 23$, $f = 22$, $g = 14$, $h = 45$, $j = 87$, $k = 168$).

12 correct answers were submitted. The winner of this month's prize, selected randomly from among the correct entries, was **Steve O'Reilly**, who will receive a $50 book voucher. A

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CAP Residential Course

The Commercial Actuarial Practice (CAP) Residential Course is the only Part III exam that requires the compulsory attendance of four full consecutive days of classes. Staying at accommodation on campus during the course was highly recommended and apparently, statistics show that students who stayed on-site had a higher chance of passing the subject. Of course I chose to stay on campus, I mean, a week of buffet breakfasts, no public transport and not having to make the bed in the morning, who would say no? Apart from that, I really didn't know what to expect.

Mei Ong, Nora Lam

Asking previous students proved fruitless as the mix of answers I got just succeeded in confusing me -, some liked it, some didn't, some said it was hard work and some said there was no work. I went in with pretty much no expectations of how the week will turn out. I did go and see *The Hunger Games* movie during the week leading to the course (for those who have seen it, the quote at the end of the article will make sense).

After months of taunting that I was off to camp so that I could learn to speak actuarial, that was exactly what happened on the first day of the course. Contextualisation – if there is one lesson that is a must-have from the week, it would be this. David Service drilled the importance of it into our minds from the get-go. It was about learning to be better actuaries and that speaking 'actuarial' isn't numbers and technical jargon, but about considering issues in the context of our clients and their environment. It was the ability to apply our skills to provide the most valuable advice that made us good actuaries.

Over the next four days, we tackled case studies on traditional and non-traditional practice areas. We were assigned into groups of five or six where we discussed the issues surrounding each case study and then presented back to the others to further dissect the merits of each of the answers. I can only emphasise how effective this learning method is. It encouraged us to think, to listen and to question each others' views, which enabled everyone to get something out of the sessions.

The four days flew. It was a blur of lecture rooms and food. Did I mention we got fed around the clock? Brief tea breaks and lunch provided us with downtime. It was then that we got a chance to get to know the others attending the course a bit better and even pick the minds of our lecturers who were always present. As much as they were ultimately there to educate and train us, I still think that they secretly savoured moments of seeing 40-odd confused faces staring back at them. On behalf of everyone who attended the CAP course, thank you to all the lecturers for their time and the knowledge that was passed onto us during the week.

Looking back, I found that I actually enjoyed myself! Everyone who was a part of the course contributed to this, new friends that were made, the lecturers that were so willing to help and Jen from the Institute, who kept everything running smoothly. We were told that we had it easy, a few years back, we would have been stressing over the full-day exam at the end of the course. Now the most any of us had to worry about was the Sydney traffic heading back into the city. The end was bittersweet. I think it dawned on everyone how much we'd actually learnt during the week when we compared the improvements of our responses at the beginning to those at the end of the course. On the other hand, it was time to say goodbye to the new friends that were made. But hey, that's what catch-up lunch and dinners were made for right?

Now it's back to real life where we apply what we've learnt to our work and in a couple of weeks' time, the dreaded eight-hour CAP exam.

Good luck to everyone sitting it. *May the odds be ever in your favour!*

Anthony Saliba, Hecy Su, David Wilheim

Keith Cheung, Nora Lam, Wen Fei Ho

Peter Suen, Jia Yi Tan, Chung Law, Jane Miao

The quest for the Holy Grail – Part III Exams

Do you have a fear of failure? Would you fear the prospect of standing on a chair and singing in front of a room of actuaries? What about the thought of having tomatoes thrown at you by a sum of accountants?

If you are currently studying Part I, II or IIIs, here is a question for you: What motivates you to study? If study is now a thing of the past, do you remember what it was that motivated you?

Fear of failing? The potential embarrassment of failing? Or monetary gains after qualification? Would you fear more the prospect of failing or standing on a chair and singing in front of a room of actuaries? Would it motivate you to study harder if actuaries who failed their exams were to stand on a stage in Martin Place and have tomatoes thrown at them by accountants?

Such were the questions posed by Bruce Thomson at the April 2012 Young Actuaries Program session. The topic this month was overcoming the final hurdle to achieving Fellowship, and seasoned examiners Bruce Thomson and Gary Musgrave did their best to help students in their journey in fulfilling their actuarial destinies.

As this article goes to print, Semester I Part III exams are over and students are undoubtedly embracing their new-found freedom and partying in hooligan fashion on the weekends. The confident few have no doubt built bonfires in their backyards and tossed in their notes with relish. But the cycle continues; for many, in another five months, the nail biting and madness of studying 20 hours a week will commence yet again. So while this article may not mean much now, do store it somewhere with your notes, and skim it again when semester commences.

YAP Delegates in the Institute boardroom

The way to pass your exams is simple. Well, that is, simple in theory. You have got to know your stuff. But of course, with exam content being so absurdly difficult, a few tips would not go amiss.

1. Find motivation. Take a breather and think about what would motivate you to study and why you are putting yourself through the torture of Part IIIs in the first place. You might want to promise yourself a reward for when you do pass. (Note to reader: this actually works. I promised myself a new phone when I qualified... and the result was immediate).
2. Enlist the help of others to motivate you. Form study groups to keep each other accountable. Have one person present a topic of the course each week. This way, everyone is learning but working half as hard as the learning is shared. Do papers together and mark each other's answers. Think about involving your mates who would otherwise distract you from studying by asking them to be your study mentors. If you work at a larger company, ask the senior actuaries to present on topics you're struggling with and topical issues in the press.
3. Be disciplined. This one is easy; just make sure you isolate yourself physically and electronically when you study. Turn off your phone! And iPad! It's a small price to pay for that euphoric feeling of joy when you see your name on the pass list.
4. Participate in the online discussions. Ask all your niggling questions. With the change in Part III assessment structure, this is now by far the easiest way to score 10 percent of your marks. And you will be learning along the way too.

At this point, let's take a step back. Many of us fall into the die-hard mentality that qualifying is the end game of all these exams. But take a moment to challenge this mentality. Is qualifying really all you're after? Why are there exams in the first place? To encourage learning and understanding. Passing exams is only a measure of this. But the aim beyond

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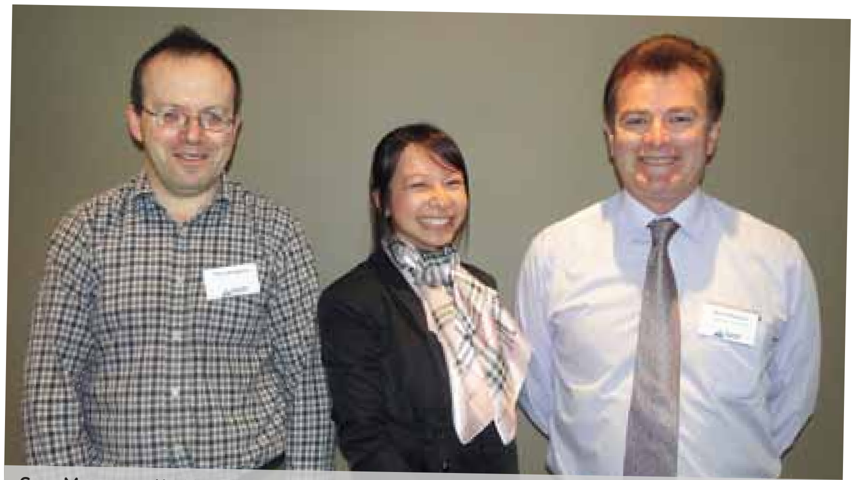
YAP delegates at lunch



Gary Musgrave, Keri Lee, Bruce Thomson

that should be to become a good actuary. So challenge yourself not simply to pass, but to understand.

Now what about when you're in the exam? Assuming you know your stuff, congratulations, you are probably miles ahead of many people in the room and actually have a shot at passing! At this stage however, many fall into traps that botch their chances. The main weaknesses students exhibit include stuffing up obvious calculations, not writing the obvious, and dreaded poor time management.

Gary walked us through an actual exam question and the exam techniques that should be applied along the way. To summarise:

1. When you first open a paper, **skim through** to check the number of marks allocated to each question. This will tell you straight away how long you have to spend on each. Then decide which order you'd like to tackle the questions.
2. Check the number of **marks allocated to each part of a question** to see how many points you should put down. It is not uncommon for students to write a full page for a one mark question, when two lines would have sufficed.
3. Pick out the **important issues** given in the question. All the information is there for a reason eg. the level of experience of your team or if your imaginary company is new. Keep these bits and pieces of information in mind as they will almost certainly be relevant to some part of the question.
4. Read the question. **And again**. And again properly! If it says "describe the reason why…" then you only need to discuss one reason, not ramble on about three.
5. **Leave spaces** in your answers so you can go back and fill in the blanks if you remember something. Oh, and make sure you write legibly! Unfortunately markers can't give marks for pages of scribble they can't read.
6. **Think like the examiner.** This is easy if you have been swapping your past paper attempts with friends and marking each other's work.

I suppose all this sounds terribly elementary. There is probably someone out there who wishes they could egg my car for stating the obvious in such a pompous way. But don't shoot the messenger! These suggestions come from experienced examiners who know what they are talking about, and directly address the most common mistakes made by students.

So please think about these issues and put some (if not all) of the suggestions into practice next semester. For readers who are interested, Bruce and Gary's presentations and a recording of the session can be found in the Young Actuaries Program section on the Actuaries Institute website.

But in the meantime, enjoy yourself at after work drinks and live it up on guilt-free weekends. As only those in the profession can truly appreciate, after a semester of Part III agony, you've well and truly deserved a break.

If you think you will still struggle to find motivation to open those books next semester, let me provide some inspiration. In the wise words of Bruce, you can either study at 80 percent capacity for four semesters (or more!), or 99 percent for one. Here's to being lazy and ripping off that band-aid quickly.

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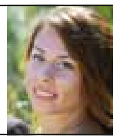

Actuarial modelling

The endearing childhood toy *Barbie*, since its creation in 1959, has appeared in a variety of different costumes mimicking a number of professions. From being an architect to a pilot, an aerobics instructor to even a plastic surgeon, it is evident that she has acquired quite an impressive resume.

Many children will tell you that they want to be a fire fighter, an astronaut or maybe even a fairy when they grow up – but never an actuary.

When you think about it, actuaries, like fire fighters, help to save people from catastrophic events. Furthermore, they undertake many years of rigorous training not unlike the glorified astronaut. And well, if they can make sense of complex statistical theories, they must be something magical.

And yet, there is no actuarial action figure – an oversight. Surely?

Whilst the lack of a superhero may be hard to justify, considering that actuaries are so good at modelling, I believe that this is due to the esoteric nature of the profession.

In March 1995, the actuarial profession gained exposure in two DC Comic issues alongside none other than Batman. Finding insurance work too boring, the conspicuously named 'Actuary' used his mathematical brilliance in assisting with Penguin's evil schemes. Sadly, his analysis and consequent advice were tarnished due to the use of flawed data. This led to a quick dismissal and a short stint as a comic book character for the Actuary.

Well, any publicity is good publicity – right?

Whilst the idea of a villain actuary makes the occupation seem rather daring and exciting, I cannot accept this representation. What actuary uses flawed data? We were warned about the dangers of GIGO (Garbage In, Garbage Out) in our first year at university. I'm sure this never happens outside of the comic world.

From a student's perspective, it still appears that a true representation of the actuarial profession within the wider community is virtually absent.

Have you ever been asked what you do for a living; or if you are a student, what you are studying? The conversations that ensue provide further testament to the construed view of what an actuary is. No, an actuary is not a museum curator, nor do they care for birds. And an actuary is most definitely not an accountant. At this stage it seems almost appealing to define an actuary by what it is not, as if the answer to the problem were some mathematical proof by contradiction.

Upon reflection, perhaps I can't really blame the wider community. I must confess that I'm still really learning all about what an actuary actually is.

What I have learnt is that becoming an actuary is essentially a moral hazard in itself; aspiring students take on the risk of death by numbers with the vision of a lucrative future. I also know that one should not enrol in Actuarial Studies just for fear of wasting their ATAR.

Again, the stereotype of an actuary is wrong.

You can't just love maths to become an actuary; you have to live and breathe it.

There is no denying that surviving an actuarial course will be a challenge. And that hasn't even taken into account the fierce competition that actuarial graduates face after scraping through all of their university exams.

It is evident that actuarial students cannot look to the media or the wider community to provide role models. The actuaries of the world must fill this role. Practicing actuaries have a vested interest in the actuaries of tomorrow and I encourage them to collaborate with student societies such as ASSOC (Actuarial Students' Society at Macquarie University)to help students integrate into the corporate world and to attain the seemingly elusive answer to the question "what is an actuary?"

My experience with ASSOC has helped to clarify the ambiguity of the actuarial profession and provided a support network for aspiring actuaries. Whether it be by learning to work in a team or by giving back to the community, being a part of this society is a perfect way to develop important soft skills. ASSOC's Career Forums allow students to listen and network with real actuaries. Attending these events has been an invaluable experience, allowing me to finally obtain some idea of what it is to be an actuary.

As poet Henry Wadsworth Longfellow once said, "A single conversation across the table with a wise man is better than ten years' mere study of books." A

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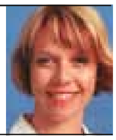


Is the Profession focused on the right things?

I recently attended the International Actuarial Association (IAA) meetings in Los Angeles – the first time I have been to the full set of meetings. We worked hard. There were four and a half days of meetings that each ran for three to four hours (including all Saturday morning)!

I found that the majority of the sessions covered technical topics as well as matters such as how we run actuarial education, supporting emerging actuarial practices in different countries and various administrative matters on how the IAA is run. There was a bit of big-picture stuff. There was a strong focus on the emerging practice in ERM, there was recognition we need a bigger influence on public policy and there was an interesting discussion in the Presidents Forum on the future of the profession. As the ground is shifting under us so rapidly, I think we should be devoting more time and energy in this important international forum thinking and talking about the future of the profession and how actuaries can make a difference.

Actuaries love discussing technical stuff. It's our comfort zone. But does focusing on our comfort zone mean that we are missing the big and important issues? Are we fiddling while Rome burns? More specifically, and to be deliberately provocative:

- Are pension actuaries discussing detailed technical matters whilst DB pension funds in Europe and the US are having serious solvency issues? Whether this is the actuary's fault or not, where will the finger be pointed if the fund becomes insolvent?
- Closer to home is the profession doing anything about potential predatory pricing practices in Australian funeral insurance products? Surely I'm not the only actuary who worries about those adverts I see every time I fly.

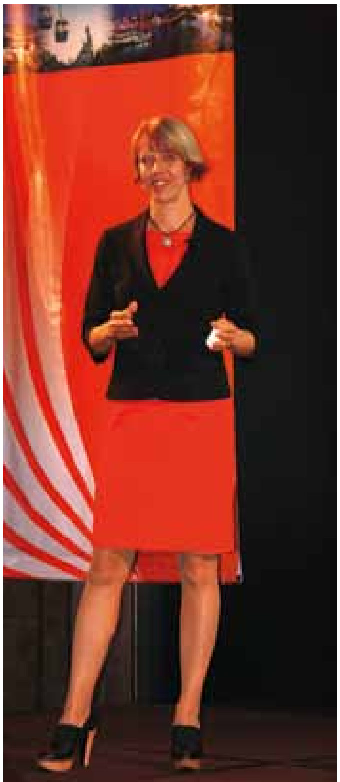
Or is it rather that we are too polite – too worried about critiquing another professional? Too concerned that we will end up in a disciplinary hearing?

SHOULD WE BE COMMENTATING ON SUPER FUND GOVERNANCE?

With that background, I would like to ask you a question. Do you think the Actuaries Institute should be commentating on superannuation governance, in particular the makeup of superannuation fund trustee boards? There is legitimate dispute within the profession about whether we should be in this debate at all.

At first glance, you may think (as I did at first) that this is an area fraught with danger. What possible upside could there be for the actuarial profession to commentate on such a contentious issue, currently front page news, and risk getting our superannuation fund clients offside? And, what expertise do actuaries have with fund governance anyway?

I think the various industry lobby groups would be treading very carefully in this area. I suspect that they're in a somewhat difficult position as some of the funds who are their members will not want to be critiqued by their own industry body.



Joint IACA, IAAHS & PBSS Colloquium, May 2012, Hong Kong

It's clear however that not all super funds feel this way. Recently the Actuaries Institute ran a session where actuaries and superannuation fund CEOs invited their trustee boards to hear APRA's views on their new Prudential Standards in a no-holds-barred discussion. The session was run under Chatham House rules, so I cannot report what was said. However I can say that I was pleasantly surprised by the acknowledgement by senior figures across the industry that fund governance needs improving, some current practices have to go and we need more transparency.

In fact, many people are saying this privately but few are willing to go on the record saying it publicly.

Calling for improvements to fund governance is not new territory. The Cooper Review of superannuation made a raft of recommendations for improvements to fund governance. The Government has adopted some, but by no means all of these recommendations. And, perhaps even the Cooper Review didn't go far enough.

We have formulated some public policy filters that we apply to determine if we should become involved. Applying these to the governance debate:

1. Is it in the public good? – Yes.
2. Do actuaries have expertise? Yes we have a deep understanding of superannuation and risk management, and good governance is a key risk management control.
3. Can we make a difference? Yes because few others are speaking up.
4. Should we? Yes because we are a profession who guard the public good and we can see that the debate is dysfunctional.

Actuaries have significant expertise in this area. They have been working with both DB and DC superannuation funds for many years, advising on a range of issues from investment to administration to enterprise risk management to financial strength assessments. We have an intimate understanding of what makes funds tick and where the risks lie. Good governance is probably one of the most important risk control mechanisms a fund has. I think it's a natural extension of our consulting expertise that we should commentate on governance matters.

I also note that the Institute is a member of the ASX Corporate Governance Council. The Council has developed a set of principles to direct best practice in publicly listed companies, including a requirement that a majority of public company directors be independent. Why should similar standards not apply to superannuation Funds – some of Australia's largest financial entities?

Actuaries have already had a voice in this debate. Former President Barry Rafe had an opinion piece in *The Australian* at the end of last year and we promoted best practice governance standards in our submission to APRA last year. I also note that since being the first profession to enter this debate, the Australian Institute of Company Directors has supported our views as has the Financial Services Council who have moved to require all their members with retail funds to adopt best practice governance standards in their funds.

Good governance is not just a matter of financial performance – it's also a matter of ensuring that members have confidence in the superannuation system. The current situation where some of the country's largest investors have trustees drawn from narrow pools of people who are on competing fund boards and are not independent of the promoters of the fund, or alternatively have trustees who are employees of the bank running the fund, does not fill me with confidence. I am surprised that other professions have not had a stronger voice in this debate.

Our Code of Professional Conduct states "The Institute is a professional body that seeks to enhance the actuarial profession and to serve the public interest". When we look back in ten years' time when the governance landscape for superannuation has been completely transformed, as I am certain it will be, I hope that we will be proud that the profession was one of the first voices in this important debate.

As a profession, we need to lift our gaze above the immediate issues at hand. I think we are getting better at doing this, and I would encourage all of us in the profession to be bold and have opinions on the issues that matter.

OUT & ABOUT

A brush with celebrity – catching up with Todd Sampson at the Financial Services Forum in Melbourne in April

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