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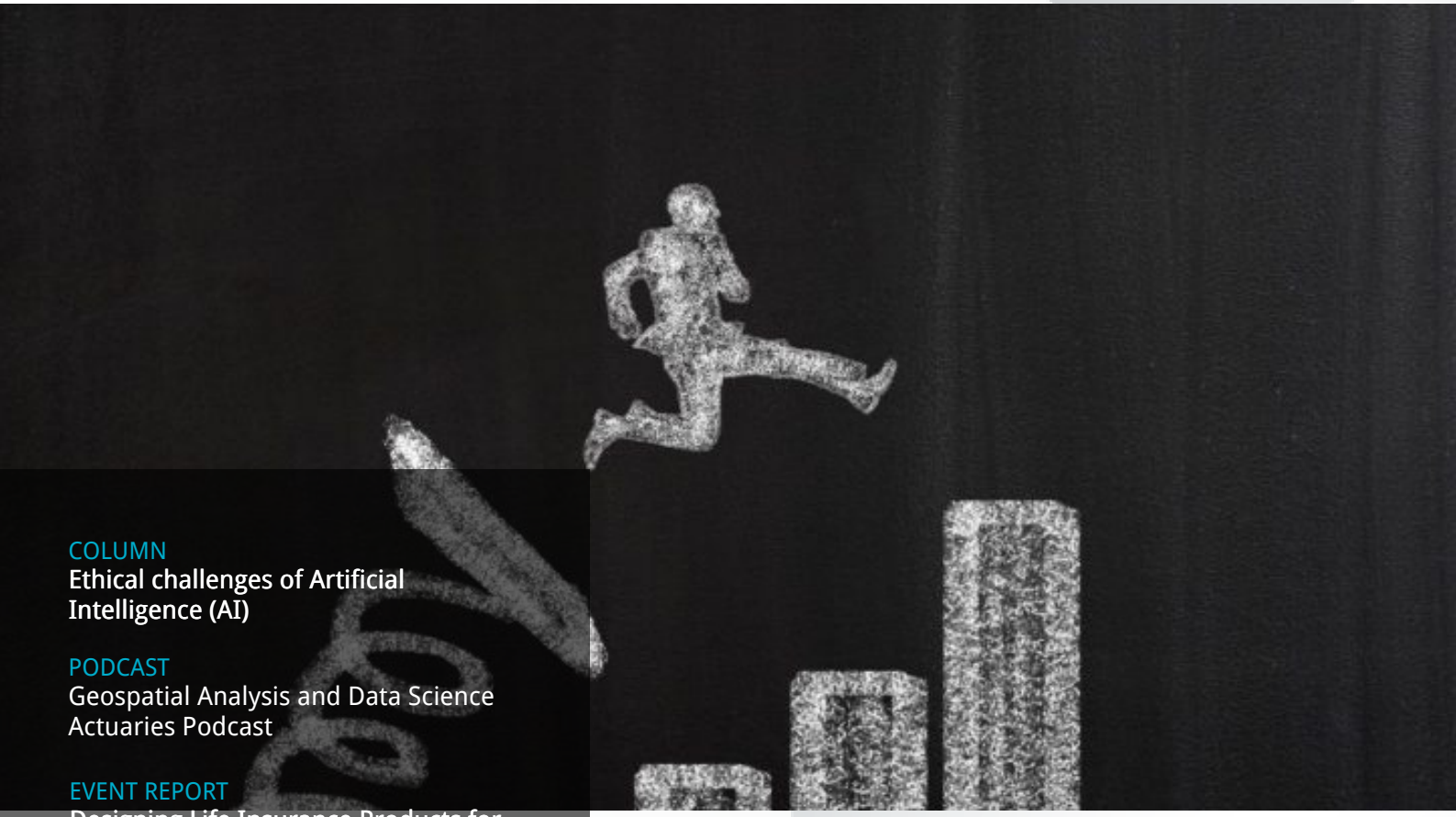
# Actuaries DIGITAL



# In this issue



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# What makes a good data scientist? - Actuaries Podcast

By Stephanie Quine *(stephanie.quine@actuaries.asn.au)*

Reading time: 4 mins

Effective data scientists need to understand the workings of IT teams and identify the limits of truth in models, says Co-Founder and Chief Scientist at Ambiata.

Tiberio was interviewed by Anthony Tockar on the Actuaries Institute's podcast last month. This is the second episode from that conversation (the first explored the ethics of machine learning).

Listen to "What Makes a Good Data Scientist?" on Spreaker.

Listen on Apple Podcasts

Listen on CastBox

If an actuary is working as a data scientist for a large organisation with millions of customers and complex internal IT legacy systems, being able to engage well with internal IT and data teams is critical. That means, as a first step, knowing their lingo.

"You don't have to be a database engineer [or] a Hadoop expert or anything to work with those technologies and work with those teams, but you need to be speaking the same language essentially," said Anthony.


Data science combines both statistics and computer science. Actuaries are skilled in the former through their modelling and forecasting work, for the latter, they must upskill. As an actuary who transitioned into data science, Anthony said he spent most of his learning time on computer science. He highlights the importance of having a good handle on the underlying flow of data that informs the modelling.

"When you want to deploy things at scale, it's really important to have familiarity with data pipelines and understanding of databases [and] of the new thinking around 'how do you manage data?' says Tiberio Caetano.

## From academia to 'the wild'

After studying engineering and physics, then taking a PhD in computer science, Tiberio became fascinated with computer vision and machine learning.

From Brazil, then Canada, he came to Canberra, Australia to work alongside hundreds of PhDs from all over the world at NICTA - Australia's Information and Communications Technology Research Centre (which merged with CSIRO in 2016).

**"Forget crazy robots taking over the world, forget dystopian or utopian futures - machine learning is about providing a machine a description of your goal and let the machine work out by itself the steps required to achieve that goal." - Tiberio Caetano**

Wanting to see what an academic could achieve "in the wild", Tiberio co-founded Ambiata, a company that applies machine learning and predictive analytics to media, government, insurance, banking, telecommunications and retail businesses.

"That was a very deep sort of incursion into reality that not many academics get to indulge in," said Tiberio, adding how hard it was to transform ideas into practical outcomes, but also how gratifying it was when it was possible.

## Knowing your limits and quantifying uncertainty

When asked 'what makes a good data practitioner?' Tiberio says it's knowing the limits of your knowledge and how to accurately estimate uncertainty in models:

> "Most problems I see resulting from data science action come from mis-assessment of your knowledge about something: how little you know about how much you know," says Tiberio. "You need to be critical about everything, but especially about your own ideas."

When building pricing models, Tiberio suggested actuaries should work to understand how error bars, significance tests and every other technicality translates in layman's terms.

> "They are models, they are not the truth. The truth is much more complex, and you need to have certain ways to assess the extent to which your model is different from the truth.
>
> "You have 'model uncertainty' which is basically the bias that you are introducing when you create a model because you don't know the truth … and you have 'statistical uncertainty' which is the fact that you don't have all the data in the world, you just have a finite sample.
>
> "Learn more about how to quantify uncertainty; how to question your models and be more accurate about certainty in your models," he said.
> Skills

## Building your skill-set out

Skills data scientists need cover programming, algorithms, machine learning, statistics, visualisation, reporting and data management. Some people are able to cover a range of topics, but in other cases the best option is to build a good team that covers the skills.

An entrepreneurial mindset that is constantly learning, passionate and innovative is also important for data scientists; whatever they build may be obsolete in a couple of years as better solutions are developed.

Communication is equally important. As Anthony said in an earlier presentation, data scientists infer and explore the data, and explain what's happening to the business, often through visualisation. They often face challenges in explaining experimentation to non-scientists and knowing their audience. Daniel Marlay, Director at EY, provides some tips in this presentation on how to give either an outcome focus to senior management or use a narrative style with lots of detail when communicating to more technical audiences.

**Tiberio will give the Closing Keynote Address "Ethics behind AI and Technology" at the 2018**

**General Insurance Seminar (12-13 November).**

**View the program and register to attend – one and two day tickets are available.**

General Insurance Seminar
Transform the Future
12-13 November 2018 • Sofitel, Sydney

## Useful links and resources

Data Analytics Newsletters:

- August 2018 - Analytics in the new actuarial education pathways + News and Tutorials
- September 2018 - Ethical issues in data
- October 2018 - Careers in Data

Presentations from the 2018 Data Analytics Seminar on Wednesday 31 October will be available following the Seminar on the Program Snapshot page.

**Insights - What is Data Science?** Tuesday 12 September 2017, Sydney. Presented by Anthony Tockar

- Presentation
- Audio
- Video

Presentations from the inaugural Data Seminar (2015) - members only.

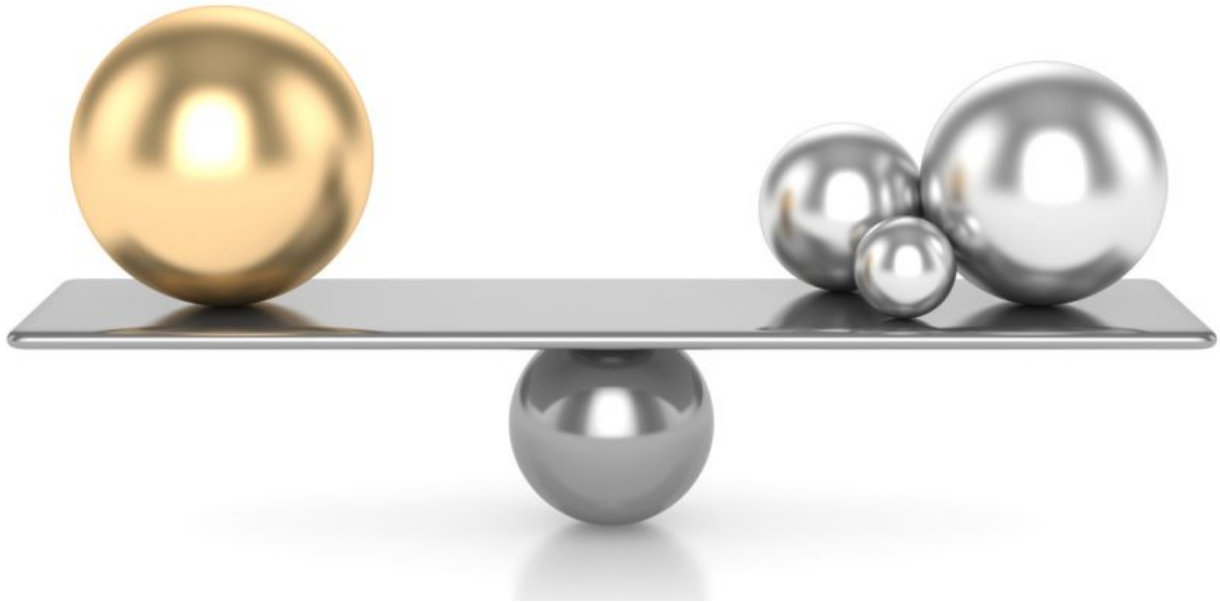
Actuaries Magazine

Finding the Data Analytics Unicorn Event Report on 2015 Data Seminar by Amanda Aitken

CareerView Podcast - Managing a Data Analytics Team, with Hugh Millerand Aaron Cutter

Actuaries Podcast - the ethics of machine learning, with Tiberio Caetano and Anthony Tockar

How actuaries can get started in analytics, Normal Deviance column by Hugh Miller



# Whose risks are we really managing in superannuation?

By Rein van Rooyen

Reading time: 9 mins

Are funds managing the risks members face to their retirement outcomes or are funds instead managing their own business risks?

The Royal Commission released its interim report on the 28th of September 2018. In its findings it is evident that "From the executive suite to the front line, staff were measured and rewarded by reference to profit and sales"[1]. Banks specifically have been challenged in that their sole focus of attention has been their 'share of the customer's wallet'. Is this limited to the banks or do we have the same focus at play in Superannuation?

When it comes to selecting a fund, the focus tends to be on the most recent investment performance or the lowest fees, as this is what funds receive awards for. Unfortunately, these are often also considered in isolation, with the oversight made that the highest investment performance and lowest fees are often not from the same product, even if both were achieved by the same fund. To make matters worse, this distinction is often misrepresented when it comes to marketing to the general public. As a result, a lot of emphasis is placed on peer relative rankings and league tables to attract new members and increase funds under management. But how does this translate into what members actually experience and furthermore their retirement outcomes? Let's start by considering what the industry defines as success.

## Defining Success

Just by looking at the headlines in the press, it is quite easy to see that the focus is on Time Weighted Rates of Return ("TWRR") in the good times as well as the bad times. TWRR is a measure often used to compare the performance of Asset Managers who do not have control over their external cash flows. This is a suitable measure for institutional clients who give these Asset Managers specific mandates. One could naively argue that super funds also don't have control over their cashflow (ignoring the fiduciary duty they have), although the Super Guarantee percentage ("SG") does provide an estimate of what cash flows are coming based on the member base. However, using TWRR is one of the major flaws when assessing fund performance relative to member outcomes, as members actually experience Money Weighted Rates of Return ("MWRR"). A simple example illustrates the point. Comparing two investment scenarios; an initial capital lump sum of $400 (scenario 1) versus annual contributions of $100 at the start of each of the next 4 years (scenario 2). Scenario 1 is reflective of the asset management industry investing lump sums, whereas scenario 2 is more reflective of member contributions.

| | Scenario 1 | Scenario 2 | Annual Returns |
|---|---|---|---|
| Starting Balance | $ 400.00 | $ 100.00 | 20% |
| Contributions | | $ 100.00 | 10% |
| Contributions | | $ 100.00 | 0% |
| Contributions | | $ 100.00 | -20% |
| Balance after 4 years | **$ 422.40** | **$ 353.60** | |
| Gain/(loss) | $ 22.40 | ($ 46.40) | |
| TWRR (%p.a) | 1.37% | 1.37% | |
| MWRR (%p.a) | 1.37% | -3.04% | |

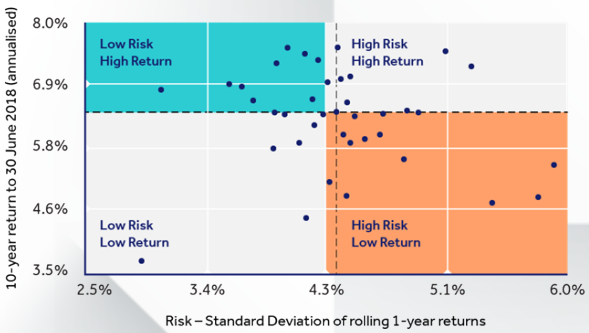
If the return for each year is assumed to be as per the table above then the capital lump sum would grow to $422.40, whereas the scenario with annual contributions would in fact make a loss and result in a final balance of $354.60 which is less than the total amount contributed. Both scenarios would result in the same TWRR, however scenario 2 would actually result in a negative MWRR which is more reflective of what members actually experience. However, this tends to be omitted in the conversations with members and promoting fund performance, not to mention handing out awards and ranking funds in league tables.

Short-termism exacerbates this even further as the focus is on the last year's performance instead of the last ten years. The incentive is therefore created to manage peer relative risk as your primary objective to claim the top position in the rankings[2]. But what does this mean for portfolio construction and its inherent risks?

## Portfolio Construction

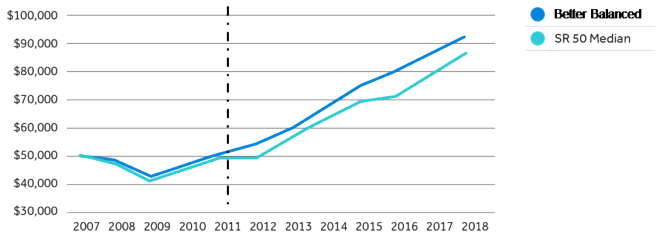
In order to have the closest like-for-like comparison, funds tend to offer a "Balanced" option which usually blends the asset allocation between "growth" and "defensive" assets. Regrettably, these comparisons are not as straight forward as most individuals like to believe, unless you are following the herd and investing in the same assets as all the other funds for the sole purpose of managing your peer relative performance. For example, asset classes are classified using broad definitions and therefore Nominal Bonds and Synthetic Futures would both be grouped as "Fixed Interest" exposure, which tends to be seen as defensive assets. The Synthetic Futures in reality could behave more like growth assets with the added benefit of diversification depending on how they are structured. Another example amplifying the subjective nature of this is the fact that some funds are including unlisted infrastructure as defensive assets in their classification, despite the fact that the global financial crisis of 2008 highlighted that the reliance on such assets in stressed market conditions do not support this classification[3]. Unfortunately, this is completely ignored by rating agencies when comparing fund performance and handing out awards.

The short-termism also has the perverse effect that funds who shoot the lights out in any given year are celebrated and rewarded with little attention paid to their longer-term performance. However, more than often these are the funds that took the highest risk and got rewarded for it, as evidenced by the fund ending at the top of the rankings this year with no fixed interest holding[4]. Unfortunately, these high-risk funds do get it wrong from time to time and end in the significantly lower return territory as illustrated by the bottom right orange quadrant[5].




When considering what members actually experience (with the $100 annual contribution example above in mind), the better portfolio for the member will be the portfolio that consistently achieves higher risk-adjusted returns but with lower volatility (top left quadrant above). This portfolio would not necessarily end at the top of the league tables in any given year, but consistently outperform its benchmark. It is important to achieve consistently good returns over time as this is how members actually grow their savings. Saving for retirement is a long-term plan and should not be mistaken for a roller coaster ride as most Industry Balanced funds[6] experience due to the desire to end at the top of the rankings in any given year and therefore follow the herd through fear of missing out, with volatile returns as a result as depicted below.


The Better Balanced portfolio would therefore result in a more stable accumulation for members' savings and smooth the actual member experience. The Better Balanced fund represented here is an actual fund in the industry that removed itself from the league tables, and at a time when it was in fact at the top of the rankings. This fund made the decision as it recognised that it is not actually serving members' best interest by managing its own business risks (through self-promotion in the league tables) instead of focussing on what members actually experience. The consistently good returns achieved actually resulted in members being better off over the long term as illustrated in the graph[7] below through the compounding effect of investment returns over time.




This graph shows the accumulation over time for a starting balance of $50,000, purely using compounding investment returns. The departure from the peer relative objective occurred in 2011 and it can be seen that since then the fund's performance actually resulted in a smoother member experience compared to the median industry balanced fund performance, as well as consistently delivering higher accumulated savings for members over the long term. This is unfortunately not measured and celebrated by the Industry even though this is more in line with what members actually experience. Instead, the focus in the Industry is on wealth accumulation through the spurious measure of using TWRR. The next piece of the puzzle is to consider whether the focus on wealth accumulation actually manages the members' risks relative to their retirement outcomes?

## Luck of the Draw

The defensive assets in a Balanced fund are seen as the assets which tend to reduce the volatility of the unit price. Hence, the purpose for including these assets in the portfolio are to reduce the drawdowns on the capital values. Including such assets are often seen as an opportunity cost, especially when a country has experienced uninterrupted growth for 28 years like Australia has. It is worth calling out that while Australia has experienced uninterrupted growth, super funds do not only invest in Australian equities.

However, the emphasis remains on being exposed to growth assets, which for the majority of funds tend to be through large exposures to equity investments (domestic and international). The rationale being that equities surely can't lose over the long run. Also, with rates currently being relatively low one CEO was quoted saying *"Why would you be in fixed interest when it's not yielding [much]"*. This is starting to look very similar to the

'single bets' and high-risk exposure from the earlier graph which sometimes result in significantly lower returns (orange quadrant). Furthermore, this is usually based on the assumption that all members have long investment horizons forgetting that there is a disconnect between accumulation during their working lives and consumption during their retirement. Members experience sequencing risk when they retire as they need to switch from accumulation to some form of retirement product to benefit from the favourable tax treatment. This results in significant timing risk. Usually, the flexibility in the timing is limited as most members need to draw on the funds in their retirement and therefore can not weather a storm in case of market downturns. This results in members being exposed to the luck of the draw as to when they retire if they were in a Balanced option all the way to retirement, as the Balanced options are designed for the average member, which nobody is in reality. While high growth allocations will on average give better outcomes over the long term, that does not mean much to an individual that retires in the middle of the GFC for example.

*"Balanced options are designed for the average member, which nobody is in reality."*

As mentioned before, the defensive assets in a Balanced option are usually included to manage the volatility of the unit price and hence the capital value at retirement. However, the purpose of the system is not wealth accumulation.

## The Objective

The (proposed legislated) primary objective for the superannuation system is *'to provide income in retirement to substitute or supplement the Age Pension'[8]*. The objective is therefore not to provide an uncertain lump sum accumulated up to retirement, but instead to target a more certain retirement income.

When framing the challenge as a retirement income objective, the risks a member face are much more complex than only the volatility of the unit price. Instead members are exposed to a number of other risks such as inflation, real rates, longevity, adequacy and outcome certainty to name a few.

These risks often result in a trade-off. For example, adequacy risk can be potentially reduced through investing in more growth exposure assets at the expense of higher volatility and therefore higher outcome uncertainty. It is therefore just as important to raise investment risk when a member can afford to as to manage investment risk when a member can't afford to take full investment risk. The objective to provide a retirement income changes what classifies as "defensive" assets. This shifts the focus from using cash as the defensive asset to preserve capital, to instead using assets which can produce a real income stream during retirement. So, back to the Industry Fund's CEO making the statement as to why would you be in fixed interest. The answer to this would be to manage real rate risks for members as most members rely on term deposits and other real rate exposures during retirement to provide them with income.

## Shifting the Focus to Member Outcomes

The focus on peer relative performance and league tables have forced funds to manage their own business risks instead of what really impact member outcomes. When considering members' risks relative to their retirement income objective, the focus needs to shift away from TWRR and more towards managing the risks that really impact members. As an industry, we surely can't continue to celebrate and reward measures that detract from the primary objective of the system, which is to manage members' risks relative to their retirement outcomes. The Royal Commission is expected to release its final report in February 2019.

[1] https://financialservices.royalcommission.gov.au/Documents/interim-report/interim-report-exec-summary.pdf

[2] https://blog.stockspot.com.au/how-super-funds-play-the-ratings-game/

[3] https://blog.stockspot.com.au/how-super-funds-play-the-ratings-game/

[4] https://www.smh.com.au/money/super-and-retirement/remarkably-resilient-super-funds-outperform-as-hostplus-tops-the-league-table-20180718-p4zs3l.html

[5] The diagram is for illustration purposes only and is based on data sourced from SuperRatings SR50 Balanced Index (60-76) Index using median returns. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance

[6] The diagram is for illustration purposes only and is based on data sourced from SuperRatings SR50 Balanced Index (60-76) Index using median returns. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance

[7] The diagram is for illustration purposes only and is based on data sourced from SuperRatings SR50 Balanced Index (60-76) Index using median returns. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance

[8] https://www.legislation.gov.au/Details/C2016B00182

# Climate Change Blog - October 2018

By Evelyn Yong

Reading time: 5 mins

Welcome to the fourth instalment of the Climate Change Blog, an article series that aims to cover news and events related to climate change and relevant to actuaries and the industries they advise.

This series is brought to you by the Institute's Climate Change Working Group. This month's edition showcases the following:

- The Global Climate Action Summit
- The PRI in Person
- The Investor Agenda
- Climate week in New York
- UNEP PSI

At the time of publishing, the IPCC Climate Report on 1.5°C had just been released. This report was a sobering reminder of the urgency of action needed and the nature of responses to the report may assist actuaries in analysing transition risk. Look out for the upcoming instalments in this series where we will cover Sustainable Development Goals and the Australian Actuaries Climate Index.

## Global Climate Action Summit

San Francisco has been at the centre of the climate change debate during September 12-14. Participants in the Global Climate Action Summit unveiled new commitments under five challenge areas – healthy energy systems, inclusive economic growth, sustainable communities, land and ocean stewardship, and transformative climate investments.

In the news coverage from ABC7News, Meg Caldwell from the David & Lucille Packard Foundation talks about the highlights from the GCAS and what individuals can do to help in this cause.

Some of the efforts highlighted at the GCAS were:

- BlackRock to evaluate and invest in companies that are more climate-friendly
- Allianz to stop underwriting coal power plants by 2040
- Bank of America to invest $125 billion in green areas by 2025

A way to track and push these promises is through The Investor Agenda, which gives companies a place to track and disclose investments and other actions. More detail on The Investor Agenda is covered further down in this article.

The GCAS was also covered by the UN Environment and CBS News.

## PRI in Person

Coinciding with the GCAS in San Francisco was the PRI in Person event. PRI in Person is a conference on responsible investment, offering a platform for PRI signatories and other investment professionals to learn, network and collaborate in person over a three-day period. The PRI had close to 2,100 signatories

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representing $80 trillion AUM. The conference's agenda covered climate change, social and governance issues, policy reform, ESG integration and Sustainable Development Goals.

The PRI started in 2005 when a group of the world's largest institutional investors joined to develop the Principles for Responsible Investment (PRI). The Principles were launched in April 2006 at the New York Stock Exchange. Since then the number of signatories has grown from 100 to over 1,800.

## The Investor Agenda

The Investor Agenda was launched at the GCAS and the PRI in Person. The Investor Agenda supports investors in accelerating and scaling-up actions critical to tackling climate change. Its launch shows a significant momentum – nearly 400 investors with US $32 trillion in assets under management are using The Investor Agenda to highlight climate action that are already taking, and they are making new commitments. Investors can report their actions in the four focus areas:

- Investment
- Corporate Engagement
- Investor Disclosure
- Policy Advocacy

"The Investor Agenda demonstrates the work of global investors to manage climate risk in existing portfolios and through new investment opportunities. As Australia's leading pension fund for the built environment and a founding member of Climate Action 100+, Cbus understands the importance of a just transition." - Kristian Fok, Chief Investment Officer, Cbus

The Investor Agenda was developed by seven partner organisations that intend to produce an annual report on the actions investors have taken and the outcomes achieved.

Full media release by The Investor Agenda available here.

## Climate Week in NYC

The GCAS's East Coast counterpart – Climate Week NYC 2018 – was held in New York in September.

Climate Week 2018 is in its 10th year, and is the leading international forum for politicians, nongovernmental organisations (NGOs), activists and policymakers to share climate-related strategies and successes with like-minded people.

The event is organised every year by The Climate Group, in coordination with the UN and the City of New York.

"Climate Week NYC is proving to be a powerful force to encourage those in positions of power to do the right thing, so that we can all make the personal choices needed to tackle climate change." - Helen Clarkson, CEO of The Climate Group

There were more than 150 events planned during the summit, including discussions, museum tours and documentary screenings. Climate Week NYC also wanted to promote some of the most accessible steps that companies can take to combat climate action. Businesses who wanted to support Climate Week NYC were asked to donate to support the week and provide details on what they are doing to support climate action. In return, Climate Change NYC provided a window decal to showcase their involvement and supported them through social media.

Celsious is the first business to support Climate Week NYC as part of a new initiative to get New Yorkers involved. They helped highlight ways to lower environmental impacts by promoting eco-friendly laundry habits at their laundromat.


Climate Week NYC also launched the 10 Things campaign, encouraging people to share their thoughts with the #10Things hashtag all over social media. These 10 things covered sustainable tourism, fashion, food, water, plastic, health plus other ways to get involved.

## UNEP PSI

The (UNEP) United Nations Environment Programme launched a PSI (Principles for Sustainable Insurance) Initiative in 2012. The UNEP is the largest collaborative initiative between the UN and the insurance industry. Its goal is to encourage greater integration of ESG issues into insurance.

- 16 insurers and reinsurers across the globe have confirmed their participation in the pilot group to date.
- The pilot group will remain open to additional members until mid-October.
- Public announcement of the pilot group through a UN press release is slated for the end of October.
- The first in-person meeting of the pilot group will take place on 28 November 2018 in Paris, during the UNEP FI Global Roundtable and 4th Climate Finance Day (26-28 Nov).

## Would you like to know more?

Recent climate change articles published by members of the Climate Change Working Group:

- *Climate Change Blog – September 2018 by David Hudson* https://www.actuaries.digital/2018/09/27/climate-change-blog-september-2018/
- *Climate Change Blog – August 2018 by David Hudson* https://www.actuaries.digital/2018/08/29/climate-change-blog-august-2018/
- *Climate Change Blog – July 2018 by Evelyn Yong* https://www.actuaries.digital/2018/07/20/climate-change-blog-july-2018/
- *Climate Change Disclosure – Financial Institutions Feel the Heat by Sharanjit Paddam and Stephanie Wong* https://actuaries.asn.au/Library/Miscellaneous/2017/TheDialogue3ClimateRiskWEB.pdf
- *Climate Related Financial Disclosures: The Way Forward? by Wayne Kenafacke.* https://www.actuaries.digital/2017/03/31/climate-related-financial-disclosures-the-way-forward/
- *An Overview of the Actuaries Climate Index by David Hudson* https://www.actuaries.digital/2017/02/09/an-overview-of-the-actuaries-climate-index/
- *Climate Risk Management for Financial Institutions by Sharanjit Paddam, Stephanie Wong and Alison Drill* https://www.actuaries.digital/2017/01/31/climate-risk-management-for-financial-institutions/
- *TCFD Webinar: Climate Leadership – How to Support the TCFD* https://www.fsb-tcfd.org/event/webinar-climate-leadership-support-tcfd/#


# Geospatial Analysis and Data Science - Actuaries Podcast

By Jacky Poon

Reading time: 3 mins

*Head of Actuarial and Analytics at World Nomads, Jacky Poon interviews Andrew Xu, Actuary at Finity Consulting, on his entry into the Weapons of Mass Deduction video competition that focused on cutting edge geospatial analysis techniques.*

Andrew created an impressive entry that incorporated animation, Google Maps street view and motion graphics to explain the importance of geospatial analysis and how it is used by actuaries for geographical models.

He is one of the Top 3 entrants along with Minh Phan and Queenie Chow who created entries on CatBoost and open source data respectively.

Listen to "Geospatial Analysis and Data Science - Weapons of Mass Deduction" on Spreaker.

Listen on Apple Podcasts

Listen on CastBox

Jacky and Andrew touch on the wider aspects of geospatial analysis, including it's changing application over the years, and how Andrew uses different analysis tools and techniques, including in R, which he learned in his current role at Finity:

**"Even though I didn't know how to use R, [Finity] put me on [those projects] and decided to teach me how to do these different things " – Andrew Xu**

Jacky asks a range of question including:

- How are you feeling about the [competition winner] announcement?
- Tell me a bit about yourself?
- Tell me about your hobby [in video production]?
- How did you get into R for analysis?
- What other areas have you applied R in?
- What lead you to choose geospatial analysis as your topic?
- How would you begin to do geospatial analysis?
- Where do you see the edge for actuaries as data analysts?

**"What makes a great data analyst actuary is a lot of enthusiasm... if they're really enthusiastic about learning all the new models... really diving into the data and pulling out those insights, they'll do really well." – Andrew Xu**

The winner of the Weapons of Mass Deduction (WOMD) competition will be announced this week at the opening of the 2018 Data Analytics Seminar!

Watch:

- Andrew Xu's amazingly animated introduction Geospatial Analysis
- Minh Phan's entertaining CatBoost clip feat. T Swizzle and Pusheen
- Queenie Chow's open source data video feat. *Where's Wally* and micro-insurance

and view all the WOMD shortlisted entries.

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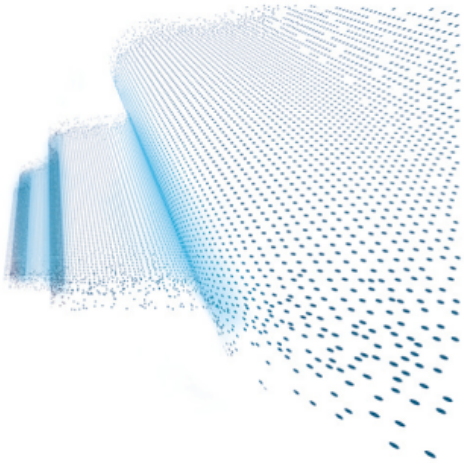


# Data Analytics Seminar

## Reinvigorating the Usual

31 October 2018 • Actuaries Institute, Sydney

View the Seminar Program Snapshot and register to attend or view the webinar!


# The Future of Life Insurance

By Marc Mer *(marcmer01@gmail.com)*

Reading time: 5 mins

*The world is constantly evolving and changing, and that includes the insurance industry. What are these trends, what does this mean for insurers and actuaries alike, and what do we need to be aware of when relying on "robots"?*

On the 27th September 2018, the Actuaries Institute held an Insights Session in Sydney to provide perspectives of what the future of life insurance might look like, and how the industry (and we working in it) must evolve in order to facilitate this transition and mitigate the risk of being left behind. The presenters in this session were Tetiana Maier from Oliver Wyman, Marc Mer & Kranthi Ram Nekkalapu from Deloitte and Catherine Edgar from Montoux. Marc Mer reports on the key ideas presented.

## Future trend of insurance

Tetiana set the scene for the broader topic by emphasising that while the future is uncertain, the foundations for change are already established. However, the life industry has unfortunately lagged behind other industries in taking advantage of this opportunity. Trends in technology, regulation, human behaviour, society and the economy are all shaping industries. Technology has already changed everything, such as how we see the world, what we learn and how we live. This will impact the life insurance industry mainly through:

1. Shifts in the risk profile (who/what is insured and how they are insured);
2. Changing nature of the workforce (ageing populations, automation and the rise of the gig economy are changing both the insurance workforce as well as the need for protection); and
3. The rise of new competitors (the industry that some may say has been unchallenged for so long is being disrupted, largely thanks to advances in technology / InsureTechs).

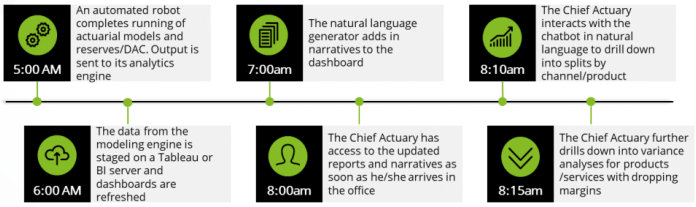
These shifts raise questions for insurers as to how they adapt their business models and protect their existence; whether it be an emphasis on being data driven or a technology company, or a more traditional emphasis on technical product development and underwriting. Either way a deeper focus on customer engagement is likely required.

## The actuary of the future

Marc built on Tatiana's platform of unprecedented change and opportunity in the midst of what he described as the Fourth Industrial Revolution. He highlighted a range of key disruptors that provide a burning platform for change, and then laid out the framework for the future of work across many industries and professions (covering what work we will do, who will do the work and where the work will be done). These disruptors have noticeably changed blue-collar jobs (replacing assembly lines with assembly machines), yet a white-collar office still looks largely the same as it did many years ago. Marc shared an image of what an actuary of the future – the "Exponential Actuary" – might look like at work, with humans and machines directly interacting.

There are a number of challenges that the insurance industry is facing (e.g. outdated systems, data constraints, emerging regulations, actuaries performing IT roles, etc), driving the need for actuaries to shift their focus from the operational into the more strategic activities. Actuaries need to adopt exponential technologies to become so-called exponential actuaries, automating or returning technology tasks back to IT, thus being in a position to proactively work on results and analysis and to support the development of insights-driven insurers.

Marc showed the audience what an actuarial process might look like a few years from now (shown below), highlighting that all of the technology to do this is already here:



The shift in our work as actuaries will be towards higher cognitive and value-add activities. Today, some actuaries with substantial professional training and education focus a large proportion of their effort and time on lower cognitive areas. These are tedious, time consuming, and low cognitive. In future, more actuaries will release themselves from this operational low cognitive work, automating more of the computation work and spreading out our focus to the real value-added work (eg. ideation / hypothesizing, and application and decision-making), requiring a different level of skills.

## The life insurer of the future

With the image of the future painted by Tetiana and Marc, Catherine shifted the conversation to the roadblocks the life insurance industry faces in getting there. As the industry continues to face significant headwinds in a number of areas (including sluggish growth and poor profitability), major challenges especially surround the customer:

- lack of customer centricity (in particular regarding product choice, purchase process, claims process)
- lack of knowledge/direct relationships with customers
- poor customer experience and therefore loyalty (further brought to light during the Royal Commission)
- changing customer expectations

Leveraging technological advancements and focussing on customer centricity can be game-changing and help insurers disrupt and transform these core challenges. The customer experience of the future is one that would always meet your insurance needs, help you get healthier, accept your risks and meet your budget. Having a customer experience that is streamlined, efficient, responsive and personalised should ultimately increase market penetration and retention.

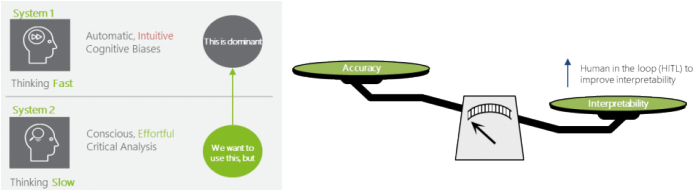
Although the barriers to change for traditional insurers are manifold, change is already here and there is innovation happening in parts of the world. Companies such as Haven Life, ZhongAn Insurance and Lemonade embrace the technological "future" and serve as examples of where insurance companies could be heading.

In summary, the hypothesis is that the life insurer of the future is a customer-centric technology company with the capability to greatly outperform traditional life insurance companies. If we believe this to be the case, what does this mean for life insurers today and how do they move forward to face this challenge?

## Advanced analytics to solve insurance problems

Kranthi brought the discussion home by sharing insights into how life actuaries can utilise algorithms to solve the problems presented by Catherine and the other speakers. Equally, algorithms can be black boxes and biased depending on the training sets provided. Thus, the use of interpretable algorithms is key to producing meaningful and unbiased results. Actuaries must be able to understand why an algorithm has accepted or rejected a decision. Putting a human in this loop and ensuring interpretability is key to help users develop trust in models.

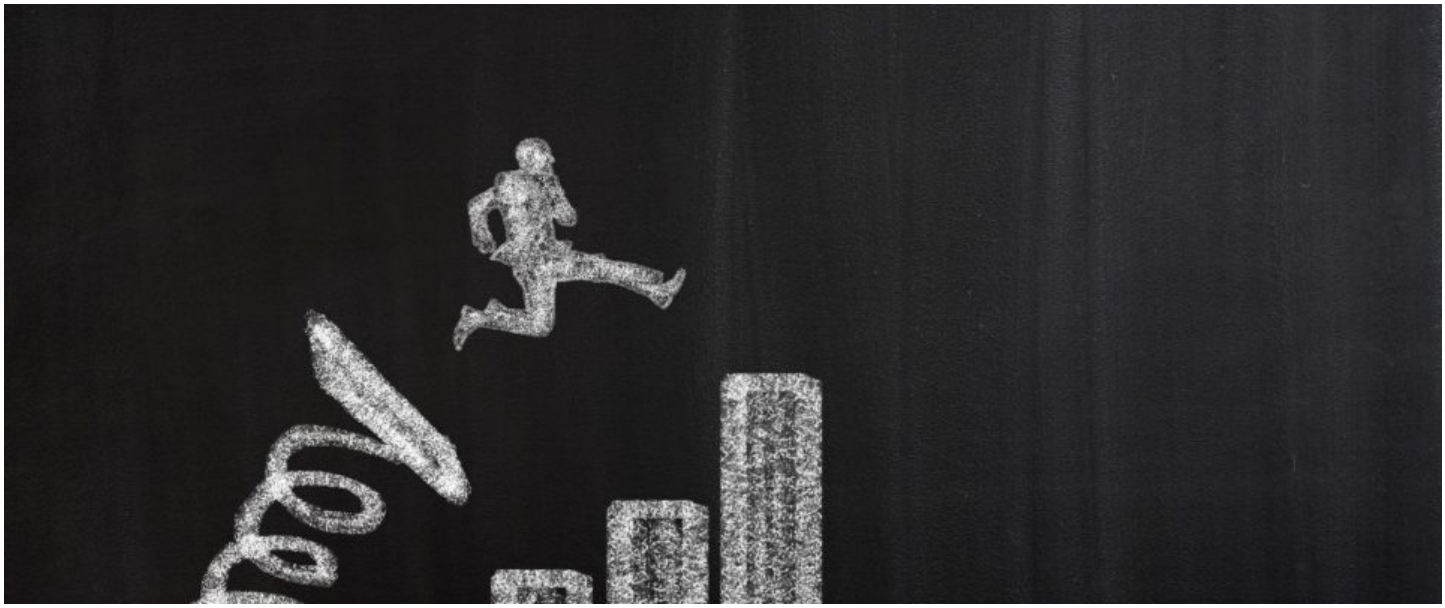
Adding a further dimension, there is a trade-off required between accuracy and interpretability, as it is difficult to build algorithms with both these qualities. As an example, in most situations non-linear models provide better predictions than linear models; although the same cannot be said about their interpretability. So, there is a trade-off between accuracy and interpretability when choosing the right model.




Source: Deloitte

Kranthi synthesized that humans are intuitive beings and explanations come more naturally to us compared to complex calculations (taking inspiration from Dan Kahneman's two systems in his book "Thinking Fast and Slow"). There is therefore a strong inclination towards using machines to build accurate algorithms with approximate explanations, and letting humans make a call on the performance of the algorithm. There could be exceptions, but this approach can be applied to most problems.

While technology is a significant driver of potential disruption, if we harness it properly, we can co-exist with machines to create the actuary of the future and the life insurer of the future.



# Designing Life Insurance Products for Increasing Consumer Expectations

By Melissa Yeoh

Reading time: 3 mins

Melissa Yeoh reports on the recent "Designing Life Insurance Products for Increasing Consumer Expectations" Insights session which discussed current issues and implications for Life Insurance product design, including the legal perspective and considered how the industry could restore the imbalance between consumer and insurer.

Over the course of the recent year, the life insurance industry has come under increasing regulatory and media scrutiny. A key theme emerging is that products are not performing to consumer expectations, with the balance tipped in favour of the insurer. The industry now faces the challenge of addressing and restoring the imbalance between consumer and industry

An Insights event "Designing Life Insurance Products for Increasing Consumer Expectations" was held at the Actuaries Institute in Sydney on 17 October, with Elizabeth Baker (Directory Advisory at EY) leading the discussion, along with Dale Jackson (Associate Director Advisory at EY) and Darryl Pereira (Partner in the Insurance and Financial Services team, TurksLegal).

The session discussed the background of events leading to the current situation with Dale recapping the numerous investigations into the industry that have led to a string of findings such as the Parliamentary Inquiry report, the proposed Federal Budget changes for Insurance in Super, the ASIC 587 Direct Life report and most recently the Royal Commission hearings.

The policy questions arising from the Royal Commission Round 6 hearings were summarised into the following key themes:

- Low value products
- Unreasonable exclusions
- Out of date legacy definitions
- Confusion over default coverage
- Confusion over claim thresholds
- Imbalance in rights / obligations and lack of transparency

Insurers need to question the drivers underlying these themes that have led the industry to where it is today.

Dale referenced an article[1] that posed the following 10 questions a customer should be able to answer about their life insurance:

1. Are you paying for multiple life insurance policies?
2. Do your premium costs align with your cover?
3. What is covered?
4. What is excluded?
5. Is there a risk loading?
6. What do income protection and trauma insurance cover?
7. How much life insurance do you need?
8. What does TPD cover?
9. Insurance default schemes – do they meet your needs?
10. When should cover be reviewed?

The nature of the questions suggest consumer understanding is low and that this further drives the gap between expectations and reality.

These findings mean the **accountability to design products that are suitable to the customers who are sold them is greater than ever**. With further legislative proposals being put forward and placing further constraints e.g. limiting access to medical information at time of underwriting and claims assessment, it is imperative that product changes occur to ensure sustainability.

## The legal perspective

Darryl continued the discussion by sharing a legal perspective on life insurance product design. The legislative changes **focus on member value and the misalignment between actual cover and perceived cover** that result in "illusory" cover.

Regulators are also considering member value through the prism of inherent restrictions on cover. Examples of current restrictions which are not always known or understood include TPD cover definition flip, Limited Cover, IP deeming clauses, end

of cover provisions due to insufficient account balances and offset provisions.

The speakers also noted that the current opinion based TPD definition has the highest rate of disputes amongst all benefit types and courts often place significant scrutiny on the insurer's decision process.

Other notable legislative updates include the proposal to extend unfair contract terms protection to insurance contracts, the introduction of the Design and Distribution Obligations Bill and a Parliamentary Inquiry into allowing life insurers to fund rehabilitation.

## Product design in life insurance

Elizabeth proceeded to share some approaches to improve the balance of life insurance product design, where the aim is to promote better consumer decision making around insurance cover.

Principles to consider when designing life insurance product should include:

1. The product itself (should meet consumer needs and not be overly complex).
2. Product level metrics (should be reasonable and not too high / low).
3. Individual benefit levels (should meet consumer needs and not be overly complex).
4. Data (should support pricing, product features and any exclusions).
5. Product features and eligibility (need to be clear and not create confusion).
6. Product exclusions (must be necessary and reasonable).
7. Pricing factors (should be reasonable now and into the future).
8. Claims (should produce consistent customer outcomes across the customer segments).

## Taking up the challenge

The audience were challenged on long standing practices and to think about product design and pricing from the bottom up.

A **customer and insurer "value exchange" framework** was also suggested. Under this framework, the various attributes of a product are assessed and then classified as either meeting, marginal or not meeting customer expectations. Using this framework, the insurer can then determine and agree action items to address areas that do not meet customer expectations.

The life insurance industry has recognised the need to improve awareness and value to customers and initial steps have been taken such as the implementation of the Voluntary Code of Practice. However, as customer expectations continue to grow and evolve, the challenge remains for insurers to re-evaluate existing products by placing a customer lens over the end-to-end process of product design. To do this, a shift in mindset is required from "what can be done" to "what should be done".

[1] Source: Australian Financial Review 21 September 2018 Duncan Hughes: "Ten questions that could save your life (insurance)"

# The Role of Actuaries in Claims Management - Actuaries Podcast

By Angat Sandhu and Katherine Gobbi

Reading time: 2 mins

Angat Sandhu interviews Katherine Gobbi, CEO of EMLife, on the role of actuaries in claims management, and key trends in technology and serving customers.

Katheirne Gobbi leads a team of life insurance claims specialists dedicated to making life easier for insurance partners and their customers. She met with Angat Sandhu on September 19 to discuss current issues in claims management, scrutiny of life insurance and what improvements are needed.

Listen to "The Role of Actuaries in Claims Management" on Spreaker.

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Kath acknowledges the importance of investment in technology to better empower consumers and claims managers in creating an understanding environment while minimising administration work:

"We've seen all of our clients invest significant amounts to better empower both the customer in their navigation of the claim but also the claims managers and from our perspective, the environment you create for your case managers is then the environment they create for your customer". – Kath Gobbi

Angat asks a range of question including;

- What are the most important trends you are seeing in claims management?
- What is most important from a customer's perspective?
- There has been a fair bit of scrutiny on claims practices recently, what are some takeaways for the insurance industry?
- If there is one thing that will be different about claims management over the next 2-3 years, what do you think it will be?
- How can actuaries play a greater role in improving claims management processes?

Kath acknowledges that more needs to be done to achieve better methods around increasing recovery time:

"this approach ... considers the person in their environment, the psychological impact of injury or disability, but also the psychological challenges and stresses that we're all carrying day to day". – Kath Gobbi

*Kath has over 15 years of experience in personal injury claims management and working with regulatory bodies.*

Kath discusses how actuaries can validate and refute data to better understand patterns in biopsychosocial behaviour and how strong social interactions and networks increase the likelihood of a faster recovery.

"those who have strong social networks are those who are more resilient, and more likely to recover. We're trained to understand those bio-psychosocial barriers to recovery". – Kath Gobbi

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# The Critical Line – Volume 25

By Oliver Chambers *(o.chambers2@gmail.com)*

Reading time: 1 minute

Oliver Chambers delivers this months puzzle challenge - A Rational Sequence.

A sequence $\{\alpha_0, \alpha_1, \alpha_2 \cdots\}$ is defined such that $\alpha_{n+1} = \alpha_n + \frac{1}{\lfloor \alpha_n \rfloor}$, for all $n \geq 1$, where $\lfloor x \rfloor$ denotes the greatest integer less than or equal to $x$.

a) If $\alpha_0 = \frac{43}{11}$, what is the smallest $k$ such that $\alpha_k$ is an integer? (computers allowed)

b) Show that if $\alpha_0$ is rational and $\alpha_0 > 1$ then the sequence must contain an integer.

## Volume 24 Solution

The winner for this edition is Neil Jain, well done Neil! The solution is below:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 B | E | 2 W | I | N | D | I | N | G | X | I | T |
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| N | G | E | 4 R | 5 M | E | A | N | Z | 6/7 N | W | O |
| U | L | I | W | 8 T | N | E | D | Z | O | K | R |
| 9 J | E | 10/11 S | N | A | R | R | 12 P | U | D | D | 13 L |
| N | A | 14 T | | K | L | Y | E | 15/16/17 M | N | I | E |
| G | L | E | 18 W | E | B | S | S | H | G | D | A |

# The view from a start-up perspective: Is competition broken? How can it be fixed?

By John Connor

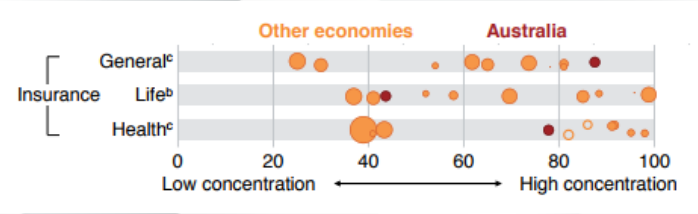
Reading time: 4 mins

Insurtech, fintech and disruptor are the new buzz words. Ask me a few years ago what these words meant, I would have pictured a mix of bohemian tech-savvy hipsters in a trendy office, a place not for the traditional actuary. I was wrong, there are many actuaries working in fintech and insurtech start-ups.

Viewing the insurance industry from a start-up perspective, I have had an unconventional insight into the challenges associated with entering the insurance industry. Barriers to entry have resulted in an ever more concentrated industry, damaging innovation and increasing premiums. It is evident that clear changes are needed to increase competition.

## How does Australia compare to the rest of the world?

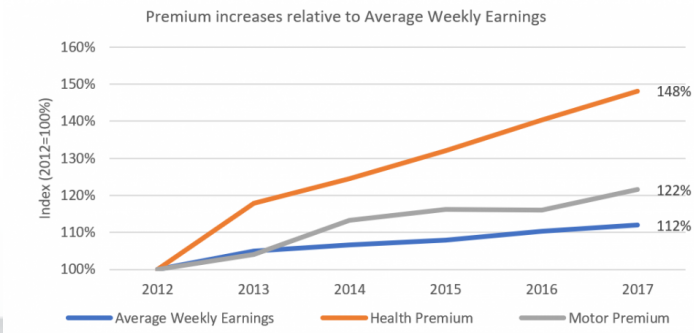
When compared to other OECD[i] countries, Australia has one of the most concentrated insurance industries globally, particularly in general insurance. The general insurance industry is highly concentrated among 4 main licence holders (IAG, AAI, QBE and Allianz) with 73%[ii] of gross earned premium in 2017-2018. Furthermore, the number of licensed insurers has fallen in recent years with a net decline of 25 over the past decade[iii].




Notes: Bubbles typically represent OECD economies or large US state economies.
Bubble size represents population. b: 4-firm; c: 5-firm. Unshaded bubbles mean that fewer firms are represented

## Prices keep rising

A lack of competition has likely contributed to premium increases. Premiums have increased at a faster rate than average weekly earnings and for some products this trend is accelerating. According to the Australian Prudential Regulatory Authority (APRA) private hospital cover in Australia in 2017 fell to its lowest level in five years[iv], policyholders are dropping out and choosing not to be insured.




Source: Motor Premium Growth: Insurance Council of Australia, AWE: Australia Bureau of Statistics (Series ID: A84998735A), Health Premium Growth: www.health.gov

## The side effects of reduced competition

As prices rise, there are two options, keep paying or be uninsured. 55%[v] of the world's population is uninsured and domestically, the Insurance Council of Australia (ICA)[vi] estimates that 29% of homes do not have contents insurance and 3.8% do not have buildings insurance. More alarming is that people who are more likely to be uninsured are those most vulnerable to financial loss. The Australian Council of Social

Service found more than half the adults on Newstart Allowance and Parenting Payment lacked contents insurance[vii].

The lack of competition is a serious problem in Northern Australia. The Australian Government has directed the ACCC[viii] to conduct a wide-ranging inquiry into the supply of home, contents and strata insurance in Northern Australia. The goal is to help address concerns about insurance availability and affordability and promote a more competitive insurance market.

## Regulatory reform is needed

Attempts to help innovation and competition through introducing regulatory sandboxes have not been fully realised. In 2017, the Australian Securities and Investments Commission (ASIC) issued Regulatory Guide 257[ix], to help start-ups test products. Unfortunately, the relief for general insurance only applies to home contents insurance, personal and domestic insurance products. Major markets such as motor have been excluded and each individual insurance contract needs to have a sum insured less than $50,000 and a portfolio total exposure less than $5m. This gives (assuming $20,000 on each contract) a maximum of 250 customers, not enough to have a statistically robust sample and recover development costs. The sum insured does not consider potential reinsurance which could mitigate the exposure. Furthermore, the ASIC sandbox only relates to the *distribution* of products with the full prudential regime applying to all products sold through the sandbox provisions. This hardly facilitates a small trial from a new start company when that company still needs to meet the hefty prudential criteria (and lead times).

APRA's Prudential Standards should be reviewed to encourage innovation. Firstly, APRA's minimum prescribed capital amount of $5m for a new general insurer is not appropriate for start-ups. For example, is $5m a suitable prescribed capital amount for a start-up selling an insurance product to 100 policyholders with a total exposure of $100,000? Secondly, the siloed approach to licensing is problematic. A new entrant needs 3 licences to sell a combined product with health, life and general insurance benefits. Thirdly, operational risk is distorted by levies and not suitable for start-ups offering products with a duration less than 12 months. APRA could leverage from the changes adopted in the European Union under Solvency II. The Prudential Regulatory Authority in the UK has recently established a new insurer start-up unit[x] following concerns that regulatory barriers have created an impossible task for start-ups to enter the market. Could APRA do the same?

## Sharing data will increase competition

In 2017, Scott Morrison when treasurer, mandated comprehensive credit reporting for major banks to increase competition and reduce fraud in the system. There is no such general insurance industry data sharing equivalent. The general insurance industry does have a claims database through the Insurance Reference Service Limited (IRS) however, the IRS is a member-based organisation. Membership to the IRS requires membership to the ICA. The Board of the ICA, comprising of executives of the large incumbents, votes on the acceptance of new members, creating another barrier.

The insurance industry would benefit from an open-access claims database and blockchain technology could be used to create such a database with ease.

## We will all benefit from change

Whilst I have highlighted some barriers, the Royal Commission will likely highlight more barriers and lead to change which will make insurance fairer for everyone. Start-ups entering the market facilitate innovation, bring new products and put downward pressure on prices. This will benefit us all and we should all be advocates for change.

References

[i] Organisation for Economic Co-operation and Development

[ii] APRA, Quarterly General Insurance Institution-level Statistics June 2018 (August 2018), https://www.apra.gov.au/sites/default/files/0818-qgiils-june-2018-database.xlsx

[iii] Australian Prudential Regulation Authority (APRA), Annual Report 2015–16, p. 24.

[iv] ABC news - Private health insurance 'junk' policies ripping Australians off, AMA says, 21st August 2017

[v] 6/2010 Microinsurance – Risk protection for 4 billion people, Swiss Re

[vi] Analysis of demand for home and contents insurance – Insurance Council of Australia: 4th August 2015

[vii] ACOSS 2008, Who is missing out? Hardship among low income Australians, p. 20.

[viii] Australian Competition and Consumer Commission

[ix] RG257 "Testing fintech products and services without holding an AFS or credit licence", https://asic.gov.au/regulatory-resources/find-a-document/regulatory-guides/rg-257-testing-fintech-products-and-services-without-holding-an-afs-or-credit-licence

[x] https://www.bankofengland.co.uk/prudential-regulation/new-insurer-start-up-unit

# Ethical challenges of Artificial Intelligence (AI)

By Attracta Lagan

Reading time: 6 mins

Artificial Intelligence (AI) has been described as the 4th Industrial Revolution. Here, Dr Attracta Lagan, leading Australian business ethicist and advisor to Boards and CEO's, explores some of AI's ethical challenges.

From smart phones to smart cars, AI (Artificial Intelligence) is shaping every aspect of our lives. It is changing everything about the way we relate to each other, how we work, and understand our world.

The rapid progress being achieved in AI means that super intelligent machines, where machines will learn to write code for themselves, is now anticipated as the next development. Because of its potential large-scale impact, machine learning has been described as humankind's fourth industrial revolution and is currently having the greatest impacts in employment, workplace redesign, education, transportation, healthcare, public safety and security, the military and our entertainment areas. Just as digital technologies have already reshaped our societies, machine learning will accelerate these social changes. In fact, AI is being likened to the advent of the Internet in just how far and wide it will disrupt the status quo.

It is the emergence of efficient and smarter machine learning tools, the core algorithms through which AI systems develop their intelligence, that is making the advancement of the use of AI and its social impacts such an urgent ethical issue to be considered by businesses. These tools are being used across a range of applications, such as chatbots to perform increasingly sophisticated customer interaction tasks by combining machine learning, natural language processing, and speech generation.

Most people are largely accepting of AI and its applications because it appears to be making their lives easier. Benefits range from the convenience of smart phones and virtual assistants, ready access to information from search engines, and service assistance from AI-powered devices in the home such as Amazon's Alexa, Apple's Home kit and Google Home.

In our education and healthcare areas, powerful applications have enabled research and medical breakthroughs that have enhanced our physical quality of life and extended our lives in pain-free ways. In workplaces it's in the form of analytical tools enabling predictive modelling to anticipate future customer behaviours as well as the use of algorithms to remove repetitive tasks. Accounting software, for example, is getting more intelligent, performing automation as well as analysis previously done by humans. Some accounting practices are starting to implement advanced technology to simplify operations. Benefits include time savings, minimizing costs, boosting productivity and providing better accuracy.



The potential downsides to these technologies include risks to personal privacy, risks to employability, data security and the potential for social reengineering regarding how we relate to each other. For the moment, there are no commonly agreed policies or accountability frameworks, yet, in the last two years, we have seen widespread use of drones, fingerprint technology, facial recognition, driverless cars and other significant AI breakthroughs that raise serious ethical issues about their social impacts.

The unknown mechanics of exactly how algorithms work and our inability to predict their macro social impacts is a key ethical concern. The rise of fake news created by bots and its distribution along with hate speech on platforms such as YouTube, Twitter, Facebook and Instagram, and the manipulation of data to interfere with political elections and referenda has undermined public trust in the integrity of our major political institutions and increased anxiety around who can be believed and trusted. The accompanying "low trust

world" that has been spawned is promoting societal fear and insecurity as well as redrawing the boundaries between generations and nations.

The absence of regulations and the current commoditisation, marketing and trafficking of personal data around the globe, and how this enables data users to manipulate people's attitudes and behaviours, is an ever growing worldwide ethical concern.

The rise of cybercrime, cyberbullying and curated pornography are amongst the dark forces that have already been released by AI technological advances. However, it is the very real potential for AI to totally reshape our existing social landscapes as well as our economic order that brings serious ethical challenges.

**Professional Accountability in an AI world**

Even though a new world of AI powered applications is being forged, the fundamental ethical standards for professionals around integrity, duty of care, confidentiality and competency remain the same. It will be the professional's ability to ask and address the right questions around AI that will enable ethical standards to be maintained. Increasing flows of data will also come with increased ethical accountabilities around its integrity, ownership, management, transparency, storage and removal. Retaining trust in the professions will become even more important in an AI world where the "black box" nature of algorithms poses significant challenges around who can be trusted.

Ethical concerns also revolve around the potential biases of AI designers and coders. Women and ethnic minorities, are greatly under-represented in the coding arena; will this result in a gender or ethnic bias in how AI reaches its recommendations? Failure to design to purposely challenge and remediate potential biases might deepen existing social divisions and concentrate AI benefits unequally among different sections of society.

The good news is that there are several initiatives underway exploring how a governance regime might be put in place to guide AI's ongoing development. Leading the way is the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems, which involves several hundred participants from six continents. These thought leaders from academia, industry, policy and government aim to find consensus on the development of ethical principles for AI. The UK's House of Lords has also released a guiding set of principles, Both sets of principles emphasise the importance of protecting human well-being and ensuring full transparency and accountability. The European Commission has also put the first major brake on how personal data can be exploited. It has passed legislation reinforcing the principle that everyone has the right to the protection of personal data.

A universal concern is the disruption in jobs that will affect almost every sector of the economy. The OECD predicts around 66 million jobs globally are at risk of automation from AI and robotics. It is AI's capacity to force large scale workforce redesigns and employee redundancies that necessitates an immediate rethink of the ethical obligations business has towards current and future generations of employees, its role in informing employees and their representatives about the likely impacts of the new technologies, and how it can promote the new skills necessary to keep people employable in an AI-powered economy.

As we saw in other developed economies such as Singapore and Ireland in the later part of the 20th century, providing the skills for the new machine economy to make people employable is key to humans thriving.

AI offers the promise of tremendous productivity gains; how this machine-created, newfound wealth can be shared is one of its major ethical challenges. If AI is to bring about enormous savings as well as leaps in productivity as is predicted, how will these savings be fairly shared in a society. Will it be winners take all or will we recognize that losers need to have some sort of compensation? Do business leaders have an ethical accountability to make provisions for the social and economic hardships that may accompany their adoption of AI technologies?

These profound social impacts for the future of humanity that accompany business' embrace of new technologies have ethical considerations at their core. Already, for example, there is emerging public debate around the need to provide a universal wage when jobs disappear and whose responsibility this might be.

A guiding principle such as that suggested by the UK House of Lords is that AI should operate on principles of intelligibility and fairness. It is the sort of guiding ethical principle the professionals might consider. The high-profile loss of public trust in the Facebook brand following its failure to protect its users' personal data has forewarned others that AI is not ethically neutral. Rather, it demands a much higher level of public transparency because its impacts are so far reaching.

Businesses will need to have an AI ethics code or have refreshed existing governance protocols to outline what the machine is expected to do as well as its limitations. Ideally these should be shared with customers, so they can make informed choices about who they are doing business with. To reassure those affected, AI algorithms will need to be designed so that they can be reviewed by a third party to avoid manipulation or bias. Duty of care accountabilities will mean that AI managers must act proactively to ensure possible adverse impacts can be identified before they become a problem for the organisation or its clients.

AI is not here to replace us. It augments our abilities, enabling us to achieve greater efficiencies and to step up to higher levels of performance. However, its potential benefits for all can only be realized if we take the time now to consider and include the ethical accountabilities that comes with AI at every stage from design to implementation and review.

**This is an edited version of a research paper conducted and written by the author on behalf of ICAA into the ethical issues accompanying the advent of AI.**

# How to be an LGBTIQ ally in the workplace

By Mark Baxter

Reading time: 2 mins

Actuary and Risk Management Executive Mark Baxter highlights the significant number of LGBTIQ people who are still uncomfortable 'coming out' at work and the importance of an inclusive culture that includes 'allys' and rethinking of straight assumptions.

During 2017 there was a resounding 'Yes' to the Same Sex Marriage postal survey and you would be forgiven for thinking that not much more needs to be done for the LGBTIQ+ community. However, recently released research by the Diversity Council of Australia reveals that only 32% of LGBTIQ+ people are out to everyone at work and a further 38% are out to most people at work – there is still a significant number of LGBTIQ+ people who are uncomfortable in coming out at work.

We are always 'coming out' which highlights the importance of inclusive cultures. New colleagues, new customers, new work teams all make straight assumptions - and we are constantly coming out.

I remember the angst I had in deciding whether or not to make my sexuality clear on my LinkedIn profile – I'm very happy that I now have.

The research also shows that inclusive cultures make great business sense with more innovation, high service standards and high effectiveness. With these benefits what can be done to make a culture more inclusive for LGBTIQ+ people?

While visible LGBTIQ+ role models are very important, inclusion does not work if it's just us. We really appreciate and need our allies both male and female. I am often the 'only gay in the village' on executive teams and the support of allies is critical in the development of an inclusive culture.

Allies come into their own when they support LGBTIQ+ initiatives, call out unacceptable language and behaviour and check in with their LGBTIQ+ peers during difficult periods. I have a special place in my heart for the colleagues who reached out to me during the Same Sex Marriage campaign in 2017 as some of the 'debate' had a visceral impact on me.

We can't do all the work on inclusion and we need the help of the majority in creating an inclusive culture. It can often be exhausting to be constantly rolled out for LGBTIQ+ initiatives at work and it is great when allies participate wholeheartedly and authentically. So please, for the straight majority amongst you make sure you become an ally!

**Mark was one of Deloitte's Outstanding 50 LGBTI Leaders of 2018. In this Actuaries Digital article he talks more about mentoring, visibility and LGBTIQ inclusion.**


# A new look website for Actuaries Digital is set to launch next month

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

Reading time: 1 minute

The refreshed site will feature enhanced functionality, with new sections for featured content, articles by industry and improved video and podcast viewing design.

We look forward to sharing the site with you and hearing your feedback!

# APRA Chairman Wayne Byres' speech on professionalism in financial services

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

Reading time: 2 mins

APRA Chairman Wayne Byres' speech "Good banking, by good bankers" is an important call to financial services professionals to heed the lessons of the Royal Commission and improve the professionalism in the industry.

The Australian Prudential Regulation Authority (APRA) has today released a speech by Chairman Wayne Byres calling for greater professionalism in Australia's financial services sector.

Speaking at the Finsia Summit 2018, Mr Byres discussed the need for better decision-making at all levels of financial institutions, including a stronger commitment to ethical behaviour and the public good.

Mr Byres' comments included:

- "None of the industries APRA regulates is a profession: there is no defined body of knowledge or high entry standards for those who perform key roles. Where codes of conduct exist, they are often totally voluntary. And on the evidence before the Royal Commission, the balance between self-interest, company interest and serving the community's interest has not always been appropriately struck."
- "The Royal Commission has suggested, amongst other things, that regulators can and should do more to actively enforce standards of behaviour within the financial sector, and punish those who breach them. Based on what has been revealed, that is a quite reasonable conclusion to reach. Consistent with prudential supervisors around the world, APRA has traditionally examined cases of poor conduct as an indicator of risk, but not a direct prudential risk in and of itself, unless it was likely to jeopardise the stability of the system or an individual institution. We will clearly need to reflect on that approach."
- "Professional standards would identify individuals as having appropriate skills and experience. They would ensure on-going professional development, so that individuals remained competent in an ever-changing world. They would include a mechanism for counselling and, if necessary, disciplining individuals who do not uphold competency and behavioural standards. And most importantly, they would help bring a greater balance to decision-making by providing an ethical dimension to offset short-term personal and commercial interests."
- "The Australian financial system remains financially sound … however, it does not make the Commission's Interim Report any less confronting or uncomfortable to read. The report raises serious questions and issues for the financial industry, regulators and policymakers to contemplate, and the Commission will inevitably change many elements of the way institutions currently operate, as well as the way they are regulated. As much as the industry, and those of us associated with it, are feeling the intense glare of the Commission's scrutiny …. the Royal Commission will ultimately be positive for the industry, as well as consumers."

**The full speech can be found on APRA's website here.**

Members are aware that Royal Commissioner Hayne has delivered an interim report of findings on September 28. This report does not cover insurance or superannuation matters which will be included in the final report, scheduled for release on 1 February 2019. Read John McLenaghan's article outlining this here.

# The Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry.

By John McLenaghan *(john.mclenaghan@actuaries.asn.au)*

Reading time: 3 mins

Members are aware that Royal Commissioner Hayne has delivered an interim report of findings on September 28. This report does not cover insurance or superannuation matters which will be included in the final report, scheduled for release on 1 February 2019.

The Commission's Terms of Reference specified that it must inquire into the following matters;

1. *the nature, extent and effect of misconduct by a financial services entity (including by its directors, officers or employees, or by anyone acting on its behalf);*
2. *any conduct, practices, behaviour or business activity by a financial services entity that falls below community standards and expectations;*

*Significantly, misconduct includes conduct that:*

1. *constitutes an offence against a Commonwealth, State or Territory law in relation to the provision of a financial service, as existed at the time of the alleged misconduct; or*
2. *is misleading and/or deceptive; or*
3. *indicates a breach of trust or duty or unconscionable conduct; or*
4. *breaches a professional standard or a recognised and widely adopted (conduct) benchmark.*

**To date over 10,000 submissions have been revived from the public with the majority (62%) related to banking, superannuation (12%) and financial advice (9%).**

There have been six rounds of public hearings focused on consumer lending, financial advice, superannuation, life and general insurance, agribusiness lending, sales practices and interactions between financial product providers and Indigenous and Torres Strait Islanders.

The Commission's Interim Report revealed conduct by financial institutions that has drawn widespread public condemnation.

The interim report asked two key questions; why did it happen, and, what can be done to prevent the conduct happening again? Unfortunately, the Commission surmised that the answer to the first is 'greed – the pursuit of short-term profit at the expense of basic standards of honesty' and institutions' focus on selling.

Significantly. the interim report suggests there are enough laws to cover misconduct, but their effectiveness requires enforcement. Regulatory bodies and financial institutions will be reassessing their culture, operations and staff conduct to ensure they meet much sharper scrutiny in the post-Commission period.

The Commission has documented significant operational and governance failures including:

- Mishandling of customer disputes,
- Overcharging of fees and sometimes for non-existent service
- Poor Board performance
- Remuneration that encouraged behaviour that was detrimental to customer outcomes

The Commission's revelations have impacted the entire financial services sector. Senior executives of Australia's major banks, several insurance companies and superannuation managers have been interviewed by the Commission and many have been called to appear as witnesses. Several high-profile CEOs and board members have been impacted by the revelations of the Commission. Key regulatory authorities have also been subjected to the Commission's scrutiny.

Revelations have prompted the establishment of customer remediation schemes, the escalation and closure of unresolved issues and refunding of fees collected from customers for no service. The financial impacts on institutions have been significant and investment bank Morgan Stanley says customer refunds and remediation costs, as well as associated penalties

and fines, will cost the big four $4.83 billion for the three years from 2018- 2020.

Separately, the Commission also posed numerous policy questions about the value of accidental death cover, the value of add-on insurance, potential conflicts of interest in group life and life insurers' access to medical information. These matters will be considered by our practice Committees to see if the profession can provide any insights to support policymakers make sensible reforms that will meet community expectations whilst maintaining the viability of products and services that provide genuine public benefits.

Clearly everyone working in the financial services must examine their own conduct and performance. The interim report contained references to actuaries in well over 300 evidence exhibits. These mainly referred to Actuarial reports and therefore were not negative references however they do point to the integral role that the profession plays in so many aspects of the financial services industry.

A key task for industry bodies and professional associations is to consider how they can best guide and support their members to recognise and manage the pitfalls that were revealed by the Royal Commission. The financial services sector has already started to shift more focus to the customer and community expectations. Regulators will also increase their scrutiny of corporate behaviour. The final report of the Hayne Royal Commission is likely to accelerate the significant changes that are starting to impact the sector.

# Dipping into Diversity – 'sound bites of thought' – From tick boxes to genuine inclusion

By Helena McGeorge

Reading time: 2 mins

Here, Helena McGeorge, Member of the Institute's Diversity and Inclusion Working Group, discusses an article on inclusion and authenticity in the workplace.

In a world where everything needs a policy, protocol or law, diversity and inclusion is dangerously close to becoming a box-ticking exercise rather than a natural initiative centred around open-mindedness and respect.

If the intentions behind the efforts are not genuine, we surely cannot expect much, if any, progress to be made.

Written by Kudzai Chigiji, FIA and FASSA, *'Shall We Dance?'* is a compelling thought piece on how we can work towards an inclusive environment where people can truly be their authentic selves.

Through her own journey of self-acceptance and growth, Kudzai has come to truly appreciate what it means to live authentically and the importance of creating safe spaces for others to be their authentic selves.

Here is an excerpt from the full article (originally published in the Society of Actuaries *The Actuary* magazine in Aug/Sept 2018):

> *Given that inclusion does not seem to be common sense to everyone, we now have rules, protocol and even legislation around it. I wonder why something that is supposed to be completely natural—being an open-minded person who respects everyone, regardless of classification—has been engineered to the point that it feels almost unnatural. The outcome of having rules around diversity and inclusion is often a desperate, mad rush to tick the boxes. This leaves many spirits crushed and a wave of confusion, and results in little progress.*

As a profession, we aim to serve the public's best interest. But how can we deliver on this lofty goal if we cannot serve the best interests of all people with whom we interact on a daily basis?

According to research by McKinsey & Company, companies in the top quartile for racial and ethnic diversity are 35% more likely to have financial returns above their respective national industry medians (full report here). The organisations for which we work can only benefit from truly inclusive work environments.

> **"Diversity is being invited to the party, inclusion is being asked to dance—and I don't think that you can do one without the other"– *Suki Sandhu*[1]**

Don't we all want to be asked to dance?

Read the full article here and let us know what you think by commenting below or getting in touch with our Diversity and Inclusion Working Group.

***References:***

1. Purcell, Richard, and Chris Seekings. 2017. "Embracing Inclusivity." *The Actuary*. April 13.

# Diversity and Inclusion, how can we make a difference?

By Suzanne Patten

Reading time: 5 mins

In a recent conversation with Suzanne Patten, Justine Whitaker, the Senior Manager at IAG for Diversity, Inclusion and Belonging, shared her views and practical tips of how we all can make a difference.

## Kia ora* (Dear) Justine, you are a passionate advocate of Diversity and Inclusion, why is this important to you?

I have always been curious about and fascinated with individuality – what motivates people, why they make the choices they do and how we find so many different ways to deal with a similar challenge or opportunity. So, my passion really is grounded in a deeply held desire to learn, understand and to relish what makes us all unique and special.

Including 'Belonging' as part of Diversity and Inclusion also highlights it is not just about embracing our uniqueness, it is also ensuring we know that we matter, that we are welcomed and that we can feel 'safe', in expressing our individuality. I should add that while I am a staunch advocate for realising the potential inherent in our individuality, this needs to be counter balanced with all the wonderful aspects that we share, that bind us and make us all human.

So, it's the nexus of what makes as unique as individuals and what connects us together as humanity – that make me so passionate about Diversity, Inclusion and Belonging (DIB).

## How has the thinking of Diversity and Inclusion evolved in recent years?

Sometimes the diversity rhetoric can feel negatively focused, preaching 'tolerance' and 'acceptance', rather than saying "we are all unique, special and perfect, just as we are". Often, we can have a work self, a home self and a public self, to some extent we filter or hide aspects of ourselves away from others. This might be because we are embarrassed, or we think we might not be accepted or that it is not the right way to do things. I think this is a real shame, as so much energy gets wasted on often filtering out the very best parts of us. The message in our strategy is very simple – just be proud of what makes you you – just be the very best version of yourself. There are strong and obvious links to transparency, authenticity and empathy, but also, we know that it makes for a more resilient, creative and connected team, organisation and ultimately community.

As our realities become increasingly disrupted be it by exponential technology, cryptocurrency, the gig economy or whatever it may be, we need help to be able to connect the dots and make sense of all the information that we receive. One way we can facilitate this is to integrate DIB into all that we do. We refer to this as 'building DIB in, rather than bolting it on'.

An example, is the way we communicate and set organisational culture by the choices of words and images on a day-to-day basis. It is often said that 'if you can't see it, you can't be it', so encouraging choice of language that is inclusive and images that reflect greater diversity, is vitally important. It is my experience that even the most strategic of communications and engagement teams underestimate the amount of power and influence they can exert towards creating a culture of inclusive growth. When you get a moment take a closer look at your company intranet and then ask yourself – who is underrepresented, who is missing and whose voice is not heard – and then ask what can I do to give that voice some air time?

The days of diversity and inclusion being simply a tick box exercise, are well over. We know to be innovative, to become customer centric and to ultimately outperform, is the ability to think in new and creative ways. This requires embracing and actively encouraging different points of view. We need greater diversity in the way we problem solve and create. It is rare for us to work alone, with increasingly work being open sourced, democratised or co-created. It is essential to respect, learn from and leverage points of view which are different from yours. I am a firm believer that diversity, inclusion and belonging are vital pillars in outcompeting in today's rapidly changing social and economic landscapes.

## What are some practical tips we can all do to make a difference?

Firstly, we can all make a difference, this is not the domain of HR or executive leaders. It is the role, responsibility and indeed obligation of everyone. Sure, you can do highly visible things such as create a DIB strategy, sponsor a workshop or speak at a conference – these are important. But in my experience, it is the smaller things that matter.

Secondly, we think it always starts with someone else, not us – it doesn't, it starts right here, right now with you – the way you think, the questions you ask, the language you use, who you sit by, whose ideas you endorse, whose perspective you listen to and act upon.

So, let's start there first, ask yourself a few of these questions, regularly:

- Whose voice was missing from that conversation?
- Did I encourage diversity of thought or did I encourage wholesale agreement or group think?
- What change could I make to the language I use more inclusive?
- How much do I talk versus inviting comment and input from others?
- When I seek feedback, do I seek it from only those I think/ hope will disagree with me or do I deliberately seek out other views which I know will be different from mine?
- When did I last see, or hear something that we deliberately excluding someone e.g. a supposedly funny homophobic joke, or quip about fathers 'babysitting', did I address it, or did I walk by?

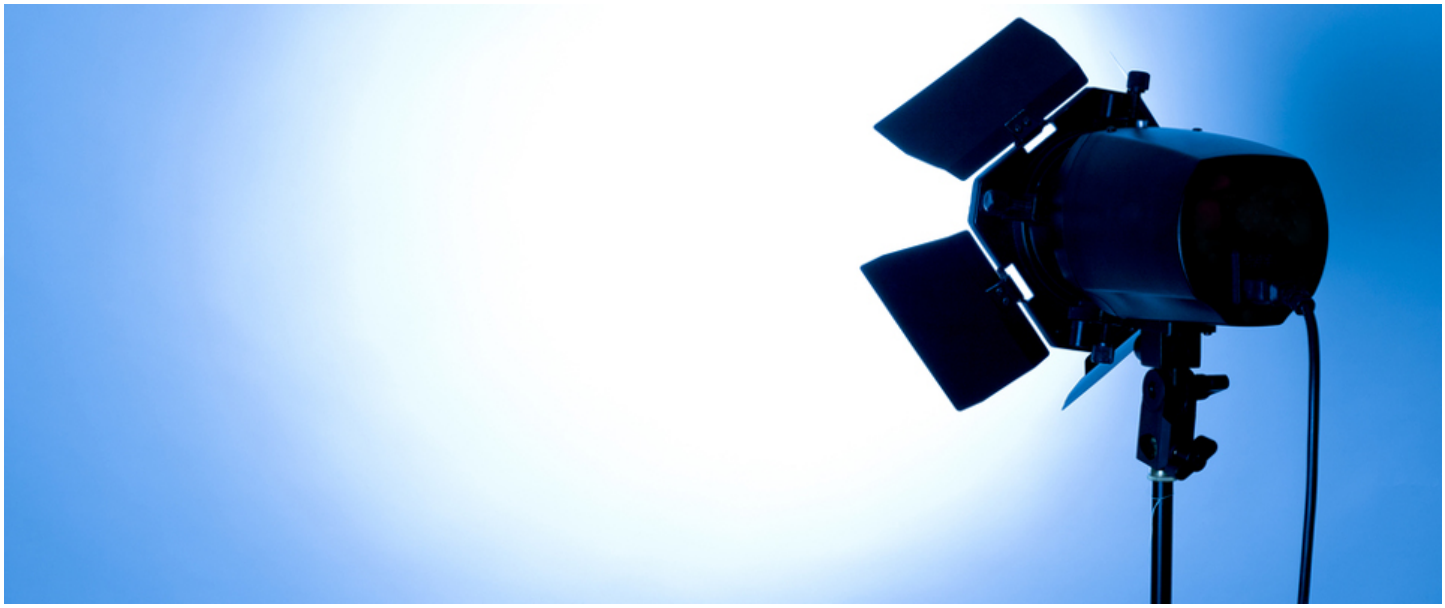
In addition, there are lots of initiatives that you could facilitate in your organisations from training, to the development of employee resource action groups, to celebrating key days e.g. International Women's Day, to undertaking an accessibility audit to greater consideration of flexible working arrangements. However, as some general advice, keep in mind:

- The principle of equity rather than equality – not everyone is the same. Not everyone starts at the same place. Not everyone desires the same outcome. Be careful not to assume that what you want or need, is what everyone wants or needs. So, before you start – ask. Resources, such as human centred design principles are a great way to gain insight into what it is people actually want. IDEO have lots of great online resources.
- Look for solutions that are good for everyone, not just one target cohort e.g. encouraging flexible working practice is appealing to mid-career women and younger team members – and offers huge benefit to working fathers and senior team members with carer responsibilities. It is important that in advancing the interests and needs of one group, that the needs and interests of another are not inadvertently disadvantaged.
- Learn to accept that there is rarely one solution, silver bullet or quick fix. Remember that diversity, inclusion and belonging is not just about the needs of your employees, but your customers, suppliers and partners also. This is an innately human state, so widen your scope to consider implications for multiple parties and stakeholders, and how can this benefit as many people as possible.

And in the words of Anthea Aime:

Start where you are
Use what you have
Do what you can

*Note from Suzanne – I have used the Maori greeting in this article. As an example of personal actions, Justine, a proud New Zealander, often uses these in her emails and communications. I find this a very impactful way of being inclusive and reminding me of our own individuality.



# Under the Spotlight - Simon Guthrie

By Simon Guthrie

Reading time: 4 mins
Read about Simon Guthrie's colourful career as he moved from non-traditional actuarial work in industry to academia,where he is now a Senior Lecturer at Macquarie University. He shares his personal thoughts including some useful insights for the next generation of actuaries.

**Summarise yourself in one sentence…**Faithful husband, father, actuary, teacher.

**My interesting/quirky hobbies…** I like to acquire new DIY skills, like roasting my own coffee beans and DIY plumbing (not necessarily recommended). I also do the Sydney Morning Herald cryptic crossword every Friday.

**My favourite energetic pursuit…**Is golf energetic? If not, then running.

**What gets my goat…** Selfishness

**I'd like to be brave enough to…** Start the next great actuarial firm.

**In my life I'm planning to change…** The world. Incrementally.

**Not many people know this but I…** Have an annoying habit of taking things my family say and turning them into songs.

*Simon with his family*

**Short description of career…** I began as a wide-eyed, innocent consultant at PwC where I was lucky enough to be exposed to a variety of general insurance and accident compensation schemes. I was a part of the fledgling health/disability actuarial practice under John Walsh. I was then able to ride the wave of the NDIS, from consulting to State governments on disability funding and then NDIS transition, to ultimately joining the newly established NDIA as a member of the actuarial team. Then, six months ago, a big career shift to academia. Now I help teach the next generation of actuaries and continue research into disability and other social policy. I reckon actuaries can play a big role in making the world a better place.

**I became an actuary because…** I wanted a career with a mix of deep technical expertise and commercial application.

**Where I studied to become an actuary and qualifications obtained…** Macquarie University. BCom-ActSt, BAppFin, FIAA

**I am most passionate about…** My family

**What I find most interesting about my current role…** It was interesting to come back to university and reflect on how the things I learned all those years ago during my Part I studies have been useful (or not…) throughout my career. Who knows what exciting things my current students will get up to over their careers?

**My role's greatest challenges…** Marking…

**My proudest career achievement to date is …** I love seeing those I have worked with, coached or mentored through exams doing amazing things and achieving success. Seeing an impact beyond my own meagre achievements is what makes me proud.

**10 years from now, I will be …** The father of two teenage girls.

**Who has been the biggest influence on my career (and why)…** Sarah Johnson and John Walsh. Both have opened the door for my career to proceed in a direction I couldn't have foreseen in the beginning.

**Why I'm proud to be an actuary…** Actuaries simultaneously have a long and proud history rooted in timeless mathematics whilst also being at the forefront of new computational and data technologies. We have been entrusted with ensuring the financial security of some of our largest institutions and we are tasked to provide certainty for people who may be at one of the most vulnerable points in their lives. What's not to love?

**The most valuable skill an actuary can possess is …** Empathy.

**If I were President of the Institute, one thing I would improve is…** the engagement of members in the running of our profession.

**At least once in their life, every actuary should…** Help solve a business problem outside of their area of expertise.

**My best advice for younger actuaries…** Never stop learning.

**If I could travel back in time I would…** do so very carefully. It sounds like a risky undertaking!

**When I retire, my legacy will be…** for others to determine

**Actuarial capabilities I use in my current job…** Coming back to university to teach has meant that I have needed to return to the technical basics of my actuarial education, including some maths that had fallen out the back of my brain. But I also rely on the softer skills and actuarial judgement that I have developed over my career.

**Skills actuaries should enhance to become more effective in my field of work…** Communication, compassion and collaboration.

**One of the most creative applications of actuarial capabilities that I have used in my career…** Is hopefully about to be realised as I commence my PhD

**The most interesting or valuable job or project I have worked on in my career and why…** Definitely everything that has contributed to the establishment and implementation of the NDIS.

**How my skill set evolved over my career…** The biggest skill I have developed (am still developing) is knowing how best to manage and prioritise my time and projects to get the best out of myself. A skill that doesn't stop at the office door – it is required across all areas of life.

**The most challenging job or project I have worked on and why?** Probably transition from State disability systems to the NDIS. Lots of stakeholders, lots of terrible data, lots of public scrutiny and a lot of change for individuals with a disability and their families

**The advice I would give aspiring actuaries to be able to do my job…** Be yourself.


# Fast five with Fintechs - Anorak

By Chenthuran Suthersan

Reading time: 4 mins

In this instalment of 'Fast five with Fintechs', we ask Chen Suthersan about the highs and lows of working in a startup and find out about his ambition to see his automated life insurance advice platform be an 'always on' protection companion taking the pulse of consumer's protection status and empowering them to be in control.

## About the fintech

**We're building a smart life insurance adviser with a mission to redefine the way millions protect their future. Anorak is the world first fully automated life insurance advice platform.**
**It gives everyone easy access to personalised and regulated life insurance advice. To do this, we use data science and machine learning to power a service that gives everyone access to tailored and regulated life insurance advice. Our platform and APIs are integrated by partners so that people access life insurance advice whilst using everyday services (online banks, investment platforms, price comparison websites, ecommerce sites, money apps, etc.). We launched few months ago and are currently available to customers of two challengers banks (Starling and Yolt).**

## 1. What skills do you need to succeed in Fintech/Insurtech today?

Working in Insurtech is altogether different from all of my previous roles which were for insurers. For a start you need to be more of a generalist, you need to be confident assisting with design, networking, selling, strategy as well as your day job. You also need to be a lot more self-sufficient which can be difficult coming from a large organisation where you are used to having a large amount of shared services like recruiting, IT, contracting external services. In addition, you need to adapt a lot because you are dealing with many people who are not familiar with our domain expertise and vice versa. I've been asked to draw what I am saying to designers and I have needed to learn a very basic level of coding to understand what developers are telling me.

Being an actuary gives you probably one of the best backgrounds for understanding how an insurer operates. You deal with finance, claims, underwriting and account management so you really see the whole business. This overall knowledge is great for working in Insurtech. Also, being an actuary you have a wide knowledge of financial mathematics that are really useful to startups. I have found knowledge of discounted cash flows, annuity valuation and even options pricing useful for my role.

## 2. What are some of the highs and lows of an entrepreneurial path in Fintech?

The challenges are basically the compromises you need to make because you do not have the resources that a large established company has particularly in regard to releasing products that meet the minimum viable requirements, rather than everything you wanted. You cannot release everything you want because it is too expensive - in both time and money.

*"You need to move as fast as you can with what you have to move to the next stage". - Chen Suthersan*

The minimum viable product serves many useful purposes because it helps partners and funders visualise our proposition. This is important because it can unlock further funding or sign a partner (which can then be used to sign another partner) but it is sometimes frustrating releasing a product when you know it will be much better in a couple of months' time.

But then this leads to the highs of working for a startup. Work is extremely dynamic and agile. You can change directions very quickly as the implementation process is broken down into smaller product releases. You constantly get feedback before you build the next stage so it avoids you putting a lot of effort into something only to find out that it doesn't meet what customers want. I personally enjoy the dynamic environment of a startup but can see that it is probably not for everyone.

## 3. Where do you see the company in 12 months? What about five years?

Our platform is currently designed for online only distribution. In 12 months we will also provide a platform to intermediaries (brokers, agents, etc) to help them initiate their digital transformation.

We have a long way to go to move an industry that is just starting to realise the benefits of what technology can do.

> **"In five years, Anorak will be integrated in many different distribution channels, triggering life insurance conversations at the right moment when a life event requires a family to have a closer look at how they should protect their financial vulnerability."**

We have the ambition to be an 'always on' protection companion that is running in the background, taking the pulse of your protection status and empowering you to be in control.

## 4. What's your top tip for actuaries wanting to move into this space?

Keep an eye out for incubators. A lot of large financial companies have an incubator program that will match you up with other people with complementary skills to launch startups. They also provide funding and expertise to help you succeed.

Also go to meet up events with designers or developer or data scientists. I wish I did this before I started because it can really help you when you work with them.

## 5. What has had the most influence on your professional mindset?

It is really hard to pinpoint one particular influence for my professional mindset, it is really an amalgamation of many experiences. If I had to choose I would choose completing the specialist exams. The Actuarial Specialist Exams really forced me to time manage and sacrifice like I had never needed to before. Whilst it was painful or maybe because it was so painful, it had the most influence on me.

# Becoming an effective communicator

By Timothy Lam

Reading time: 2 mins

One of the most valuable strengths to have as an actuary is great communication skills. In this article, Tim Lam outlines the importance of difficult professional conversations and how the upcoming YAP event can help you become an effective communicator.

As a young actuary you might receive lots of messages about how to progress in your career, particularly around communication and influencing people. It can be difficult to balance how you are perceived. For example, how do you balance being "pushy", with or without substance, confidence, influence, responsibility or enthusiasm? Challenging situations are unavoidable in the professional working environment and while we often feel that we understand how to approach the situation, results may not always be predictable.

Being prepared and working out how you can best navigate them will ensure you get the best outcome. Also, you are able to learn more about how to approach future such conversations. Examples include:

- How to discuss career progress (or your perceived lack of it) with your direct manager.
- How to let a client or manager know that you will not meet a deadline.
- How to approach the relevant stakeholder on a project when you don't know them.

For the next Young Actuaries Program (YAP) event **What do I do about this? How to initiate a difficult conversation at work** we have invited Jas Singh and Jenny Lyon from SKL to talk about these situations and how you can approach various scenarios to maximise the probability of achieving your desired outcome.

Jas and Jenny are both owners and founders of SKL. They are both Fellows with actuarial experience in financial services and significant recruitment experience. They aim to engage closely with their candidates and advise on long term career strategies so have given a lot of thought to these sorts of questions. In our upcoming session, Jas and Jenny offer a framework to help you think about how to approach such situations, explore case studies, and seek your input so we can engage in an interactive discussion – so bring some real-life examples with you!

## Some things to think about in advance include:

1. What am I trying to achieve in the conversation – why am I asking for this/what is the real issue that needs to be addressed?
2. What is my initial mindset – Fear? Confidence? Overconfidence? Arrogance? Are there behavioural barriers that are stopping me from delivering the message in an effective manner?
3. What can I prepare, do I have credible evidence to back my request/suggestion?
4. Am I just presenting a problem, or can I propose a solution?
5. Have I thought about a clear structure and effective manner of delivery?
6. What is my relationship with the individual I need to speak to, do I understand their perception of me and how can I build on this or change it in this discussion to improve my working relationship with them?
7. Am I seeing this as an opportunity?
8. Execution – how to successfully set up a discussion and deliver effectively. The key stakeholders are generally busy – getting a hold of them for an extended period to convey and discuss the key message can often prove to be difficult. Is there anything that can be done to move myself up their priority list? When should I give up and move on? What I do practically need to prepare for the discussion?

**"What do I do about this? How to initiate a difficult conversation at work"** will be held on **Tuesday 23 October 2018** at The Forum, Actuaries Institute from 5:30pm to 7:30pm. REGISTER HERE

# Q&A with Deputy Chief Actuary at Medibank, Adam Stolz

By Adam Stolz

Reading time: 3 mins

We ask Deputy Chief Actuary and General Manager Pricing at Medibank, Adam Stolz, what it was like working on the Vitality program by AIA in Australia, and about the big challenges and opportunities facing the health insurance industry.

## What responsibilities does your role entail?

I am responsible for pricing, including Medibank's pricing strategy, as well as actuarial advice for portfolio initiatives including new products, new benefits and PHI reforms. This advice includes consideration of both customer value and financial impacts.

## What do you see as the biggest challenges facing the health insurance industry?

The biggest challenge currently is improving affordability, while maintaining the high level of health outcomes across both the public and private system that we currently have in Australia. This is not an easy challenge, and so we need different and innovative ways of thinking as well as strong collaboration across the health system.

## How could the industry be more innovative?

New business and funding models that reward health outcomes and not just activity is a shift change that is needed – we should be incentivising efforts in this direction. Without the right incentives in place, it may be difficult for new, worthwhile innovations to thrive.

## You contributed to the successful launch of the health and wellness Vitality program by AIA in Australia, tell us about that and why it's so popular?

People are inherently interested in improving their health and wellbeing, and many will respond positively if they are rewarded for doing so. If the rewards are compelling by sharing the value created with customers, then these types of programs should become more and more popular in Australia, following on from Discovery's amazing growth in South Africa using this model.

## You've worked in Australia, France and the US. What similarities and differences in those markets stood out to you?

From a health perspective, all have different systems with a different role for public and private health, and all are experiencing rising health costs well above inflation. From a personal perspective, my wife much preferred the experience of giving birth in France than the US, and it was much cheaper! There is a lot of innovation in health coming out of the US and France as well as other countries, and so I believe we can learn and adopt where it makes sense in Australia.

## Give us a taste of what you'll be talking about at FOHS?

One of the key questions in health is how do we fund new emerging and innovative solutions that can benefit the population? I strongly believe that we should be funding solutions that genuinely improve health outcomes, as well as funding solutions that lead to the same health outcomes more efficiently and with a better patient experience – we need both.

Medibank is making decisions today on this basis, and at FOHS I will present this framework including some case studies. The opportunity is how to apply this approach more broadly across the Australian health system if it is to maintain the current strong global rating it has today.

## Why is it important for actuaries working in health insurance to attend FOHS this year?

There has never been a more important time for the health industry than now, and actuaries can genuinely contribute to an informed debate of what the future holds.

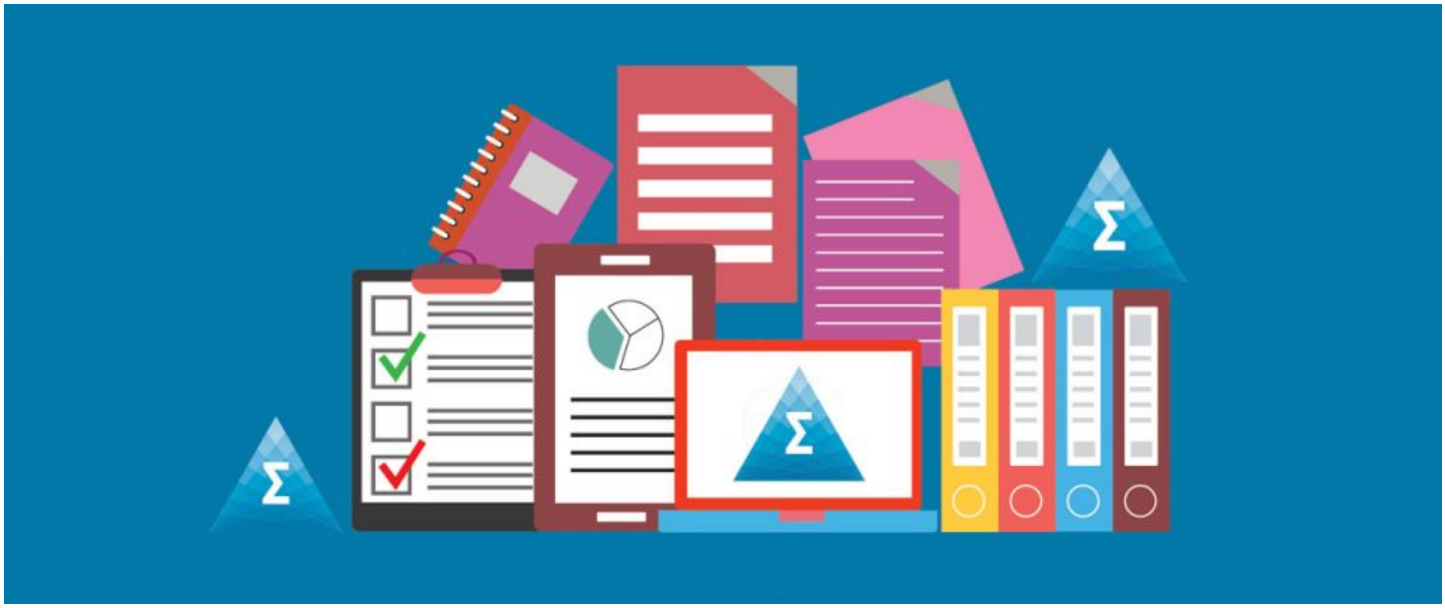
Adam Stolz is a speaker at the upcoming Future of Health Seminar (FOHS) in Sydney during Plenary 1: Emerging Solutions 'Technology and oncology?'

View the FOHS Program Snapshot and Register here.

Future of Health Seminar

In Sickness and in Health

15 Oct 2018



# President's Report to Members - September 2018 Council Meeting

By Barry Rafe

Reading time: 4 mins

President Barry Rafe covers the key issues discussed and the decisions made at the Actuaries Institute Council meeting held on 3 September 2018.

President Andrea Gluyas and Vice President John Smeed of the NZ Society of Actuaries provided an update on NZ's focus and activities and attended part of the Council meeting. Councillor Michael O'Neill resigned from Council due to work commitments. Council thanked him for his service on Council over the last two and a half years.

## CEO's report

An update on communications and marketing, public policy and event activities were provided. A Royal Commission Working Group has been closely monitoring the Commission's activities and will determine what it means for the different practice areas. The 2019 CPD tour will examine the learnings from the Royal Commission and focus on what it means to be a professional. Global developments of other international actuarial associations were reviewed. The 2018 Council strategy meeting will focus on how we increase the right supply of students, how we increase the demand for Actuaries and how we retain members by providing a strong member value proposition.

## Education Strategy Review and CPD update

The first two subjects of the Education Strategy review are currently being developed. The key success factors for the monitoring of the Education Strategy Review implementation phase were approved. These fall into four main categories: subject development quality and milestones; stakeholder consultation, governance and policies; and risk and budget management.

## ICA 2022

Daniel Smith, Martin Stevenson and Fred Rowley spoke to a comprehensive paper outlining plans for the hosting of the ICA2022. This included financial, marketing, risk and sponsorship considerations as well as outlining the support from senior members of our profession. The Council enthusiastically support the ICA2022. It is a large undertaking and there will be a call out to members to obtain future volunteer support.

Council will set up a steering committee who can provide oversight of the organising committee to Council.

## International committee

Council thanked outgoing International Council Committee convenor Martin Stevenson for his significant contribution over the last five years. The new structure that came into place in late 2017 is working well. Communications have increased and the committees have a strong focus on Asia and IAA activities. The new Convenor will be ex-President Bozenna Hinton.

## Education update

Council discussed the low pass rates for three subjects - 2A Life Insurance, 3A General Insurance and 5B investment Management and Finance. Chief examiners advised the poor results were due to a lack of understanding of technical components and key concepts. Steps taken to address these issues include updating the syllabus and teaching materials as part of the Education Strategy Review and the Part III improvement project.

## Code of conduct Taskforce update

Rob Daly Convenor of the Code of Conduct taskforce provided an update. The draft Code was discussed with members at an insights session on 24 July and 12 members provided written feedback. The taskforce met recently to review the feedback and

will recommend material changes to the draft code in the area around conflicts of interest. It is intended the next draft will be presented to Council at the March 2019 Council meeting. A new taskforce will be formed to take on the role of guidance and training to support the code of conduct.

## Practice and Council committee reports

**Health Practice Committee:** Convenor Nick Stolk briefed Council on the activities of the committee. The Future of Health Seminar is well received and attracts approximately 100 delegates. The HPC are keen to grow this and do more in the future on media follow ups post the seminar. There is a Green Paper currently being drafted that looks at the current intergenerational issues facing Private Health Insurance.

**Public Policy Council Committee:** Council thanked Michael Rice, who has advised he will step down as Convenor at the end of the year, for his contribution to the PPCC. Michael advised the committee is working well with two green papers in train on Aged Pension and Private Health Insurance, as well as a number of Dialogue papers. There have been several significant superannuation submissions throughout the year and strong engagement between the Actuaries Institute and Regulators, Government and the Productivity Commission.

**Professional Standards Committee:** Elaine Collins provided a report on the activities of Professional Standards Committee. There has been a lot of activity surrounding the code of conduct review and the APRA appointed actuary changes. Due to this increase in the number of standards being reviewed, the committee is keen to get increased assistance. A new position in HQ will be established to provide stronger support to the Professional Standards Council Committee.

## Key appointments

Eilis Hurley, Annie Tay and Timothy Lee have been appointed to the Audit and Risk Council Committee.

## Professional standards

The following decisions were made regarding professional standards:

Practice Guidelines

PG 5 Actuarial Practice in relation to Insurer Enterprise Risk Models be released to members.

## HQ success stories

CEO Elayne Grace gave an overview of some of the achievements since the last Council meeting including Education transition communications, improved automated renewal process, New Data Analytics Weapons of Mass Deduction competition and the video 'Ask the Executives' from the Financial Services Forum.

## Next meeting

The next Council meeting is on 5 December 2018.

## Feedback please!

If you would like to provide some feedback or comments, please contact one of your councillors below.

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