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THE MAGAZINE OF THE ACTUARIES INSTITUTE

Actuaries

DIGITAL



COLUMN

Actuaries as Entrepreneurs – Have you got what it takes?

EVENT REPORT

Lending an Actuarial Hand

REPORT

Citius, Altius, Fortius: How can actuaries reinvent themselves?

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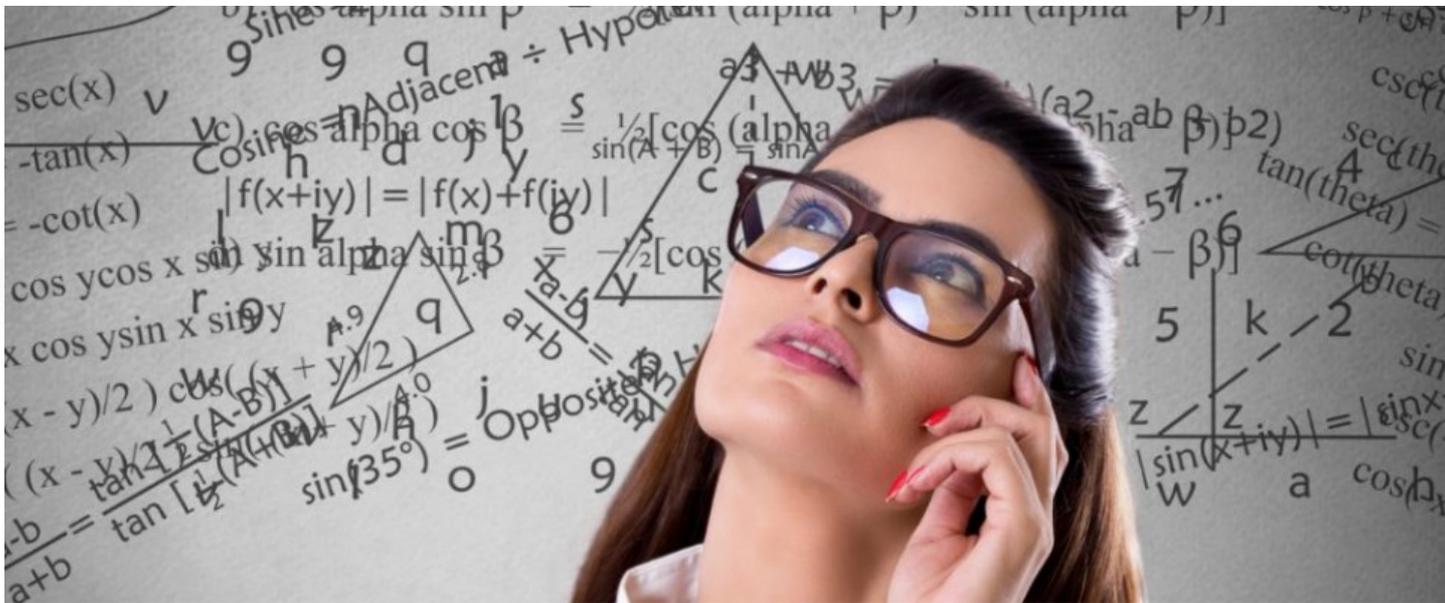
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IMPORTANT INFORMATION FOR CONTRIBUTORS

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

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9 things I learned after becoming an actuary

By Kirsten Flynn

Actuaries Digital Editor Kirsten Flynn reflects on nine things she's discovered since starting her actuarial career.

I was recently asked to give a presentation to high school students on actuarial career opportunities. To prepare for this, I thought about what I knew about actuaries then and what I know now (eight or so years later).

Here are nine things I've discovered since starting my actuarial career:

1. There is nothing more irritating than finding a hard-coded number where it doesn't belong

Just thinking about hard-coded numbers makes my blood boil! Who hasn't spent hours tracing back through twenty or more spreadsheets to work out how a number was calculated only to find a part of the calculation was hard-coded with no explanation?



2. Actuaries do much more than insurance

I've been guilty of spreading this misnomer as I used to explain what an Actuary is by giving examples of the work I did in life insurance. When speaking to students I still use examples but extend these to include non-traditional fields like banking, environment, health and investment.

3. People don't understand what an Actuary does (no matter how many times you explain it)

If you asked 10 different people what an Actuary does, you'd probably get 10 different answers (one of which would be "an actor")! To be fair, how can you expect someone else to explain what you do if you can't really explain it yourself?

4. Words are just as (if not) more important than numbers

There is a big misperception that actuaries are simply number crunchers. But the truth is, if you can't use words to explain why the numbers matter, they won't matter. In my opinion, communication skills are just as important as technical skills for actuaries!

5. Actuaries are always wrong (and openly admit it)

Actuaries are commonly required to make assumptions about the future. But no-one can really know the future with certainty.

The only thing that seems certain is that our assumptions will be wrong. And Actuaries make sure you know this! How often have you heard an Actuary use phrases like “past performance is not a reliable indicator of future performance” or “deviations are normal and are to be expected”?

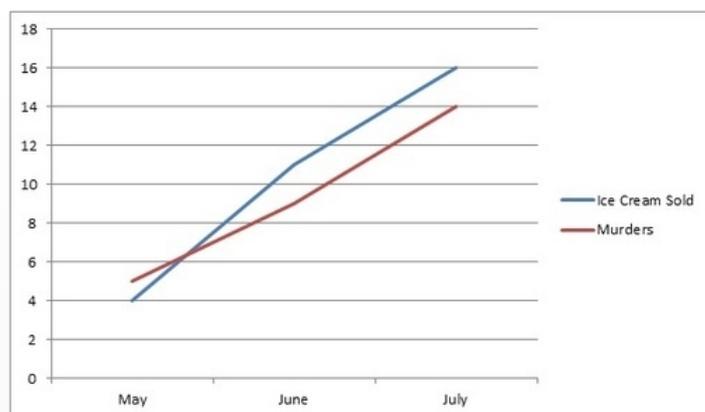
6. You never stop learning (though you may stop studying)

Many recently qualified Actuaries will tell you they have no plans to study ever again (the pain of sitting exams is too fresh). But as the world continues to change and our personal and professional lives develop, we will continue to learn. And you may even enjoy it! Last year I took Spanish classes and learnt to Salsa (I had to do something with all the free time I acquired post qualification).

7. Correlation does not imply causation

Does ice cream consumption lead to murder? Probably not. The two might be correlated (see this [Buzzfeed article](#)) but this does not mean one causes the other.

The lesson here? You always have to apply judgement when you're analysing data and results.



8. Being an Actuary doesn't make you good at poker

I've observed a high correlation between being an Actuary and being good at poker. But this does not mean being an Actuary makes you good at poker. I learnt this the hard way. This is a perfect example of correlation vs. causation.

9. I love being an Actuary

And I'm not the only one - 'Actuary' was rated the number 1 job in [a survey](#) from a US job-search site in 2015!



Citius, Altius, Fortius: How can actuaries reinvent themselves?

By Marc Mer, Kaise Stephan and Magnolia Aspiras

With the Rio Olympics around the corner, the Olympic motto “Citius, Altius, Fortius” (Faster, Higher, Stronger) offers a topical yet trenchant inspiration as to how actuaries should be critically examining their roles, careers, and potential. Marc Mer, Magnolia Aspiras, and Kaise Stephan consider this, especially in light of [APRA's consultation paper on the role of Appointed Actuaries](#).

1. Where is the Actuarial Profession now?

Our current reach and attributes

Let’s take stock of where we currently are as a profession: predominantly contributing in the traditional fields of life insurance, general insurance, superannuation, health insurance and investments, with a growing presence in banking, private equity etc; as well as predictive analytics and risk management.

The Four Faces of the Actuary

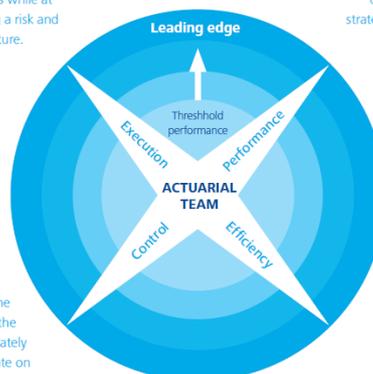
Let us introduce you to a framework to analyse the role of actuaries within traditional fields. The Four Faces of the Actuary framework hypothesises that a senior actuary deals with four elements in their role – Steward, Operator, Catalyst and Strategist, as illustrated below:

Catalyst

Catalyse behaviours across the organisation to execute strategic and business objectives while at the same time creating a risk and business intelligent culture.

Strategist

Provide actuarial leadership in determining strategic business direction, and supporting other strategic activities vital to the future performance of the company.



Steward

Protect and preserve the critical frameworks of the organisation and accurately report and communicate on financial position and condition to internal and external stakeholders.

Operator

Balance capabilities, talent, costs, and service levels to fulfill the actuarial core responsibilities efficiently.

The most effective Chief Actuaries and actuarial function we have seen are well balanced across these four areas, with skews depending on their personal preferences and the organisation they work in.

2. What trends are impacting us, our industries, and the environment in which we work?

Current trends and disruptors

The world we live in is constantly evolving. There are trends and disruptors emerging, affecting the environment in which actuaries work. These result in either a challenge to overcome or a potential opportunity to seize.

We can already see changes in (1) **Technology** such as smart technologies affecting underwriting eg contact lenses which can detect glucose levels, telematics, smart pills (ingestible sensors that can detect what is going on in your body); (2) **Social impact** such as antibiotic resistant viruses, actuarially managing welfare

programs, longevity and income in retirement (Cambridge gerontologist Aubrey de Grey claims the first person to live to age 1000 is already alive today); (3) **Customer** such as customer-centricity (shift from product focus to customer focus) and connected societies facilitating customer relationships; (4) **External environment** such as cybercrime, tech giants disrupting traditional insurers, offshoring components of actuarial services; and (5) **Sharing economy** such as enabling P2P exchanges through the use of technology eg Uber, Facebook, Alibaba, Airbnb.

Something interesting is happening; business models are changing. How can we change with them?

Did you know?^[1]

The World Economic Forum has estimated that 65% of today's children entering primary school will work in occupations that do not currently exist.

Will a robot take your job within the next 20 years? Estimates suggest there's a 15-20% chance for actuaries

Our profession is not stagnant, and this has started to be recognised on a global level. If we do not adapt to the world changing around us, we will eventually lose our grip on both our core and non-core roles. Conversely, if we do adapt, then our reach grows. And the areas and industries over which we have an influence will grow commensurately.

3. Where do we want the Actuarial Profession to be?

Our future vision

We think that there are two ways in which the profession can progress: Redefine and improve what we currently do, and/or break into new fields.

1. Redefine ourselves within our traditional roles

If we become more efficient in our typically bread and butter work, we can free up more time to share insights and think strategically, adding value from experience that can't be captured with automation.

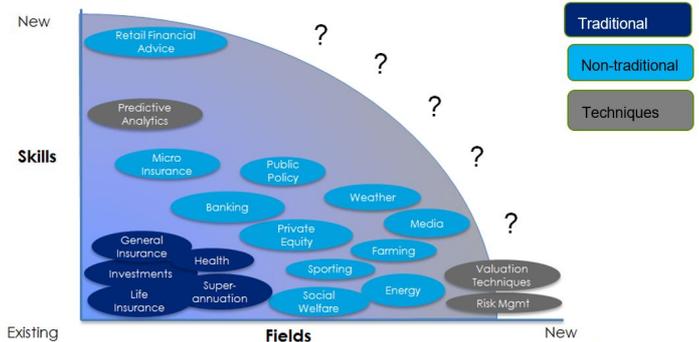
This vision is supported by recent Deloitte Chief Actuary research including a global survey of over 100 Chief Actuaries and next-in-lines, asking them how much time they currently spend on each of the Four Faces versus how much time they would ideally want to spend.

We found that these actuaries are spending more time on Steward and Operator roles, and aspire to contribute more as a Catalyst or a Strategist.



2. Expand our roles or apply our skills to new areas

There is an opportunity for us to break into new areas, either by applying our current skills (e.g. valuation techniques, risk management) in completely new business fields or by extending our roles in our current fields by learning new skills (e.g. predictive analytics).



A vanguard of actuaries are already challenging preconceptions and working in non-traditional roles. Here are some examples:

Sports

Here is a world awash with statistics, which naturally attracts the actuarially-minded. John Dewan, an American actuary, created a sports statistics company called STATS and sold it to Fox Sports for \$45m. Actuaries also have the potential to be involved in the valuation of football (or other sports) players when being bought and sold between teams (often for tens of millions of euros).

Adam Wechsler, an Australian actuary, says that actuarial techniques are now used in sports betting companies to help price betting games based on the odds of winning, as well as to profile their customers to help understand the types of bets they would likely make.

Private Equity

Private equity firms have engaged actuaries, such as Australian actuary Stephen Lynch, to assess the risks of companies asking for finance from the private equity world. While risk-assessment is natural for the actuary, the risks involved in private equity are different, e.g. uncertainty of sales, management, growth prospects. So an actuary going into this field will need to build knowledge to assess the risks appropriately.

Predictive Analytics

Ian Duncan, an American actuary, automated the manual estimates that doctors make on the future costs of high-cost claimants. Since then, he's been involved with statisticians who understand the modelling but not the business context, and has become the business savvy bridge between his clients and the Predictive Analytics model.

Both the Canadian Actuarial Society and the US Society of Actuaries have recognised the potential in this largely untapped field and have started investing Predictive Analytics initiatives. The Australian Institute has also started a [Data Analytics Working Group](#).

Microinsurance

Actuaries, following the lead of Denis Garand (a Canadian actuary), could do more to contribute to the social good by facilitating greater insurance coverage in countries where the population is under-insured. The challenges in this field are that there is often little or no appropriate experience data, and that

the products use traditionally unusual sales and distribution channels. But to give you an idea of the opportunity, recently in Ghana, within 6 months, 1 million people bought cover through their mobile phones. It is the fundamentals of insurance (i.e. the law of large numbers) that are important when faced with these situations.

4. How are we going to get there?

Pathway to success

1. How do we redefine ourselves within our traditional roles?

The Chief Actuaries in our survey^[2] told us that they want to be able to drive their actuarial activities rather than their activities driving them. They also want to stay alert to trends and disruptors affecting the industry in which they work.

One thing is clear from our research, is that performing the Steward and Operator role really well gives you the right to play in the Catalyst and Strategist roles. It is thus important to see the Steward and Operator roles as something that, if done efficiently, will unlock insights to help influence the organisation's direction and strategy.

This requires that we take control of our work as **Operators** and **Stewards**:

As **Operators** we can look to (1) increase general process efficiencies, (2) make our actuarial processes more effective, (3) efficiently use the right people for the job. As **Stewards** we should aim to (1) improve our governance and controls, (2) expand the breadth of our market and industry knowledge.

We also need to start influencing change within organisations, as **Strategists** and **Catalysts**, and thinking more about how to use freed up time in a business context way to influence strategy and direction and inform the organisation's strategic decision makers. We can achieve this by building on and more effectively advertising our education and experience, and increasing our exposure in the business environment.

2. How do we break into new fields?

Some suggestions we have garnered from pioneering non-traditional actuaries:

- Leveraging our networks may be the best way to find these new opportunities
- There are many countries with few or no actuaries and considerable under-insurance that would benefit from our insights and protection. For example, Nigeria has a population of 160 million yet only 1% are insured.
- We can be the bridge between technicians/statisticians and the business decision makers in solving their problems. Actuaries are trained in evaluating and managing risks and this sets us apart from other professionals.
- Non-traditional areas and soft skills need to be included in our actuarial education early on to develop these skills. Examples include setting assessments and exam questions from a wider mix of fields and non-traditional distribution channels, emphasising soft skills as early as Part I exams and in the Commercial Actuarial Practice course.
- We need to be risk takers, even if our profession has traditionally been risk-averse! Start creating initiatives around non-traditional fields and liaise with universities to encourage a wider breadth in their training culture.

5. Concluding remarks

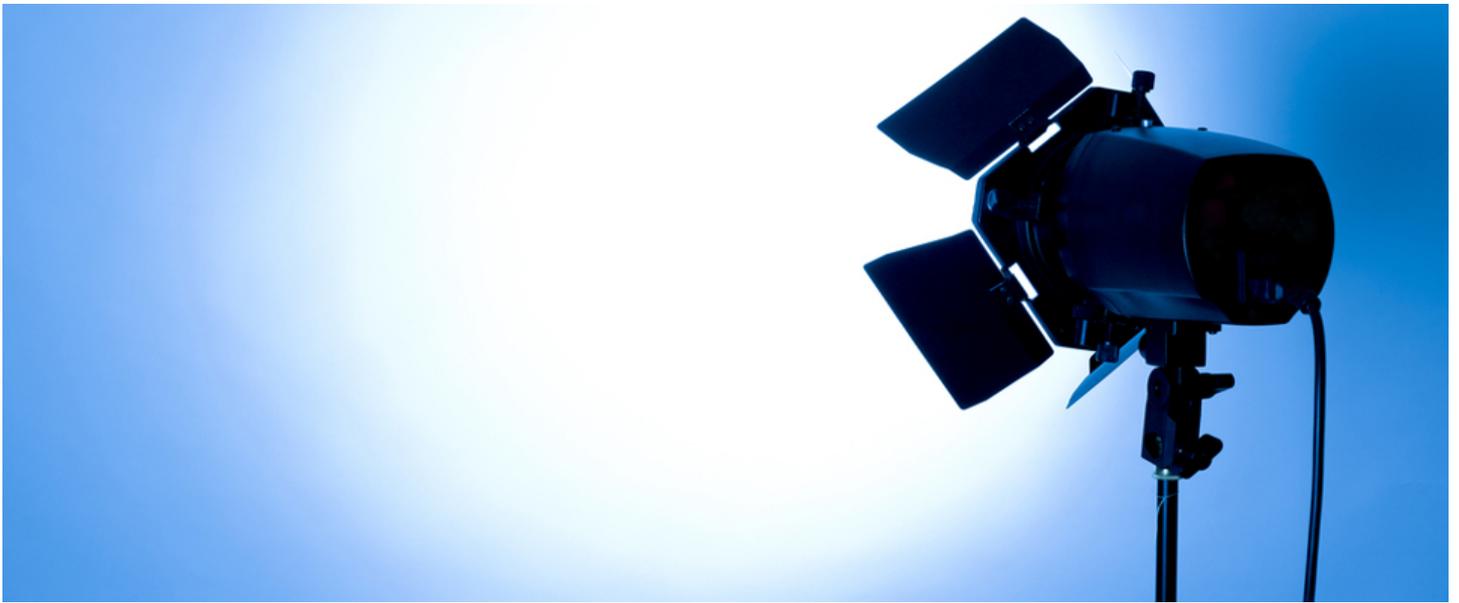
Why do we need to reinvent ourselves?

In summary, the world is changing rapidly around us, providing both challenges and opportunities, and we need to keep up to date in order to remain relevant and take advantage of these opportunities, in traditional areas of contribution and new areas which have not been fully tapped.

With the 2016 Olympics approaching, we hope that our profession can be inspired by Bob Beamon's historic achievement; let's take a great leap forward and push the boundaries of what we can do.

View the [Presentation Slides](#) and listen to the [Audio](#) from this presentation at the 2016 Financial Services Forum (FSF).

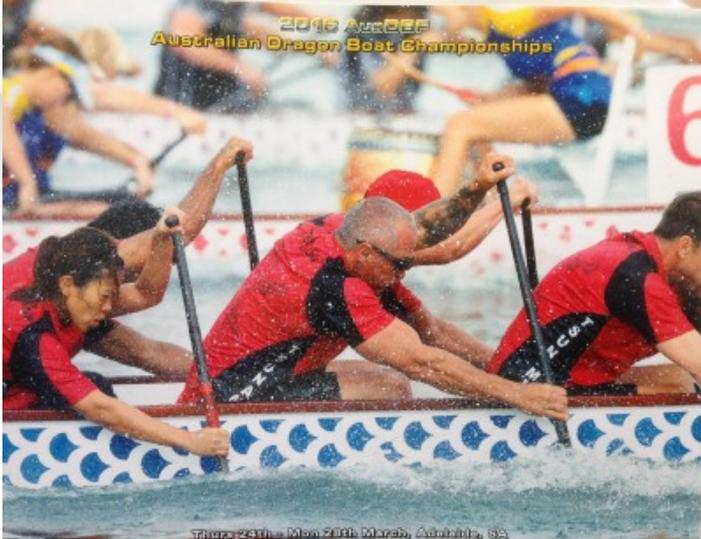
^[1] World Economic Forum, and Various estimates



Under the Spotlight: Jia Yi Tan

By Jia Yi Tan

Jia Yi Tan is the Senior Manager, Pricing Master Trust, and currently seconded to the product and account management area of Industry Funds at CommInsure. She has always dreamt of becoming an actuary since she was fifteen and is passionate about making a positive difference to organisations, the community, life insurance industry and the world!



Jia competing at the Australian Dragon Boat Championships in South Australia this year.

My interesting/quirky hobbies...Competitive dragon boat racing. I compete at state, national and recently international level.

My favourite energetic pursuit...Gymnastic training which involves pull-ups, push-ups, rings and bars. Love the intensity and the challenge to my physical limit.

The last book I read (and when)...The Witch of Portobello by Paulo Coelho.

My favourite artist/album/film...Queen, inspired by a musical I watched recently, 'We will rock you'.

The person I'd most like to cook for...I'm a fan of eating rather than cooking.

I'm most passionate about...sharing the goodness of actuaries and promoting equality (gender, racial, age).

What gets my goat...rude and dishonest people.

I'd like to be brave enough to...bungee jump.

Not many people know this but I...can't pronounce "th". So, I avoid some words like "team" = "theme", "thor" = "thaw" in conversations and presentations. Unfortunately, I couldn't avoid the word "three"="tree" due to the nature of my work.

Four words that sum me up...passionate, family, kindness and ambitious.

If I hadn't become an actuary, I would be... there has never been a plan B. I have always wanted to be an actuary since I was fifteen.

Why and how I became an actuary... It started from a conversation I had with my dad when I was fifteen. When I asked my dad "I'm really good at Maths. What can I do with it?", his response was "Actuary" which probably still is (and was) not a common profession in Malaysia with only a few qualified actuaries. I was immediately drawn to the unique combination of using my strength and doing something uncommon.

Where I studied to become an actuary and qualifications obtained... UNSW and Institute of Actuaries Australia. FIAA.

My work history...Close to 8 years of work experience in the life insurance industry. Started at APRA as a graduate in the Actuarial Services division, followed by MLC as a Consultant Actuary in the Valuation/Finance division and currently as a Senior Manager Pricing (group insurance) in the Life Pricing & Analytics division at CommInsure.

What I find most interesting about my current role... Managing and influencing a diverse set of internal and external

stakeholders. When the perfect balance is struck and tension is resolved, it gives me a great satisfaction to see a better outcome for all parties.

My role's greatest challenges...Time!

Who has been the biggest influence on my career (and why)... I am very fortunate to have worked with incredible and visionary people leaders, sponsors and mentors throughout my career. I have picked up different skills from all my influence. But my dad and husband have the biggest influence of all. They are my sounding board for advice and I am living by my dad's motto every day "Do your best and leave the rest to God".

My proudest career achievement to date is ... made positive differences (small or big) and left a better legacy in every role I have been in. A special personal achievement of mine is being the top 10 finalist out of 200 women applicants in Australia for the Chief Executive Women – Learning to Lead scholarship.

10 years from now, I will be ... hopefully healthy (physical and mind) and as a General Manager of a life insurance business with continued strong support from my husband and potentially a bigger family!

When I retire, my legacy will be... to have inspired and paved career paths for young people, women and people from different cultural backgrounds.

Why I'm proud to be an actuary... we are problem solvers and not just any problems but complex problems!

The most valuable skill an actuary can possess is ... the ability to tell stories with numbers and influence decision making.

If I were President of the Institute, I would... extend the President's term to allow more time to better execute longer term strategic initiatives.

My best advice for younger actuaries... be humble (listen and learn) and be inquisitive.

If I could travel back in time I would... change my fashion style when I was a teenager. I was wearing baggy clothes with terrible haircuts and bushy eye brows.

If I won the lottery, I would... spend on three things (1) family and myself (2) for a good cause and (3) reinvest, reinvest, reinvest!



Jia Yi Tan is the Senior Manager Pricing at CommInsure. At the Actuaries Institute, she is part of three committees this year; President of the Young Actuaries Program Sydney, a committee member of the Life Insurance Wealth Management Practice Committee and leads the CPD sub-committee, and a committee member of the Financial Services Forum 2016 Organising Committee.

Contact Jia: jia.tan@cba.com.au



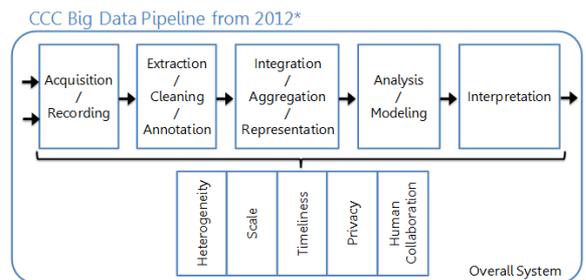
DAT203x: Data Science and Machine Learning

By Kriti Khullar

How long has the concept of Data Science been around and what are the best tools available for mining 'big data'? A new MOOC coordinated by the Actuaries Institute's [Data Analytics Working Group](#) presented the latest knowledge in this exciting field. Course participant *Kriti Khullar AIAA, reports.*

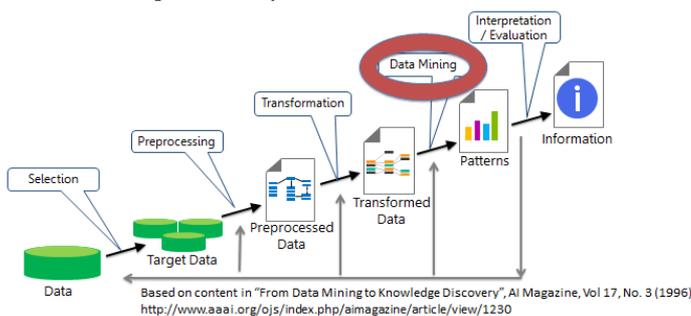
During my participation in the Data Science and Machine Learning MOOC (Massive Open Online Course) I discovered that as early as 1996 the concept of data science and the buzzword 'big data', was presented via the KDD (Knowledge Discovery in Databases) process (see below). I was surprised to see that Data Mining was present back then!

More recently, the CCC Big Data Pipeline came out in 2012:



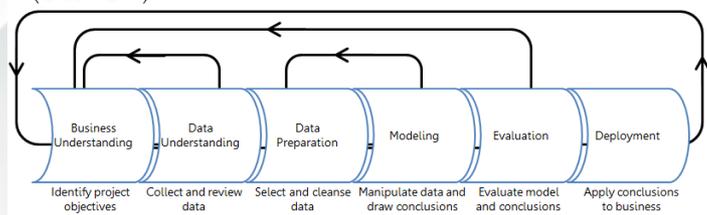
*From the Computing Community Consortium Big Data Whitepaper: <http://www.cra.org/ccc/files/docs/init/bigdatawhitepaper.pdf>

KDD (Knowledge Discovery in Databases) Process



Then in 2000 emerged the CRISP -DM (Cross Industry Standard Process for Data Mining) Process:

Cross Industry Standard Process for Data Mining (CRISP-DM)

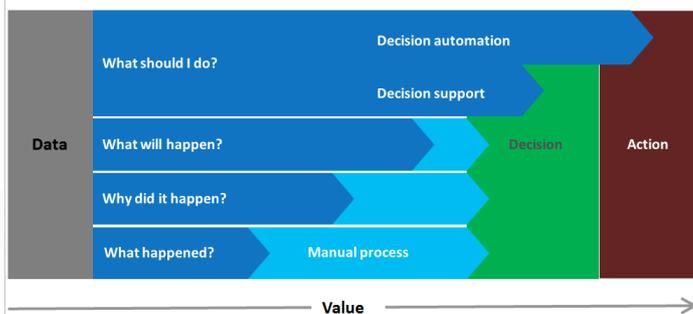


Our lecturers Cynthia Rudin (Associate Professor of Statistics at MIT) and Steve Elston (Co-Founder & Principle Consultant of Quantia Analytics) thought that these processes were similar, but written in different contexts and with different purposes. They inherently capture the simple statement:

Data is selected (based on business needs and target audience), it is then cleansed and prepared, then subsequently transformed for modelling and/or data mining purposes, before it is meaningfully interpreted through statistical means and applied for more informed decision making and subsequently, actionable results are formulated, creating create value add information.

This is essentially what Data Science is about. Of course, it is an iterative process with data cleansing and transformation being accountable for 99% of the work but this is what assists in meaningful results and better-informed decision making. This can also be observed in the below graphic.

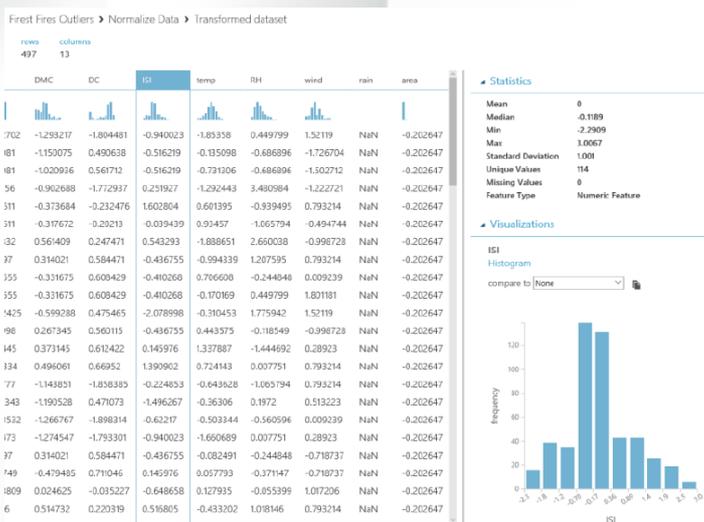
Data -> decisions -> actions



Amanda Aitken, member of the Data Analytics Working Group, participated and answered the many questions that were raised in the study groups. Questions were raised by curious cats around what is the best tool out there for visualisation? Is it the Microsoft Azure Studio or is it Tableau or is it QlikView? (I wonder what you use as a reader - consider sharing as a comment on this article below!) Discussions arose around the limitations of each of these tools. It was also great that when one student shared a problem, it wasn't just Amanda who assisted in its understanding and resolution but also other course participants as well.

Having the Microsoft Azure Learning Studio with its own Data Library was also quite useful in providing participants with a hands-on experience alongside the theoretical learning of scaling, normalising the data, truncating the data and the use of the metadata editor (and a lot of more of course). It was useful navigating through the variables in these datasets and the distribution curves associated with these variables as can be observed in the examples below.

Example 1: Distribution of variables in Microsoft Azure





Actuary Entrepreneur - Kevin Lin, FSF2016

By Kevin Lin

Kevin Lin presented the paper 'Actuary Entrepreneur' at the 2016 Financial Services Forum. His experience in developing a child care business was used as a case study and this article highlights a couple of situations where actuarial techniques were key in making decisions.

I was delighted to present my paper, Actuary Entrepreneur, at the 2016 Financial Services Forum (Melbourne). The paper encourages actuaries to apply their actuarial skills beyond the confines of their careers. It discussed how actuarial skills can be a competitive advantage in setting up a business and how the entrepreneurial experience provides accelerated opportunities for actuaries to develop beyond being technical experts to being more practical, innovative and well-rounded professionals.

The Actuarial Advantage in Finding the Optimum Location

Developing a child care centre was capital intensive and therefore one of the first challenges was to find the optimum location to maximise the chance of success. Actuarial techniques were decisive in helping to achieve this.

A financial model was built using data gathered from various sources. The model showed that the centre needed to have more than 56 places to have the scale to meet our profitability criteria and it also revealed the suburbs where child care fees provided the greatest return compared to property prices.

Further demographic studies were conducted in these suburbs. In addition to data from the Australian Bureau of Statistics, the local councils were contacted to obtain the details of residential development applications and approvals. This data was used to project the extra number of households for a specific area and the future demand for child care places. The projected demand was compared to the existing child care services in the area to work out whether a new child care centre was needed.

By now we had narrowed the search area down to specific areas of a few selected suburbs. After seven months of searching, we found and purchased a site we considered ideal. It was situated across the road from a primary school, and about 300 metres down the road from a major shopping centre and transportation hub.



Decision to Continue After Catastrophe: Applying the Control Cycle

After we secured the property, we engaged an architect to design the centre, got the necessary development approvals and engaged our first builder. Unfortunately, more than two years later, the builder stopped working on our partially completed and defective building and they subsequently went into liquidation. Reeling from this catastrophe, we decided to take time off to recapitalise and reassess the situation at a later date.

When we returned to the project, we had several offers from other child care operators to buy the property and we used the Control Cycle to reassess the feasibility of the project. We updated the financial model and the results showed that the project was still very feasible because interest rates had halved, child care fees had doubled, and the population growth increased as we projected. Although there were now other centres being built nearby, we had come in first and secured the best site in the area.

This was a pivotal moment and using actuarial techniques helped us to assess the situation rationally rather than emotionally. And so we decided to continue with the project rather than sell to one of the tempting offers.

How are we doing today?

We subsequently engaged another builder and, using the numerous lessons we learnt, we completed the project the second time round with no major issues. Overall, it was an eight year struggle but we finally made it in the end.

The child care business has been in operation for over a year, the cash flow is positive and the business fundamentals are sound. However, there continues to be challenges, setbacks, learning experiences, and adjusting our approaches to make the business work.

Upon reflection, I learnt that this was the core of the entrepreneurial experience and the actuarial approach played a decisive role in overcoming a number of these challenges.

The full paper can be found [here](#).

The presentation can be found [here](#).

A video of my presentation can be found [here](#).

The child care centre's website can be found [here](#).





Fiscal forecasting and climate change

By Stephanie Wong

Stephanie Wong reviews the aims of the Actuaries Institute's Climate Change Working Group formed in January this year.

The Climate Change Working Group (CCWG) has the goal of supporting the Institute's [Public Policy position on climate change](#).

Our aim is to promote the application of actuarial skills, including quantification of risk, cost-benefit analysis, and long term financial forecasting, to climate change-related issues.

What are we doing?



Financial Services Forum

Sharanjit Paddam (Convener of CCWG) and Kate Mackenzie (Manager, Investment & Governance at The Climate Institute) presented on "Climate Risk and Australia's Financial System". They explained the physical, transition and liability risks associated with climate change, how these risks can flow through the economy, why financial institutions are already at risk, and what is being done to improve our capabilities in climate risk management.

[Presentation](#) - [Audio](#)

Sharanjit Paddam also presented at a plenary session on "Climate Risk and Societal Change". He addressed the key questions of "What will we do?", "Where will we live?", "What will

we want to protect?", and "How will we live?" in relation to climate change. He discussed the systemic impact of climate change on the economy and how financial institutions in particular will be affected, as well as opportunities that exist in alternative energy assets, adaptation and infrastructure. [Presentation](#) - [Audio](#) - [Video](#)

Impact of climate change on financial institutions

The CCWG are currently writing a paper on the impact of climate change on financial institutions for the 2016 General Insurance Seminar. The paper will explore how banks, life, general and health insurers, superannuation funds and other investors can be exposed to climate change, and how they can apply the enterprise risk management framework to better manage these risks.

Insights session

The CCWG will present at an Insights session on 29 Sep 2016. Stay tuned for more details!

Upcoming conferences

There are a number of upcoming conferences for anyone who is interested in attending or presenting papers.

- [NCCARF Climate Adaption conference in Adelaide \(5-7 Jul 2016\)](#)
- [20th Asian Actuarial Conference \(9-12 Nov 2016\)](#)
- [Actuaries' Institute General Insurance Seminar \(13-15 Nov 2016\)](#)
- [Bank of England Conference on Central Banking, Climate Change and Environmental Sustainability \(14-15 Nov 2016\)](#)

Want to find out more about climate change?

Here are some articles and papers about climate change impacts for the interested reader.

- [There Goes the Neighbourhood \(The Climate Institute\)](#)
- [Market-Based Mechanisms for Climate Change Adaptation \(National Climate Change Adaptation Research Facility\)](#)
- [Can Actuaries Really Afford to Ignore Climate Change? \(2014 General Insurance Seminar\)](#)

We are also building up a climate change knowledge bank to assist actuaries in finding information more easily. Watch this space!

Our members:

- Sharanjit Paddam (convener)
- Elayne Grace
- Stephanie Wong (secretary)
- Alison Drill
- Alissa Holz
- Avanti Patki
- Cathy Wu
- Ian Laughlin
- Jeff Humphreys
- Jeremy Waite
- John McLenaghan
- Jon Harwood
- Julie Sims
- Martin Hickling
- Natalie Warren
- Rade Musulin
- Richard Yee
- Ruth Lisha
- Sarosh Batliwalla
- Tim Andrews
- Wayne Kenafacke
- Yan Zhao
- Yifan Fu

Want to contribute?

We welcome members who actively contribute to the working group. If you are interested in contributing to the CCWG, please contact [Sharanjit Paddam](#).



Actuaries as Entrepreneurs – Have you got what it takes?

By Niki Appleton

Are you radical?
Visionary? A risk-taker?
Then the common perception is you have what it takes to be an entrepreneur. But is there more in the make-up of an entrepreneur than just these characteristics, and can they be learnt or must you be born with them?

Googling entrepreneurial skills generates a relatively consistent list. According to Forbes, The New York Times, The Sydney Morning Herald and www.entrepreneur.com (yes there is even a website for budding entrepreneurs) the list includes: passion, vision, tenacity, willingness to take risks/not afraid to fail, self-belief, can see the big-picture, skilled analytical problem solvers, willingness to work hard, determined, flexible/adaptable and effective with people. We can see these traits in some well-known known entrepreneurs we frequently read about.

Mark Zuckerberg (with fellow co-founders) launched Facebook whilst they were still at Harvard. He is renowned for having the passion and determination to bring his innovative social media idea to fruition. Steve Jobs' tenacity and absolute focus and dedication were key to his success at Apple. Whilst Steve was not particularly well known for being effective with people, many other entrepreneurs credit communication, networking and collaboration as being key to their success. Oprah Winfrey epitomised these skills, creating not only a very successful talk-show program but also founding the thriving Harpo Studios.

Closer to home, Aussie Janine Allis, founder of Boost Juice, was passionate about bringing fresh juice to the broader market and credits her success partially from networking and collaborating with others, learning what she could from other people. Dick Smith combined his passion for Australian owned foods with his determination and ability to think differently to set up a number of businesses including Dick Smith Electronics, Australian Geographic, Dick Smith Foods and film production company Smith&Nasht.

A number of actuaries have been entrepreneurial, identifying an opportunity, envisaging a way to take advantage of that opportunity and then having the self-belief and determination to take a risk and set up a company to target the opportunity.

Some examples include - [John Dewan](#) in Chicago who set up a number of companies that captured and summarised real-time sports statistic data. [Mike Miele](#) saw the opportunity to provide consulting services to pharmaceutical companies to help them better meet the needs of Managed Care Organizations. He founded Capitated Disease Management Services in 1995. In Australia, in the early 90s, [Mark Schneider](#) co-founded Classic Solutions that developed the MoSes financial platform used by more than 300 companies in the insurance industry. More recently in 2002, [Adam Driussi](#) co-founded Quantum, a company specialising in data analytics.

Can these skills be taught?

Can entrepreneurship be taught or are you born with these skills? Over the last year, whilst looking for suitable interns to

work for our company, I was surprised to find there are in fact a number of degrees and post graduate courses at some prominent Australian Universities offering courses in entrepreneurship. Sydney University offers a degree in "Strategy, Innovation and Entrepreneurship" and Melbourne University offers a Masters of Entrepreneurship. Tertiary educators obviously recognise the growing demand for these skills and feel that they can be taught.

Revisiting the list of entrepreneurial skills, it is evident some actuarial skills are transferable. Analytical thinking is a fundamental facet of actuarial training – being able to consider a problem from different perspectives in order to solve it. We are taught to consider the big picture and to convert complex concepts into simple messages. The attributes of being hard working and able to focus for prolonged periods should also resonate with actuaries; any actuary who has laboured through the actuarial exams, often whilst working, (and some of us also had babies), can attest to having the ability to focus and work hard!!

Which does leave a number of other soft skills – visionary, adaptability, communicating, networking, passionate, risk-taker/ not afraid to fail. Some of these may not come naturally to actuaries and our training may in fact hinder the development of these skills. For example, being a risk-taker. As actuaries, we are taught to be risk averse, to carefully consider all the implications and have sound reasoning to back our recommendations. So, this skill might be a challenge for some of us. Mentors or bosses can help actuaries to develop these soft skills. People around us with strong soft skills can provide inspiration. Many organisations (including employers) offer courses and training for these skills. The Actuaries Institute Leadership and Career Development Committee is charged with helping actuaries develop these skills, running initiatives such as the [mentoring program](#) and [leadership forums](#). Perhaps the first step is to recognise your own areas of weakness - with the [Actuaries Institute's Capability Framework Assessment Tool](#) being a good place to start.

The opportunity

Entrepreneurs are often credited with being able to identify an opportunity and then quickly evaluate the risk and reward of pursuing that opportunity. The current environment we actuaries find ourselves in is ripe with opportunity. In the general insurance industry there are new emerging technologies - driverless cars; new risks – cyber insurance; new considerations in insurance arrangements – peer-to-peer insurance. The PHI industry has a particularly challenging environment with asymmetry of information, overwhelming product complexity, and disengaged customers due to substantial premium increases. In financial services, technological and regulatory changes are disrupting established business models and creating opportunities for those who truly understand value to guide their employers and clients through this change. There is also the whole data analytics, big data space where we seem to be just at the tip of the iceberg. It is an environment where we need people who can be innovative, think differently and not be afraid to try something new.

I would suggest that while developing and running your own business will surely test and hone your entrepreneurial skills, these can also be developed within your current organisation by bringing a new idea to fruition, being innovative in your thinking, using your passion to influence your colleagues to consider different solutions. For these types of people to be effective it does require the organisation to be flexible and have a culture where it is OK to try something new and fail. In a recent [Actuaries Digital interview](#), Hollard CEO Richard Enthoven talks

about how "allowing people to fail" has been key to the company's success.

So the challenge is, can more actuaries take the analytical skills, big-picture thinking and hard work ethic our training equips us with, and combine these with passion, vision, adaptability, having a go and not being afraid to fail, to become the entrepreneurs of the future in this emerging world of opportunity? Do you have what it takes?



2016 Actuary of the Year - nominations open

By Katrina McFadyen

Recognising and celebrating the achievements and contributions of one of our Members is an ideal opportunity to promote the value which actuaries can add.

Nominations are now invited for the award of 2016 Actuary of the year.

Criteria

The award is presented to an individual who:

- has brought credit to the profession and has the capacity to promote the profession under the banner of Actuary of the Year;
- has made a key contribution to business, the community, government or the profession.

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

It is expected that a particular recent contribution can be identified in making this award, although an ongoing contribution may be considered relevant. While the individual needs to promote the profession, their contribution may not be specifically actuarial but, being a member of the actuarial profession, would be expected to have been a contributing factor to their contribution.

2015 Actuary of the Year

Alan Greenfield, Practice Leader - Government & Analytics, Taylor Fry was named Actuary of the Year for 2015. The award recognised Alan's pioneering work in developing the 'investment approach' to social welfare. This long-term view of social outcomes put the actuarial skillset at centre stage for Government; strengthening evidence-based decisions and delivering lasting improvements for society's most vulnerable. [Find out more about Alan's award.](#)

Further information on Actuary of the Year, including a list of previous recipients, is available on the Institute [website](#).

How to nominate

This can be done [online](#) or via an interactive [nomination form](#) - Please download this form to your desktop prior to submission as the links will not work in your internet browser.

Nominations must be submitted by COB Friday 29 July 2016.



How wonderful to see APRA publish their discussion paper ‘The role of the Appointed Actuary and actuarial advice within insurers’

By Trang Duncanson

Chief Editor Trang Duncanson shares her thoughts to generate discussion, and strongly encourages us to contribute.

How wonderful to see APRA publish their discussion paper '*The role of the Appointed Actuary and actuarial advice within insurers*'. I think APRA does a great job with their consultation processes, and this is another excellent opportunity for us actuaries to get involved - it is all about us too!

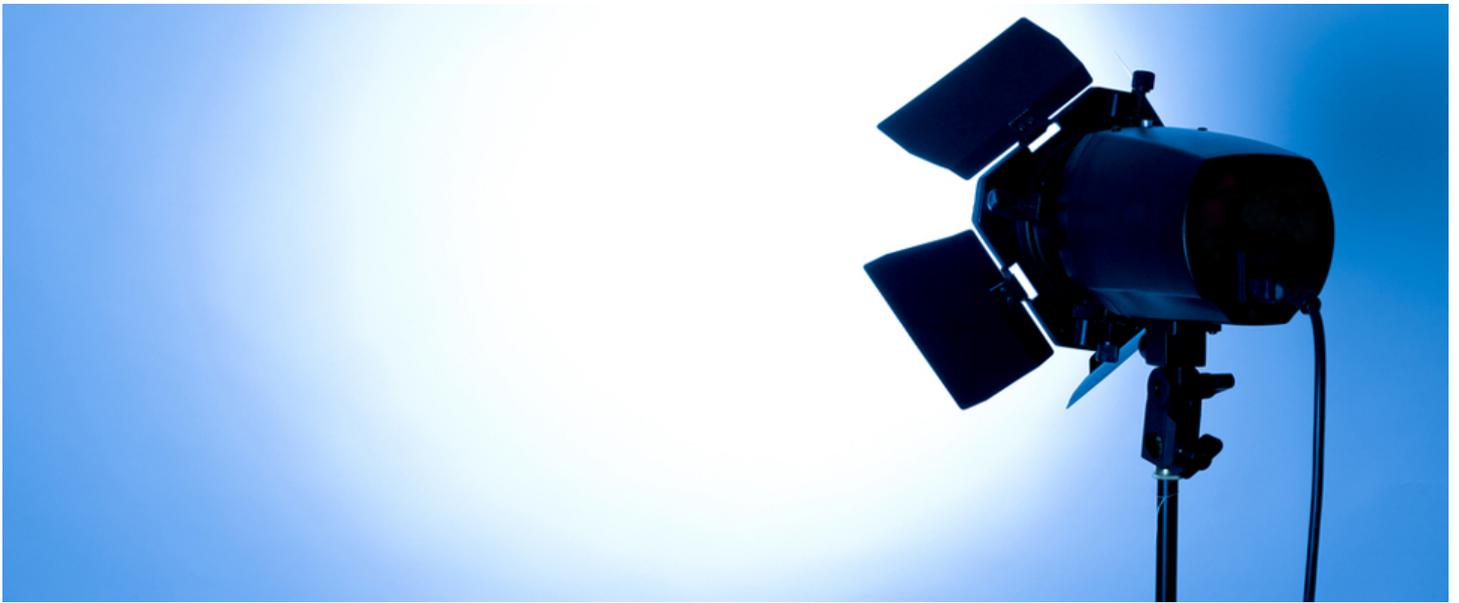
Already some great discussion has been generated. Refer to my latest reads:

- [‘APRA proposes changes to the role of the Appointed Actuary’, ActuarialEye](#)
- [‘How Management and Boards can obtain deeper value from their Appointed Actuaries’, Deloitte](#)

When I read the APRA discussion paper, three key things jumped out at me as items for further thought:

- Conflict of interest - being able to manage this well should not be assumed. Assumption setting can be rife with politics and conflict. What if our rewards are linked to profit or embedded value growth, which we are asked to advise on?
- Organisational structure and authority – they are linked! Not being well positioned in an organisation means you have limited access to information to allow the catalyst and strategic input;
- Conversations with your Board and senior management – we need to take this beyond a discussion with APRA and ourselves. Are we doing this? As the discussion paper says, *“The proposals in this paper require changed behaviour from insurers, actuaries and APRA if the full benefits are to be realised.”*

There will be an [Insights](#) lunchtime session at the Institute on **Monday 18 July 2016** on this topic. Come along to listen, and be heard.



Under the spotlight: Sharanjit Paddam

By Sharanjit Paddam

Sharanjit Paddam describes himself as an actuary who loves making a difference. Principal at Deloitte Actuaries & Consultants, Sharanjit goes under the spotlight to share some of his most personal thoughts.

My interesting/quirky hobbies... EVE Online computer game – A simulated dystopian universe set in the future, known for its difficulty and punishing gameplay, and its player driven storyline.

The sport I most like to watch... Test match cricket.

The last book I read (and when)... Proof of love by Catherine Hall, a tragic story of a mathematician set in the Lake District of England. Highly recommended. Read on holiday in 2014.

My favourite artist/album/film... London Grammar has been on continuous loop on my iPhone for the last few years. I still love the Shawshank Redemption. Anish Kapoor has been my favourite artist since I first saw his work in London in the 1990s.

What gets my goat... is how vested interests and political expediency stop society making good long term decisions, like our failure to address climate change.

Not many people know this but I... actually like spending time on my own.

Four words that sum me up... obsessive, sociable, creative, irreverent.



Sharanjit with his family

My favourite energetic pursuit... Chasing my sons around the house pretending to be a monster.

The person I'd most like to cook for... my family. Preparing and serving food has always been a deep expression of love in my family.

I'm most passionate about...making sure that my children get to see the Great Barrier Reef when they grow up.

If I hadn't become an actuary, I would be... a politician.

Why and how I became an actuary... I thought it'd have something to do with maths. I was mostly wrong. Luckily, I liked it.

Where I studied to become an actuary and qualifications obtained... I studied mathematics at Cambridge, and did all the actuarial exams whilst working at PwC.

My work history... I started work at PwC in London for eight years, then a couple of years with Suncorp in Brisbane, followed by nearly 12 years with Taylor Fry in Sydney, and I started at Deloitte this year.

What I find most interesting about my current role... I love collaborating with others across the Deloitte network to bring new, innovative and commercial solutions for the world.

My role's greatest challenges... trying to keep up with all the ideas I have, and prioritising all the things I want to do.

Who has been the biggest influence on my career (and why)... my first manager – Paul Delbridge, who taught me to be passionate and driven about my work, and to bill early and often.

My proudest career achievement to date is ... winning the Taylor Fry prize for the [paper on Climate Change](#) that I wrote with Jon Harwood, Andy Pitman and Jessica Egan.

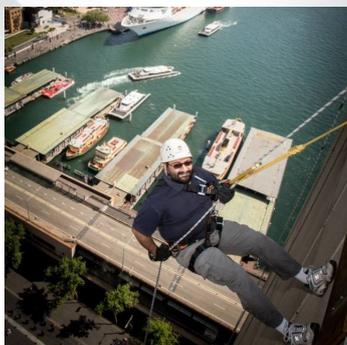
When I retire, my legacy will be... bringing actuarial methods to new spaces.

Why I'm proud to be an actuary... at our best we can help bring about real changes in people's lives and ensure their wellbeing.

The most valuable skill an actuary can possess is ... humility and empathy.

If I were President of the Institute, one thing I would improve is... removing the misconception that an actuarial career is a ticket to rest on our laurels.

If I could travel back in time I would... probably make all the same mistakes again.



My best advice for younger actuaries... find someone who inspires you and work for them, everything else isn't important.

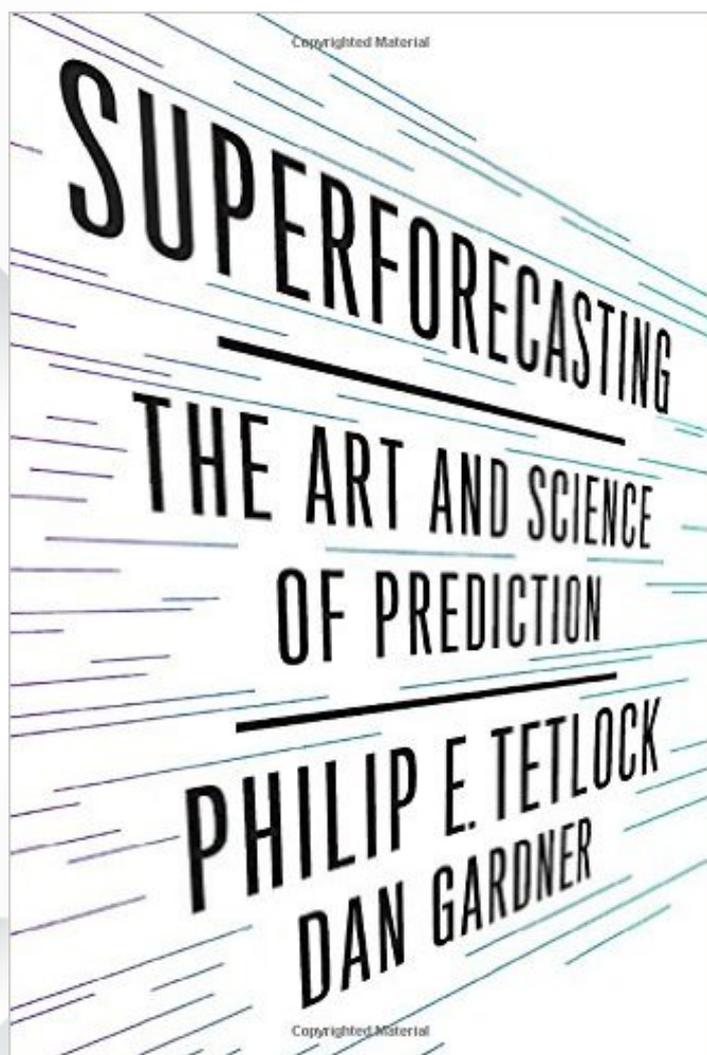
Contact Sharanjit: spaddam@deloitte.com.au



Book Review: Superforecasting

By Jennifer Lang

Today's book review is Superforecasting: [The art and science of Prediction](#), by Philip E Tetlock and Dan Gardner.



When I explain my work as an actuary to people not involved in finance, I explain that I work out how much money the insurance company needs to set aside from the premiums it receives to make sure it can pay all the claims that come in. In

other words, I need to make some kind of prediction of the future.

So when I came across this book, I really had to read it.

That said, the kind of forecasting it is generally talking about is more general than financial forecasting. Some of the questions we encounter in the first chapter include:

- Will North Korea detonate a nuclear device before the end of this year?
- Will Russia officially annex additional Ukrainian territory in the next three months?
- How many additional countries will report cases of the Ebola virus in the next eight months?

Actually that last one is probably quite relevant to actuaries, at least those working for travel insurers or life insurers. So is there a way to forecast the answers to questions like these? And how do you get better at it?

Back in the 1980s, Tetlock started a study of expert forecasters to try and work out what made a good forecaster. Because he was looking at very long-term forecasts, he didn't publish the final results until 2005. He found two statistically distinguishable groups of expert. One group generally did as well as, or (in long-term forecasts) worse than random guessing. The other group consistently did slightly better than random chance. Tetlock and Gardner categorise these groups as foxes and hedgehogs, using the categorisation of the ancient greek philosopher Archilochus:

The fox knows many things but the hedgehog knows one big thing.

When forecasting, foxes beat hedgehogs. Hedgehogs tended to have one big idea – one narrative about how things work (some were socialists, others were free market fundamentalists, and still others were environmental doomsayers). They tended to ignore information that didn't fit their narrative, and they generally did worse than random chance. Foxes, on the other hand, were more pragmatic experts who drew on many analytical tools, and gathered as much information from as many sources as they could. They were also much more likely to change their view when new information appeared.

Foxes beat hedgehogs. And the foxes didn't just win by acting like chickens, playing it safe with 60% and 70% forecasts were hedgehogs boldly went with 90% and 100%. Foxes beat hedgehogs on both calibration and resolution. Foxes had real foresight. Hedgehogs didn't.

But being right less often doesn't harm the career of the hedgehog. The study revealed an inverse correlation between fame and accuracy:

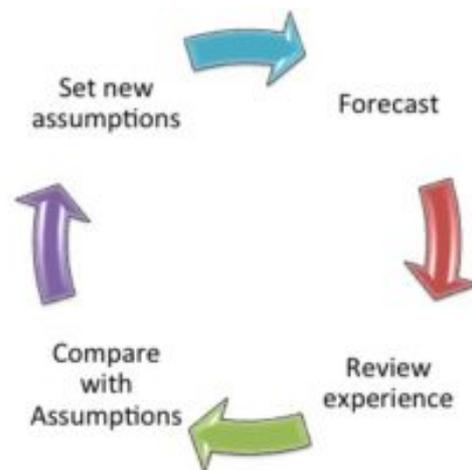
.the more famous an expert was, the less accurate he was... Animated by a Big Idea, hedgehogs tell tight, simple, clear stories that grab and hold audiences...Foxes don't fare so well in the media. They're less confident, less likely to say something is "certain" or "impossible", and are likelier to settle on shades of "maybe".

So to be a superforecaster, you need to let go of the Big Idea. But what else do you need? There are quite a few key attributes, according to the authors:

- Unpack the question – sometimes called [Fermi estimation](#). [Whatif](#) gives a great explanation. This involves unpacking the question into many different subcomponents. The example in the book is thinking about the question "will [polonium be found in Yasser Arafat's body](#)". To answer that question, we don't need to get into motive, or who would poison Yasser Arafat. Instead, we need to understand how polonium works, and whether it was even possible. Then we need to think about the many different ways that polonium could have got into his body (including intentional contamination). Breaking down the problem into component parts helps you think through the possibilities.
- Leave no assumptions unscrutinised – you need to think about all the assumptions you've made while unpacking the problem – for example, in the example above, one of the assumptions you might make without noticing is that polonium could only be found if Yasser Arafat had been deliberately poisoned. But interference was also possible.
- Dragonfly Eye – in other words the ability to obtain many different perspectives on the problem. Another way of describing this is active open-mindedness. Superforecasters are constantly testing their perspectives, and looking for ways to think differently about a problem.

For superforecasters, beliefs are hypotheses to be tested, not treasures to be guarded.

- Adopt the outside view – you need to consider the base probability of something occurring. For example, if you are asked how likely it is that there will be an armed clash between China and Vietnam, you should start by asking how often such a clash generally happens (rather than immediately jumping into the current political state of relations). If no clash has happened in the last 100 years, then next year is a lot less likely than it might be if a clash happens every five years on average.
- A way with numbers – most superforecasters have a way with numbers. They aren't necessarily super mathematicians (one of the early examples in the book dropped out of his PhD in mathematics after "I had my nose rubbed in my limitations") but they are highly numerate, with backgrounds in maths, or computer programming, or some kind of science. The PhD maths drop out regularly builds Monte Carlo simulation models, for example.
- Find the wisdom of crowds – superforecasters spend a lot of time looking for other sources of information about the problem they are trying to solve. And working in teams of forecasters, if you develop ways of capturing everybody's views, will also improve accuracy.



Actuaries are trained to think about the control cycle, when predicting the financial future, which they do for pricing, for reserving, and in looking at the sources of variation in experience. That very much involves forecast and review. For the most important sets of assumptions (such as future claim rates on insurance contracts), there is a lot to think about in this book. I'm particularly taken with the many different ways in which superforecasters think widely about their forecasts.

This weekend we are in the middle of another [east coast low](#), with more rain forecast on already sodden catchments recovering from floods and storms up and down the east coast of Australia. Our weather forecasters are getting better and better at predicting events like this. For insurers, the more we can take those forecasts and use them to help our customers (with predictive text messaging, and repairers and claims staff on standby), the better. Superforecasting has many uses, not just political or financial. It is definitely worth reading this book to think more broadly about how to forecast better.

See the original article at the [Actuarial Eye](#).



Insuring Cyber Risk – Concerns about Risk

By Susie Amos and Alina Pettifer

Insurers will need to work through their concerns about cyber to remain relevant in the future, write Susie Amos and Alina Pettifer in the final instalment of this Two Part series on cyber risk.

How do we underwrite and price?

We are bombarded with cyber statistics every day. However, the available statistics are rarely directly relevant or usable in traditional insurance pricing approaches. In addition, the evolving nature of cyber risk increases the difficulty of underwriting and pricing, even when historical data is available.

Given the immaturity of the Australian cyber insurance market, there is little claims experience. This lack of data should be a short term problem as the market matures. However, in the meantime, we need to look at ways of pricing and underwriting without perfect data.

There are currently diverse approaches to underwriting and pricing in the Australian market. We have seen up to 50 underwriting questions being asked by a single insurer, and over 200 different questions across the market. Some questions are qualitative, and can be difficult to translate into quantitative terms for pricing.

In this context it is perhaps not surprising that premium rates offered for the same risk can vary significantly – by up to a factor of four. As the market matures, we expect to see convergence in underwriting questions and in pricing.

Pricing and evaluating risk with limited data is not new to the insurance world. Products such as D&O, Political risk, Kidnap and Ransom, as well as many products written in the Lloyd's market, are priced with very limited data. A more judgement-based approach is needed, and this can be refined as experience emerges.

Do we need a new approach to evaluating risk? We think an approach which goes back to the insurance fundamentals of assessing the risk potential and mitigation can be used. The suggested key measures of exposure, and mitigating factors to be considered are shown in the diagram below.



There is data available (albeit limited) on a number of the exposure measures and mitigating factors outlined in the figure, and this can be used as a starting point to differentiate risk. The effectiveness of a business's IT security is probably the most difficult element for an underwriter to assess and translate into a price. Insurers may be able to source expertise from IT security companies – to help develop a quantified and consistent 'security vulnerability' measure to feed into underwriting.

As mentioned, it is difficult to translate the drivers of cyber risk into a price. The diagram below outlines a proposed approach. The assumptions adopted in this approach can and should be refined as experience emerges and the environment evolves.



We believe that it will be useful to set separate **likelihood** (frequency) assumptions for incidents of different types – system errors, crimeware, misuse, physical loss, web attack – as this will allow for emerging trends in any area to be reflected quickly. In a similar vein, adopting individual **severity** assumptions by incident type and type of loss (notification, legal, investigation, loss of business) will enable different expectations – and eventually, experience – to be reflected.

There is more data on the likelihood of cyber incidents, and experience is reasonably consistent across countries. Severity statistics are harder to come by, and vary significantly across jurisdictions, being dependent on local laws and regulations.

How will aggregation be dealt with?

Cyber risk poses an aggregation risk for insurers that is difficult to quantify, and this creates significant uncertainty for underwriting cyber insurance. Some cyber events can result in losses across multiple policies, products, industries and geographies – for example, power grid outage, hacking of a major investment firm or common service provider, software vulnerability, denial-of-service scams.

This potential aggregation is new to insurers and cyber catastrophe models are now being developed to assist insurers and reinsurers understand this risk. A scenario-based approach can help in understanding the potential aggregations for a given portfolio. Some realistic disaster scenarios have been specified by Lloyd's, and these could be used as a starting point.

An insurer can limit its aggregation by managing portfolio exposures and by purchasing catastrophe reinsurance. At the moment, reinsurance capacity appears to be available, but this may not continue.

How do we assess claims?

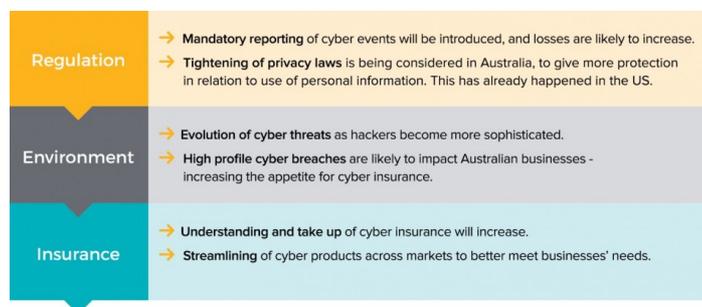
Claims management for this new product is different from the 'usual'. It requires a combination of claim specialties – including cyber forensics, cyber and privacy law, business interruption and property adjusting.

A number of the big law and audit firms have developed cyber risk specialties, and their expertise can be tapped into for assessing claims. Some of the claims assessors have similar skills to assessors of property, business interruption and liability claims.

How will risk change over time?

In the evolving digital world, insurers will need to be quick to respond to the emerging experience. This will involve monitoring trends, understanding their impacts, and responding via underwriting terms, limits and deductibles and/or price.

We see the following main drivers of change in cyber risk in the short to medium term:



Conclusion

The insurance industry is well placed to support businesses operating in the digital age, but some aspects of cyber insurance are new and are creating concerns for insurers. However, the digital age is here to stay and commercial insurers will need to work through these concerns to remain relevant into the future.

There is currently limited data available for underwriting, pricing and assessment of aggregation, but judgement-based techniques can be used (alongside the data) to evaluate levels of cyber risk. Ongoing monitoring and product responsiveness will be required as this product evolves.

Some insurers have seen the opportunities and launched into the cyber insurance space. Offerings and pricing are currently diverse, but we expect to see convergence over time.

We look forward to seeing the cyber insurance market continue to evolve and help businesses navigate the digital age.

Find out more in [Part One: 'Concerns about Coverage'](#) of this article series by Alina and Susie.



Lending an Actuarial Hand

By Alan Wu

At last month's Melbourne YAP, Queenie Chow and Mandy Burns spoke about lending an actuarial hand through various volunteering programs. Alan Wu takes us through this eye-opening session featuring Actuaries helping the world become a better place.

On the 12 May 2016, the Young Actuaries Program (YAP) members gathered together for the second instalment in the 'Evening Speaker Series' of the year – Lending an Actuarial Hand. Queenie Chow, a long term member of the Melbourne YAP community and Mandy Burns - CEO of Ardoch Youth Foundation talked about volunteering work they had been involved in. They shared with the attendees some of the great volunteering opportunities available to actuaries, both in and outside of Australia. The night certainly inspired many of us to make some contributions through volunteering and to warm others by lending an actuarial hand.

74,000 Associates and Fellows, including around 800 volunteers scattered all over the planet).

Queenie gave the audience a detailed introduction to the Actuaries Without Borders program, which sits within the IAA. In many parts of the world, there is a lack of actuarial professionals, and so it is hard for actuarial students in those countries to get access to the learning resources required to build strong actuarial practices. Queenie shared with us the experiences she had whilst volunteering in Africa and gave the attendees an overview on the types of opportunities actuaries can get involved with through AWB. These include participating in short term projects in developing countries, a global mentoring program, book donations and many more.



Queenie shared her recent volunteering experience with Actuaries Without Borders (AWB). She started her presentation by giving an introduction to the International Actuarial Association (IAA), the organisation which oversees AWB. For many of the young attendees it was informative to know the structure of the IAA to which the Actuaries Institute (Australia) is a member. It was interesting to learn the scale and network of the international actuarial community (total of approximately



The second speaker of the evening was Mandy Burns from the Ardoch Youth Foundation. Ardoch is a charity that provides education support for children and young people in socially disadvantaged communities. The vision of the organisation is that every child and young person's potential is realised through full participation in education. Mandy explained to the audience that there is still a large number of children in Australia who cannot receive an adequate amount of support for their literacy and numeracy development. She believes actuaries can play an important role as advocates for the importance of numerical education.

The Ardoch program helps facilitate interaction between volunteers and disadvantaged students with the aim of assisting students in their learning, as well as showing the practical workplace application of numeracy skills. The 'Big Buddies' (volunteers generally from corporate environments) are paired with a class of 'Little Buddies' (primary school children) from different schools. There is also an opportunity for the school kids to visit the 'Big Buddies' workplace during the program! The initiative provides an opportunity to inspire the children to dream big and be more confident in learning mathematics and other essential skills.

In the Q&A session, the YAP members showed great interest in these volunteering opportunities. It was a very warm evening for the YAP members to realise the extra value we can offer to the community. Actuaries have played important roles to provide services to the community with significant social impacts. As the next generation of the profession, it is important to remember, lending a hand will always help the world become a better place.

The Young Actuaries Program runs a number of events in Melbourne including evening speaker sessions and networking lunches. For more information please contact me via [email](#) and keep an eye on upcoming YAP events in our [Events Calendar](#).

See Queenie's article: [Creating inclusive insurance for all](#).



Finity and the National Fair Internship Pledge - The link between interns and diversity

By Dimity Mannering

The National Fair Internship Pledge is a promise to provide equal opportunities for young talent, regardless of their situation. Finity has become the first actuarial firm to take the pledge, joining employers in government, tech, education and the not-for-profit sector

If you're an actuarial firm that takes on graduates, it's likely that you have the occasional intern, perhaps a few interns, populating your office cubicles at various times throughout the year.

You're not alone. As Australia grows into a knowledge and services-based economy, internships have quickly become a feature of recruitment strategies, and the number of internships has increased rapidly as a result. For employers and job seekers, this is a win-win: internships provide employers with a pipeline of fresh talent while offering young people an opportunity to get that proverbial foot in the door.

But amid the many benefits, there also lies a challenge: ensuring that internships don't inadvertently thwart another major trend of the past decade - the push for more diverse and inclusive workplaces.

In Australia, only 12.72 per cent of interns are paid and according to Interns Australia's 2015 survey, the average intern forfeits \$5,913 in wages to undertake an unpaid internship – a considerable sum for most young people. In the hope of gaining the experience that might lead to a paid role, many interns turn to their parents for financial support during their placement. Others work nights or weekends to pay their rent and bills. But for a significant number, the loss of wages over the weeks or months of an internship is an obstacle that can't be overcome.

As businesses increasingly focus on diversity and inclusion, the importance of hiring staff who come from varied socio-economic backgrounds is gaining recognition. Interns are an important part of the equation. In fields like actuarial consulting, where interns are often a feeder into graduate programs, one of the most crucial steps an employer can take to ensure diversity and inclusion is to offer internships that can be accessed regardless

of the financial resources available to a young person. In short: paying interns is a vital step in ensuring firms don't miss out on talent because a potential hire can't afford to work for free.

With the growing role that paid internships play in diversity and inclusion, at the end of 2015, Interns Australia launched the National Fair Internship Pledge.

In recognition of the quality and accessibility of its internship program, Finity has become the first actuarial firm to receive the Pledge seal, joining employers in government, tech, education and the not-for-profit sector.

The Pledge is Australia's first program to recognise employers supporting young people of all backgrounds to undertake internships. As part of the initiative, employers receive the Pledge seal, which provides prospective interns a way to identify paid internships that also offer genuine training and mentoring – previously not an easy task with no independent marker of the quality of a placement and 87% of internships in Australia unpaid.

Recognising employers and helping young people to identify great internships is an important part of improving diversity and inclusion. But the end goal of the National Fair Internship Pledge is something even bigger: to encourage more employers to join firms like Finity to offer young people of all socio-economic backgrounds an internship that could kick start a brilliant actuarial career.

For more information, visit [Interns Australia](#) or [email NFIP](#).



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