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In this issue

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The Future of Financial Services – FSF 2016 Wrap Up

By Stephanie Quine

FSF2016 examined how disruptors will impact the financial services industry. It asked, how can actuaries reimagine their career in the future world? Where are the opportunities?

Actuaries Institute President Lindsay Smartt welcomed more than 420 delegates to the 2016 Financial Services Forum (FSF) at the Grand Hyatt Hotel in Melbourne on Monday 16 May. ABC anchor and Walkley award-winning journalist Virginia Trioli facilitated the Plenary Sessions, commanding a fast paced Q&A with expert speakers across a range of industries.

The Forum focused on emerging 'disrupters' to the industries in which actuaries work, especially life insurance and superannuation. It featured new insights on our ageing population, retirement income and life insurance products, banking regulation and trends in the sharing economy, along with various career development presentations.

Presentations from a variety of the Day 1 Plenary Speakers and Concurrent Sessions are now available on the FSF Program Snapshot. A full Photo Gallery is also available.

A high-flying career

Delegates gathered on Monday morning for a Keynote Address by world champion aerial skier and senior IBM business executive, Alisa Camplin OAM.

"I've heard half-a-dozen really great presentations in my time – and this was one of them," said CEO David Bell whose latest column is inspired by Alisa's words.

Alisa had delegates up on their feet, simulating the body positioning required for a double twist aerial ski jump. The demonstration highlighted how much preparation a world class aerial ski jump, lasting just three seconds in the air, requires.

"A vision without a plan is just a wish. You absolutely need both."
- Alisa Camplin

Alisa shared details of her ambitious strategic plan, and 'tough years' working multiple jobs, that helped her make it to the Games.

She decided she wanted to be a champion aerial skier before she had actually learned to ski, at age 19. She curated a team of

expert trainers and mentors, and considered seemingly every way to perfect her daily routine and out-train competitors.

“A vision without a plan is just a wish. You absolutely need both,” said Alisa.

Ignoring 'stop signs' and critics and silencing her inner negativity to become her "own biggest cheerleader" was also a key to success, she said.

“All of us could ask ourselves ‘am I working hard enough when nobody else is watching?’" said Alisa.

In Q&A time, Virginia probed Alisa for further tips on her approach to discipline, motivation and leadership in both sport and business.

Empowering an ageing population

Plenary 2 followed with a fascinating discussion on regulatory, policy and real world 'Challenges of an Ageing Population'; topical especially with the July 2 Federal Election approaching.

“41% of our members arrive at retirement without a process of financial planning or adjusting." - Jon Sedawie, General Manager, Product Strategy, Cbus

Mike Woods, Professor of Health Economics at UTS, outlined the growth in Australia’s elderly population and projected shifts in ratio of working people to retirees.

He emphasised the trend to empower older people; reposition nursing homes as multiple care use assets and strengthen individual control, choice and community living.

“There is important work being done to make sure we’re on the same page here with common goals because that creates certainty and opportunities to invest,” said Mike.

The Forum next heard from Jon Sedawie, General Manager, Product Strategy, at industry super fund Cbus, who urged funds to be more to their members than simply 'funds administrators'.

View the video here:
https://youtu.be/XJcj9aAhZPg

“41% of our members arrive at retirement without a process of financial planning or adjusting," he said, adding that holistic advice is needed to allay customer anxiety about retirement and help put plans in place.

Nicolette Rubinsztein (pictured above), Director of UniSuper and Actuaries Institute Councillor shared five key pieces of research on retirement income products and her 'top 10 learnings' in this area since her time as General Manager at Colonial First State.

"Annuities have been described as a 40-year risk exposure to an insurance company - how do we reconcile this poor image?" she asked, adding that there is much good work to be done by actuaries in this space.

In data we trust

Plenary 3: 'Technology Opportunities' saw three distinguished speakers discuss the importance of data collection and analysis to market traction and business success. Head of Financial & Business Services at Google, Colin Barnard discussed Google's mission to "organise the world's information and make it universally accessible and useful.

Oliver Moore, Client Partner for Facebook shared insight on leveraging data and analytics to deliver highly personalised marketing strategies to the 11 million Australians who use Facebook daily.

Finally Adam Driussi, Actuary and Co-founder and CEO of Quantium outlined how his company is helping clients create data by analysing, for example, catalogues, bank statements and receipts.

"There are so many opportunities to use data and analytics to help retailers make decisions on stock supply and placement, the list is endless." - Adam Driussi, actuary and co-founder and CEO of Quantium

GoGet sustainable

Day 2 of FSF kicked-off with a look at the fast-growing car-sharing economy. GoGet's General Manager for Victoria and

South Australia, Justin Passaportis, engaged delegates with interactive data displays showing the strong uptake of GoGet car sharing services in Australia cities.

“Soaring populations, limited space and increasing congestion call for intermodal transport,” said Justin. He also outlined GoGet’s latest partnerships with Melbourne universities and local councils to test new car sharing technologies and fleets.

“We believe car sharing is integral to the transition to driverless cars. We are a reluctant disrupter, we are part of the solution and are learning as we go.” - Justin Passaportis, GoGet's General Manager for Victoria and South Australia

View the video here:
https://youtu.be/h4yom8r0ddQ

To engender better financial stability in the insurance industry generally, Adrian Rees (pictured below right) of APRA called industry players to remain focused on fundamentals and sensible underwriting, as well as board and management mindfulness.

He also touted the importance of Appointed Actuaries and CROs working together. “This is critical to developing a sensible risk management framework that’s fit for your business,” said Adrian.

Equity Analyst Siddarth Parameswaran (pictured below rightfrom JPMorgan was the final plenary speaker on Tuesday morning. In regards to longevity risk, Siddharth said that so far, only one player (Challenger) has had a strong voice and captured the market’s mind on where solutions on longevity should go. He called for industry discussion on capital intensive versus non-capital intensive models in this area.

Insurance and society

FSF’s final plenary saw three distinguished speakers talk about the big challenges facing industry and society.

“100 years ago lung cancer almost didn’t exist. People will look back on smoking deaths as a 'strange period' we lived through, similar to the plague.” - Dr Bronwyn King, Radiation Oncologist and CEO of Tobacco Free Portfolios

Sharanjit Paddam, Principle at Deloitte, detailed the ‘pervasive and systemic’ impact of climate change on sectors from agriculture to tourism, mining, energy, health, housing and employment.

Dr Bronwyn King, a Radiation Oncologist and CEO of Tobacco Free Portfolios shared her work to get 33 superannuation funds to implement tobacco-free investment mandates, following her experience treating hundreds of terminal patients with tobacco-related illness.

“100 years ago lung cancer almost didn’t exist. People will look back on smoking deaths as a 'strange period' we lived through, similar to the plague,” said Bronwyn, adding that every metric associated with disadvantage is now associated with smoking around the world.

Finally, Margo Lydon, CEO of SuperFriend outlined the latest work of the industry funds forum and mental health foundation to deliver targeted workplace programs, initiatives, resources and the latest research to improve the mental health and wellbeing of ‘all profit to member’ super fund members.

The session concluded with Q&A time before Virginia thanked all speakers and 2016 delegates for participating in an array of vibrant conversations at the intersection of actuarial analysis and the future of Australia's financial services industry.

Delegates enjoyed a Cocktail Party on Monday night and took the chance to debrief on the insights gathered from the day's presentation.

Over eight Concurrent timeslots, the Forum featured sessions on a range of topical issues, from a critique of the Intergenerational Report, to a look at the Banking and Finance Oath, to possible designs for retirement income products and how data analytics might transform everything from retail sales to life insurance products. Others explored the latest trauma definitions and trends in disability insurance, as well as the uptake of Robo-advisors and optimal investment strategies for Australian retirees.

A number of presenters called on actuaries to use their 'highly transferable' skills to innovate and contribute to wider fields.

"We have so much potential to impact on society; to bring credit to our profession and ourselves. We need to take ownership for our own careers as individuals" - actuary at Deloitte, Marc Mer

The Institute would like to thank the FSF2016 Organising Committee: Wade Matterson (Milliman), Peter Chun (Colonial First State), Ilan Leas (Pacific Life Re), Cindy Vuong (Deloitte), Jia Tan (CBA), Diane Somerville (Deloitte), Leonie Semmens (PwC), Thuy Truong (EY), Louise Ryves (Quantium), and from the Actuaries Institute: Elayne Grace, Emma Simonson and Elizabeth Gemmell.

The Institute would also like to thank all its sponsors. The Silver sponsors for FSF2016 are: RGA, Gen Re and Willis Towers Watson. The Bronze Sponsors are: Milliman, SKL, FIS, Deloitte, KPMG and Munich Re.

Equity Risk Premium Survey 2015

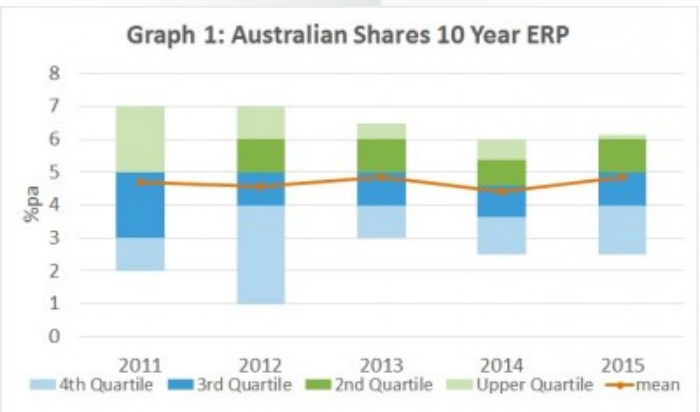
By Anthony Asher and David Carruthers

Anthony Asher and David Carruthers help manage expectations with the 2015 Equity Risk Premium Survey. Find out what the results mean for you.

The Equity Risk Premium (ERP) is a key component of every risk and return model in finance and reflects the price which investors place on equity risk. The ERP will impact decisions as diverse as how superannuation funds invest their assets, to the price at which regulated monopolies can charge for their products.

Expectations

Given the importance of the ERP to all actuaries, the fifth annual survey of the profession was undertaken in December 2015. The survey results highlighted an average equity risk premium expectation of 4.9% for the Australian market. As shown in Graph 1, this represents an increase over the average of 4.4% in the 2014 survey (4.8%, 4.6% and 4.7% in the 2013/2012/2011 surveys). The range of results this year was similar to last year, with the "optimists" predicting an ERP around 6%, with the "pessimists" close to 2.5%.



Whilst the average ERP expectation rose over the year, the majority of respondents (52%) to this year's survey indicated that their expectation had not changed over the year – the difference in results due to different individuals taking the two surveys. Almost 35% of respondents this year said that their expectation had decreased over the year, while the remainder (14%) had raised their ERP from the previous year. It is interesting to note however that the change in the average is roughly tracking the dividend yield on the ASX, which is perhaps something of an anchor point.

Investing in Australian shares provides many investors with franking credits, the value of which will vary depending on the tax rate of the investor. The above results for the Australian ERP included an allowance, on average, of 1% for these tax credits – although results varied from 0% to 1.5%. Without this allowance, the Australian ERP would have been 3.8%.

The ERP for international shares was generally slightly higher than for the Australian market. On average, respondents assumed that global markets would produce around 40bps more return than Australian shares (after removing the allowance for franking credits). However, the majority of those surveyed (46%) assumed no premium for investing globally, as shown in Graph 2.

Emerging markets, which are typically viewed as more risky, were expected to produce a commensurately greater return to offset this higher risk. On average, the survey showed a 1.6% premium for investing in emerging markets over international shares. However, over 20% of respondents expected a premium of 3% or more.

Most people (52%) used a variety of methods for determining the equity risk premium, with forward looking measures (21%)

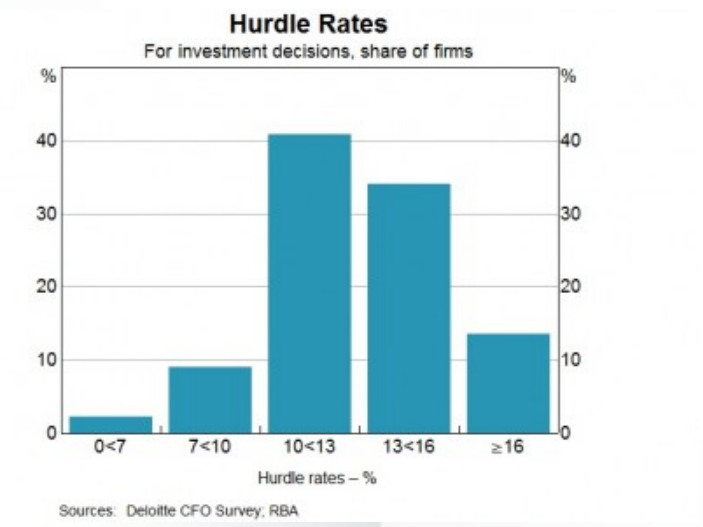
more prevalent than historical data (17%) for the rest. The methodology for determining the ERP ranged from detailed modelling to "gut feel based on 40 years' experience". Gut feel has a bad name in some quarters (See Juha m Alho (1992) Estimating the Strength of Expert Judgement: The Case of US Mortality Forecasts) but only time will tell which method proves to be most accurate.

Uses

The importance of the ERP was highlighted in the responses as to how it is used. Almost two-thirds of respondents (66%) used the ERP in asset allocation/portfolio construction decisions. As such, it is unsurprising that 60% of people indicated that over estimating the ERP would result in excessive exposure to equities – and 79% indicated that under estimating the ERP would lead to an inadequate investment in equities.

The ERP is also used in the valuation of assets (28% for unlisted assets and 24% for listed assets). Rejection of projects which were actually profitable was highlighted by a quarter of the survey responses as an impact of over estimating the ERP. Under estimating the ERP could result in excessive investment in longer term projects (11% of responses).

On this score, a speech by Phillip Lowe of the RBA last year highlights what may be a major obstacle to economic growth in the years ahead. He produced the graph below, noting that the hurdle rates of return that firms use for new investments are "quite sticky and that they are not very responsive to movements in interest rates":



Investment in new long term projects (think particularly renewable energy and infrastructure), will be severely curtailed if shareholders are expecting returns of 6% real and managers are not investing in projects with an expectation of return of twice that. Actuaries in the UK have been concerned about this issue for some time. (See Lewin C.G., A. Carne, N. F. C. De Rivaz, R. E. G. Hall, K. J. Mckelvey and A. D. Wilkie, (1995) 'Capital Projects'. *British Actuarial Journal* 1.2 pp. 155-249)

In addition, 17% of respondents indicated that the ERP was used in the valuation of liabilities. Over estimating the ERP in this circumstance could result in the underfunding of superannuation or other liabilities (43% of responses). Under estimating the ERP could result in excessive caution in determining defined benefit contribution rates (21% of responses).

About the survey: This year's survey took place from the 9th to the 19th December 2015. As with last year, 29 people completed the survey. As such the results of the survey should not necessarily be taken as an indication of the results of the full profession. Investment was the most populous practice area (42%), followed by Superannuation (31%), Life (23%) and General Insurance (15%). More than half of respondents had over 20 years' experience.

In line with previous years, we defined the ERP as 'the expected excess of the return of the market portfolio of equities over the long-term sovereign bond rate'. As such, the Australian ERP is defined as the expected return on the Australian share market (the S&P ASX 200 Accumulation index is a reasonable proxy) less the 10-year Australian government bond yield.

How to lose your shirt in private health insurance: Part one

By Jamie Reid, Hadyn Bernau, Matthew Crane and Andrew Matthews

In this first instalment of a two-part series, actuaries working in the Private Health Insurance (PHI) industry examine the prudential risks to capital in PHI in Australia.

What we're asking:

- *What are the circumstances that could cause you to 'lose your shirt' in PHI in Australia?*
- *How might you build financial readiness and resilience?*

In order to identify the types of circumstances, we study the drivers of previous occurrences of financial distress for private health insurers. We also consider whether the reasons that general insurers fail are also relevant to private health insurers.

We then look at how capital can be used and managed to avoid an insurer 'losing its shirt'—both from the regulator's perspective and from an insurer's perspective.

As such, the roadmap for the articles are:

Part one

1. Recent history of stresses and failures in PHI
2. Potential causes of failure in general insurance, and the implications for PHI

Part two

1. How the regulator (APRA) uses capital to build insurer resilience
2. How private health insurers manage capital to build resilience
3. Conclusions

Our intention is that this article will help inform discussions around:

- the nature of these circumstances and how they differ to general insurance;
- minimum regulatory requirements; and
- capital management policy considerations for resilience in the face of stresses.

1. Recent history of stresses and failures in PHI

Here we list the primary contributing factors to and broad themes behind 14 instances of financial distress for Australian private health insurers between 2000 and 2012, derived from an internal study conducted by the Private Health Insurance Administration Council (PHIAC). This is not an exhaustive list of factors—if one studies the instances through other 'lenses', other factors such as quality of governance, strategy and relationships could also be identified.

Under-pricing – 100% of instances

More specifically:

- under-estimation of benefit costs for new products, new markets or new policy holders occurred in more than 80% of instances;
- forecasting did not reflect all the key drivers of experience (in particular drawing rates by duration of membership) in more than 80% of instances; and
- intentionally setting low prices to drive growth occurred in around 30% of instances.

Capital management – more than 80% of instances

More specifically:

- there were thin capital targets in around 40% of instances; and
- there was a lack of robust capital management practices (including setting targets and triggers, regular monitoring, and implementing remedial management responses) in more than 80% of instances.

Rapid membership growth (exceeding 10% p.a.) – around 70% of instances

This included:

- intentional strategic growth in around 40% of instances; and

- unplanned growth as a result of a Government policy change (for example, the introduction of lifetime health cover loadings in 2000 caused PHI participation to increase by around 50% in the space of a few months) in around 50% of instances.

Membership shrinking in around 10% of instances. This led to anti-selective lapses and joins and spiralling prices.

In summary, all of the 14 instances of financial distress in PHI were caused by deficiencies in at least one of:

- pricing practices;
- capital management practices; and
- growth management practices.

All 14 instances involved weaknesses in pricing practices, and 10 also involved rapid membership growth.

Importantly, financial failure was averted in two instances because the insurers were able to carry out their capital management plans and triggers, and as a result they implemented premium increases of greater than 14%. However, the other 12 instances also involved capital management problems, which led to more serious distress.

Government decisions were a contributing factor in 10 out of 14 instances—either through a policy change leading to a surge in membership, and/or through Ministerial intervention in the annual premium increase process.

Investment losses played a secondary role in only one case, and inadequate provisions played a minor role in one other case.

2. **Potential causes of failure in general insurance, and the implications for PHI**

We now list the reasons for failure in general insurance and comment on whether these could also be principal causes for failure in PHI.

Catastrophic events – this is not a principal risk of failure for Australian private health insurers. Primary and public healthcare would absorb most of the cost of a catastrophic health event (such as a pandemic).

Inadequate provisions – this is not a principal risk of failure for Australian private health insurers. Provisions represent a small proportion of annual claim costs.

Inadequate premiums – this is also a principal risk of failure for Australian private health insurers. It includes risks relating to product design changes—i.e. the premium is insufficient for the product. However, the short-tailed nature of PHI means that under-pricing should become apparent quickly. Corrections can be made quickly because private health insurers are allowed to make adverse changes to benefits with only a small amount of notice to customers.

Rapid growth – this is also a principal risk of failure for Australian private health insurers. Combining rapid growth with inadequate premiums means private health insurers may become insolvent before corrective action can be taken.

Significant change in business – this is not a principal risk of failure for Australian private health insurers. Private health insurers are monoline (although a private health insurer's membership base could change rapidly due to inadequate premiums or a new product suite – see above).

Mis-stated accounts / fraud – this is also a principal risk of failure for Australian private health insurers. However, the short-tailed nature of PHI means that there is less scope for mis-statement of outstanding claims or unearned premiums.

Impaired affiliate – this is not a principal risk of failure for Australian private health insurers. Most Australian private health insurers are largely focussed on PHI only. APRA's prudential standards should ensure the insurer remains solvent if a related entity fails (although, the same should be true for Australian general insurers).

Reinsurance failure – this is not a principal risk of failure for Australian private health insurers. Private health insurers do not reinsure, except in limited small-scale circumstances.

The key risk that is more significant for private health insurers than for general insurers is the potential for Government decisions (policy and premium approval) and structural reform to drive sudden growth or reduced profitability.

See the full report here: How to lose your shirt in Australian private health insurance.

Magic Teller Machine Solution

By Oliver Chambers

Oliver Chambers outlines the solutions to his Magic Teller puzzle and announces the winner of the first instalment of The Critical Line series.

We had three correct entries to the Magic Teller Machine puzzle. Congratulations to: Tim Hillman, Ting Chen, and Paul Swinhoe. This month's winner was **Paul Swinhoe** who will receive a $50 book voucher. Unfortunately, we didn't receive any correct proofs of the Riemann Hypothesis.

The Magic Teller Machine:

You have several coins. Each of these coins has a front and a back, and on each side of the coin is a non-negative integer. We can represent a coin as the ordered paid $\langle x,y\rangle$ and the value of each coin is the sum of the integers on the front and back, $x+y$. In front of you is a magic teller machine, it knows the contents of your coin purse. If you have a coin $\langle x,y\rangle$, but you do not have either the coin $\langle x+1,y\rangle$ or $\langle x,y+1\rangle$, then the MTM will allow you to exchange your coin $\langle x,y\rangle$ for two new coins $\langle x+1,y\rangle$ and $\langle x,y+1\rangle$. You are allowed to make any (finite) number of transactions with the MTM. The aim of the game is to make a sequence of transactions with the MTM so that all of your coins have a value greater than 2. Is this possible in either of the following scenarios:

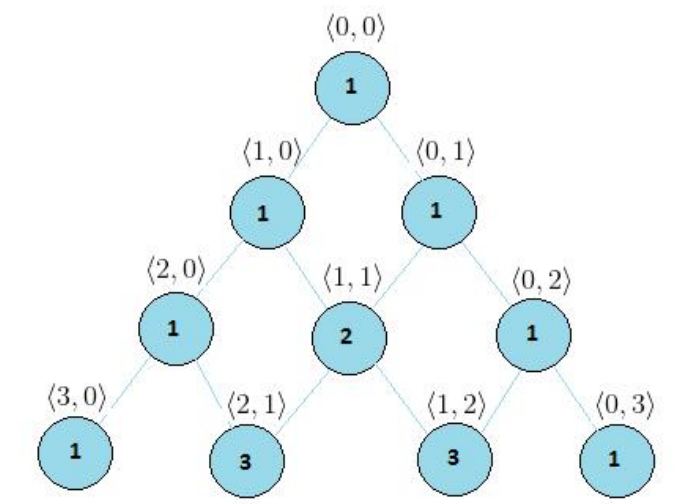
1. *You start with the 6 unique coins with a value at most 2: $\langle 0,0\rangle,\langle 1,0\rangle,\langle 0,1\rangle,\langle 2,0\rangle,\langle 1,1\rangle,\langle 0,2\rangle$*
2. *You start with a single coin of value zero: $\langle 0,0\rangle$*

Demonstrate that you can exchange your coins until they all have a value greater than 2, or prove that it's impossible.

Solution 1:

We will show that it is impossible to convert the coin $\langle 0,0\rangle$ into coins with value greater than 2 in a finite number of moves. This will also show that scenario (a) is impossible.

Suppose, for the sake of contradiction, that we have a finite sequence moves that will exchange $\langle 0,0\rangle$ into coins of values greater than 2. For each coin $\langle x,y\rangle$ we will consider the minimum number of times that this coin will appear in our collection of coins throughout the strategy (i.e. not at the same time). Clearly $\langle 0,0\rangle$ appears once and it must be exchanged with the MTM. This will produce two coins $\langle 1,0\rangle$ and $\langle 0,1\rangle$. These must also be exchanged with the MTM (as they have value less than 2) and so on. This is illustrated in the diagram below:



The bottom row of the diagram shows coins with value 3. The coin $\langle 2,1\rangle$ will appear in the collection of coins 3 times. We must exchange that coin with the MTM at least twice (because we can only have one coin $\langle 2,1\rangle$ at the end).

For a positive integer k, consider the wallet of coins $W(k)=\{\langle k+2,k-1\rangle,\langle k+1,k\rangle,\langle k,k+1\rangle,\langle k-1,k+2\rangle\}$.

Let $P(k)$ be the proposition that the minimum number of times that each of these coins appear in our possession is at least $1\times\langle k+2,k-1\rangle,3\times\langle k+1,k\rangle,3\times\langle k,k+1\rangle,1\times\langle k-1,k+2\rangle$. The bottom row of the above diagram demonstrates that $P(1)$ is true. We will show that $P(k)$ implies $P(k+1)$.

Notice that if $P(k)$ is true then at a minimum we must exchange both $\langle k+1,k\rangle$, and $\langle k,k+1\rangle$ with the MTM twice. This produces $2\times\langle k+2,k\rangle, 4\times\langle k+1,k+1\rangle, 2\times\langle k,k+2\rangle$.

In turn this implies we must exchange $\langle k+2,k\rangle, \langle k+1,k+1\rangle$, and $\langle k,k+2\rangle)$ leaving at least $1\times\langle k+3,k\rangle, 3\times\langle k+2,k+1\rangle, 3\times\langle k+1,k+2\rangle, 1\times\langle k,k+3\rangle$, which is $P(k+1)$.

By induction this implies that every coin in $W(k)$ for every k must appear in our collection of coins at some point in our strategy, but this requires an infinite number of moves – a contradiction! So we have demonstrated that both cases are impossible.

Solution 2:

With a little bit more work and ingenuity we can also show that both cases are impossible, even with an infinite number of moves.

First, let us apply a weight to each coin $\omega(\langle x,y\rangle)=2^{-(x+y)}$. We have chosen this weight because $\omega(\langle x,y\rangle)=\omega(\langle x+1,y\rangle)+\omega(\langle x,y+1\rangle)$. That is, one transaction with the MTM preserves the total weight of the coins.

Summing a geometric series we can calculate the weight of all the coins as $\sum_{x\in\mathbb{N}_0}\sum_{y\in\mathbb{N}_0}\omega(\langle x,y\rangle)=4$.

- The weight of the 6 coins with value at most 2 is $(1+\frac{1}{2}+\frac{1}{2}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4})=2\frac{3}{4}$. The weight of all coins with a value greater than 2 is $4-2\frac{3}{4}=1\frac{1}{4}$. Because each transaction preserves total weight of the coins we cannot convert all of our original coins into coins with value greater than 2, so case-a is impossible.
- We will extend the logic for case-b. Starting with a single coin, after any number of transactions, we can have at most 1 coin of the form $\langle x,0\rangle$ and 1 coin with of the form $\langle 0,y\rangle$ for $x,y\in\mathbb{N}$. The weight of all coins $\langle x,0\rangle$ with value greater than 2 is $\frac{1}{4}$, and the largest weight a single coin of this form can take is $\omega(\langle 3,0\rangle)=\frac{1}{8}$. This means that the potential weight of coins with value greater than 2 reduces to $1\frac{1}{4}-(\frac{1}{8}+\frac{1}{8})=1$. Further note that the number of coins we can have of the form $\langle x,1\rangle$ is equal to the number of transactions we make of a coin with the form $\langle x,0\rangle$. This means we could never have both the coin $\langle 3,0\rangle$ and more than 3 coins of the form $\langle x,1\rangle$. This reduces our bound to strictly less than 1. So again we cannot convert the coin $\langle 0,0\rangle$ into coins with value greater than 2, even with infinitely many moves.

Risk Culture Measurement

By Sean McGing and Andrew Brown

Sean McGing and Andrew Brown share their research and ideas on risk culture in banking and life insurance practices.

In recent months the topic of Risk Culture has burst on to our screens – yet again.

This time everyone is lamenting the poor culture reflected in certain banking and life insurance practices. Industry specialists believe that these poor practices results in some customers being treated unfairly. Labor is calling for a Royal Commission into Bank practices and ASIC is being given an extra $122m in funding for high intensive surveillance of the insurance and banking industries.

We thought it timely to share some thoughts on how risk culture in organisations can be measured and better understood to mitigate risks as part of a comprehensive enterprise risk management program.

The Sydney Morning Herald
BusinessDay

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Banks have work cut out in fixing culture: regulators

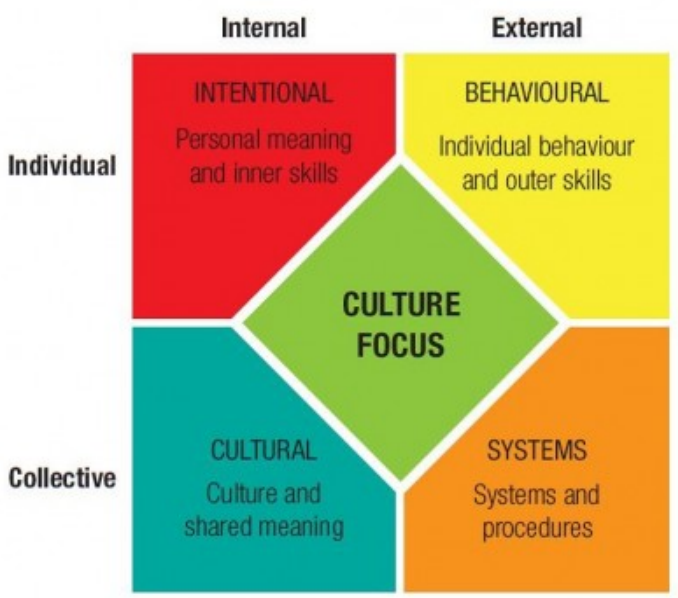
March 23, 2016

Clancy Yeates and Peter Ker

Risk culture in organisations

An organisation's risk culture describes the degree to which its culture encourages or limits the taking of risks and the opportunities that arise from those risks. It is about people's individual and collective behaviours. A culture constantly evolves through various stages of maturity.

Ken Wilber, integral philosopher, has summarised four aspects of a system into his integral model. In any organisation, the way these four aspects operate together shapes the culture.



Wilber's Integral Model

Source: Putz, M. (2006): AQAL: Journal of Integral Theory and Practice,
2006, Vol 1, No 1, Integral Business and Leadership: An Intermediate Overview

The culture of an organisation is heavily influenced by its individual and collective behaviours. To move an organisation to a more mature risk culture requires an understanding of its people's behaviour(s), beliefs and mindsets. To support and reinforce any cultural change, it is also essential to have in place appropriate systems and structures.

Measuring risk culture

If culture is important to ERM, then we have to find a way to measure it. The case for measuring culture seems very straight forward – by measuring culture we are better able to assess the effectiveness of our attempts to shape or control it. In financial services APRA as the regulator effectively expects you to measure culture in order to manage it. But that has its challenges:

1. We need to be careful that any changes in results are due to changes in the underlying culture and not changes in how the measurement is being applied.
2. The harder that things are to measure, or the more subjective they are, the more likely it is for people to ignore or discount the results.
3. Measurement of the culture isn't independent of the culture – measuring signifies importance, and can change people's awareness and perceptions of the cultural questions, leading to shaping of views and being more likely to act differently.
4. The type of measurement that is appropriate will also depend on the stage of organisational maturity.

Methods of measurement

There are several ways to measure risk culture.

- Surveys
- Staff interviews
- Focus groups
- External stakeholder interviews
- Social media reviews
- Review of operational processes
- Training

These measures broadly cover off Wilber's four quadrants.You must balance quantitative with qualitative. Measuring regularly such as annually enables changes and trends to emerge and be assessed. Surveys and staff interviews are the most common and the easiest. The survey needs to be designed very carefully. It can be incorporated as part of the annual staff survey particularly if the organisation's risk culture has already evolved to a level where people are consciously aware of the culture and the impact it has on performance.

Findings and insights into risk culture across industries

We undertook a pilot risk culture measurement exercise as part of our research. We conducted (mostly) face-to-face interviews with a limited number of Chief Risk Officers in organisations across financial services, education and energy. We also analysed and compared the online questionnaire responses by our interviewees. The most important aspects of an effective risk culture in their eyes were:

1. Tone from the top AND tune from the middle.
2. Open and effective communication in a safe environment.

Awareness, understanding and ownership of risk at all levels.

The insights we gained were:

1. The driving force behind best practice risk management across an enterprise is the evolving culture.
2. There are more similarities than differences across industries / areas.
3. Cycles are essential for learning. A long memory - of the bad events - helps.

Original research is from our paper presented to the Actuaries Institute Financial Services Forum in 2014.

See also, Sean and Andrew's other article *'Board Leadership in a Complex World - Optimising value from risk and opportunity'*

Actuary campaigns for 'Better Bennelong' in 2016 Election

By Stephanie Quine

With the date set for the Federal Election, actuary Martin Mulcare is ramping up his campaign to run as an independent candidate in the safe Liberal seat of Bennelong. He discusses how actuarial skills are guiding his campaign efforts and vision, as Australia grapples with housing affordability, health and economic challenges a week on from the Budget.

"Actuaries are not well known among the general public. But those who recognise the profession respond very positively", says Martin, speaking from his experience of introducing himself to the extended community of late.

After qualifying as an Actuary in 1986, Martin spent the next 20 years in the financial services industry, working with small life insurers; consulting; and in a Chief Actuary role before transitioning to general management.

"My actuarial training has been the basis for this idea of coming up with evidence-based policies. Analysing data, making some sense of it, exploring options and coming up with recommendations is, in essence, my approach to policy," he says.

Since 2005, Martin has worked as a facilitator and business adviser. He is also heavily involved in the profession through the Actuaries Institute.

"Most actuaries have a pretty good handle on project management so that's pretty helpful for the campaigning side of what I'm doing here too," he says.

"There's also a strong tradition as professionals to seek peer review. I've run my campaign issues past many people from different disciplines and that's been really helpful on things like brand, video, positioning, and websites."

Like Helen McLeod, an actuary running against Josh Frydenberg in the blue-ribbon Liberal seat of Kooyong, Victoria this election, Martin hopes to represent his community as well as his unique profession, in the public arena when he runs for the seat of Bennelong in the Federal election this year.

With a double dissolution election set for July 2, now is the time for bringing issues of national significance to the 'kitchen table'.

The importance of differentiation

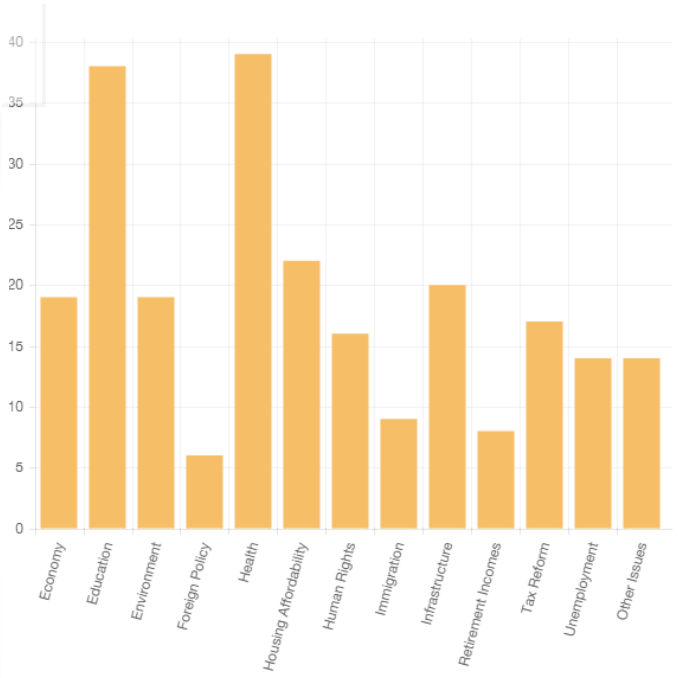
Martin hopes to differentiate himself from the major parties by, of course, being independent, but also highly transparent with his voting actions.

He takes lessons from independent Cathy McGowan, who wrestled the regional Victorian seat of Indi from Sophie Mirabella as an independent in the 2013 election.

"People often ask 'how does an independent vote when a party doesn't tell them what to do?' For every formal vote taken in parliament, Cathy McGowan posted on her website how she voted, how the government voted and how other non-major party members of government voted so it was very easy to see when she was disagreeing or agreeing with government and other non-major parties," Martin says, adding that he plans to borrow this idea if elected.

Martin also plans to differentiate himself from smaller parties by not being a 'single issues' person. He will look to emulate Cathy's concept of 'kitchen table conversations' which are "all about

getting people to take an interest in issues and be informed," he says. For example, Martin has asked the people of Bennelong to rank issues by importance (see below graph) and he has prepared 'issues kits' for individuals and community groups.



The challenge is to come up with a reasonably understandable, coherent story about each of these big issues," says Martin. "My main focus is providing forums and information that will encourage people in my area to have some well-founded discussions about these critical areas."

At a time when Australia's mining and manufacturing sector is in decline, Martin has three priority areas he sees as underpinning his election platform:

- Innovation and education
- Social Welfare
- Taxation

A week on from the Budget, Martin believes there remains a lack of quality in the conversation around key issues facing the nation. The emphasis on a 'political' budget, especially with three-year terms, severely impedes our national progress. I think it is time to change the system. That's why I'm standing."

Sustainability and Coincidence

By Lindsay Smartt *(smartt@ozemail.com.au)*

President Lindsay Smartt pens his second column, reflecting on society and the actuarial profession in the context of change, opportunity and development.

I'm writing this column on the eve of our Asia visit. Together with our CEO, David Bell, I will be hosting dinners and lunches with Members, as well as holding discussions with the actuarial associations and regulators. I always enjoy meeting Members and also exploring areas of common interest. I also find that discussions with other actuarial associations and regulators not only enhance understanding (hopefully in both directions) but can sometimes lead to innovations of benefit to our Members. More on Asia in my next column.

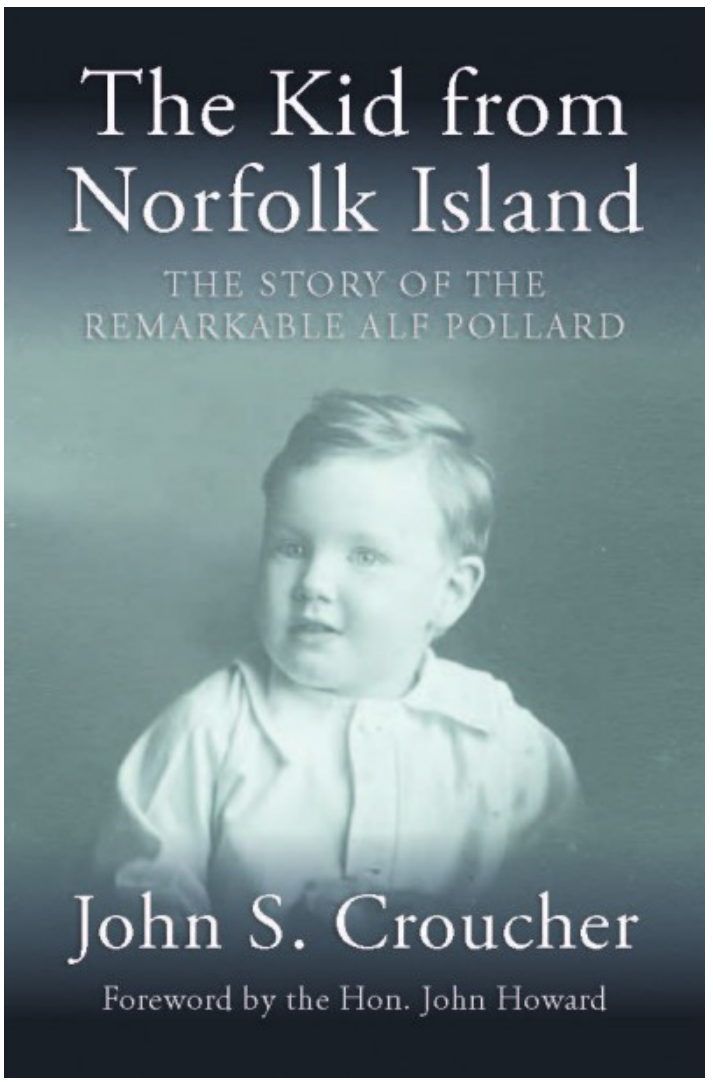
I was recently on holidays and took the opportunity to read 'The Kid from Norfolk Island', Alf Pollard's biography written by Professor John Croucher (see Jenny Lyon's book review in *Actuaries Digital*). I attended the book launch, by our former Prime Minister John Howard, and caught up with Pollard family members and many actuaries. Whilst knowing John, Geoff and

Ian, I had only met Alf on a couple of occasions. Despite knowing well his extensive accomplishments and achievements and his global reputation, well beyond actuarial circles, I was keen to find out more about this quite unique individual, Alf Pollard.

I certainly was not disappointed – a very engaging account of an outstanding man who lived a life and achieved what can only be described as exceptional.

Apart from learning of background, details and many and varied encounters and events in Alf's life, I was surprised with the number of times that places, people and organisations that were mentioned in the book crossed paths with my life experiences. Some fairly obvious connections such as Macquarie University, MLC and Munich Re were unsurprising. However, when I read in the book of The Peoples Palace, Hawthorn, Canterbury Boys High, Henry St Ashfield, EU at Sydney University, Ron Giovanelli at the CSIRO Department of Physics and Eva Burrows, I found personal memories were triggered. Perhaps this coincidence made me engage with the book in a different way.

As I thought about some of the situations described in the book, I found myself reflecting on our society and profession in the context of change, opportunity and development. So far as our profession is concerned, three questions came to mind.



1. According to the book the population of Victoria grew from 17% to 47% of Australia's population over the 10 years to 1861 (a time when Australia's population itself more than doubled!) This was the time of extraordinary opportunity and people grasped it readily.

   Question: Is this a time of extraordinary opportunity in our profession waiting to be grasped?

2. The book described Sydney's tram system of 1930 as not only the largest in Australia but the second-largest in the British Empire. Sydney CBD streets are presently in chaos while trams are being reintroduced. I am no expert on trams and I am not trying to be political, but like me, many Sydneysiders are now asking why we removed trams only to find we now need them.

   Question: When we make decisions to change, how can we guard against short term expedience at the expense of long-term sustainability?

3. The pioneering Macquarie University actuarial program, launched in the 1960s, was unique in the actuarial world and was, some say, a "brave" experiment. Its track record and results speak for themselves. Other Australian university programs were born (there are now seven universities accredited), Australia has been innovative and led actuarial educational developments.

   Question: Is our current education system in Australia for actuaries sustainable or does it need to adapt for the current environment?

You may recall that *sustainability* is one of the themes I'm focusing on in my year as President. The above questions boil down to a question of sustainability. In its decision making, Council has a clear focus on sustainability and I can assure you that Council is engaged on these questions.

Actuarial Community

I also spoke in my Presidential Message of the importance of a strong actuarial community. In this section of my column, I'll keep you updated on happenings in my interactions with our actuarial community.

It's been a busy start to my year as President. I've caught up with many of you at events and dinners around our vast country. I haven't made it to Tasmania yet, but hope to find time in the schedule for a visit before too long.

Council has settled into its new operating rhythm with two new members joining in 2016. We started the year with a strategy day, where the energy and discussions ensured we set ourselves up well for the year ahead. As you would expect, there were no major changes in strategy but rather affirmation of direction combined with some fine tuning. I encourage you to have a look at the output if you haven't done so already. It describes our focus and priorities.

Chairing Council is one of my key roles as President, guiding the agenda and ensuring we have a balanced discussion and all views are heard before decisions are taken.

Council had a constructive and wide-ranging discussion with the President of the US Society of Actuaries, Craig Reynolds, when he visited Australia with Senior Director International, Ann Henstrand.

You can view the Report here on the first Council meeting of the year in case you missed it.

Regarding Council, the culmination of the Governance Review Taskforce was the constitutional changes voted in at the AGM held on 27 April 2016. The changes mean that there will be three vacancies for election each year rather than the variable numbers we had previously. Council terms have been reduced from four to three years, with the distinct advantage that a shorter term should make the role more attractive to potential councillors.

In the public policy arena, we released our second Green Paper 'Unlocking Housing Wealth – options to meet retirement needs', as well as lodged 12 submissions on a range of issues. Work is also underway on a third Green Paper on the impact of big data on the future of insurance. I hosted two successful round tables over lunch with journalists and we have another planned in Melbourne in coming weeks.

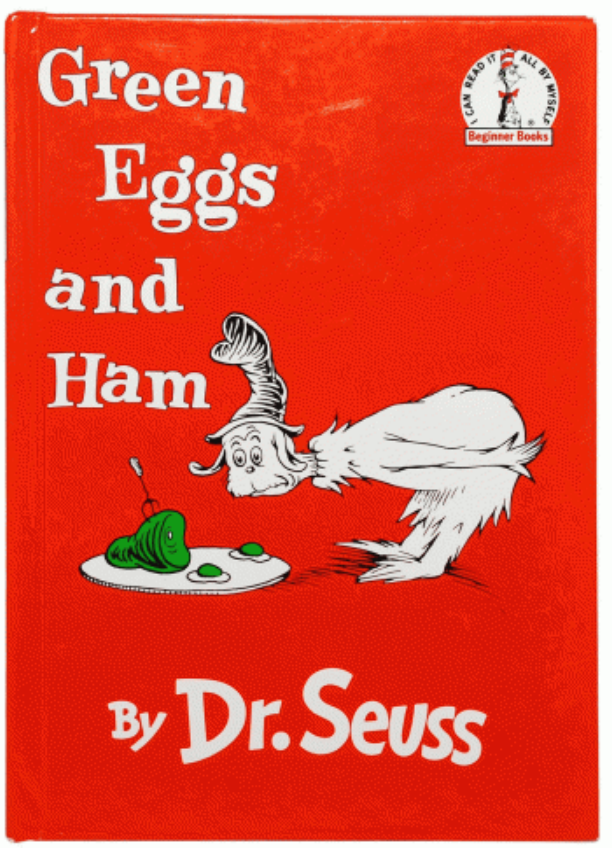
I look forward to catching up with many of you at the Financial Services Forum in Melbourne on 16 and 17 May.

Dr Seuss on Life Insurance

By Ilan Leas *(Ilan.Leas@PacificLifere.com)*

Ilan Leas has a whimsical outlook, on how the future of Life Insurance connects to a Dr Seuss Book.

Of all the novels by Dr Seuss, my daughter's favourite is the story about a Cat that gets offered some green eggs and ham repeatedly but continues to refuse to eat them. Perhaps this was because the Cat didn't like to try new things or was afraid of change but eventually through the sheer persistence of Sam I Am, the Cat took a bite and as in any children's book ending, it emerged that he loved them. The Life Insurance Industry has been on a bit of a green eggs journey these last few years, but are we expecting a happy ending?



We've been operating through a period of volatile profit results. Whilst insurers have struggled, the reinsurers were hardest hit (in the period from 2008-2014 for example, reinsurer profit as a % of net premium was 0.1% before allowing for retrocession losses). With significant price rises in Group Risk (that are recently starting to adjust back downwards) and some increases on individual disability income rates, profitability seems to be normalising again.

"You're in pretty good shape for the shape you are in"[1]

In the Group space, capacity is returning far quicker than expected. Insurers have increased participation in tenders in 2016, sometimes without reinsurance support. From the reinsurance side, as a crude analysis of the top 20 Funds in the Group Risk space, the average number of local reinsurer participants (call this a 'Capacity Index') has gone from 1.4 in 2013/2014 to 1.7 in 2015/2016. We are also seeing capacity coming in further through offshore reinsurers (with some challenges around the ability to conduct business locally) and local insurers have at times even participated as reinsurers. On average, this adds another 2 participants to the 2015/2016 index value.

Price competition has also been strong in late 2015/2016 but there still remains the key question of what really changed? Much like the Cat just changing his mind, if we aren't really getting better data than before and products haven't really shifted in design, I wonder to what extent emotion (fear of loss of market share) is driving not only participation but also a reversion to some of the behaviours that caused the problems in the first place? Traditionally we have a bit more time to learn from a period of past losses but one hopes that this cycle of 'haven't we been there before' isn't about to return within the space of 2-3 years.

Some big positives though are the engagement by trustees in the Group Insurance space (pleasingly, funds are increasing their use of actuaries in particular to support their business).

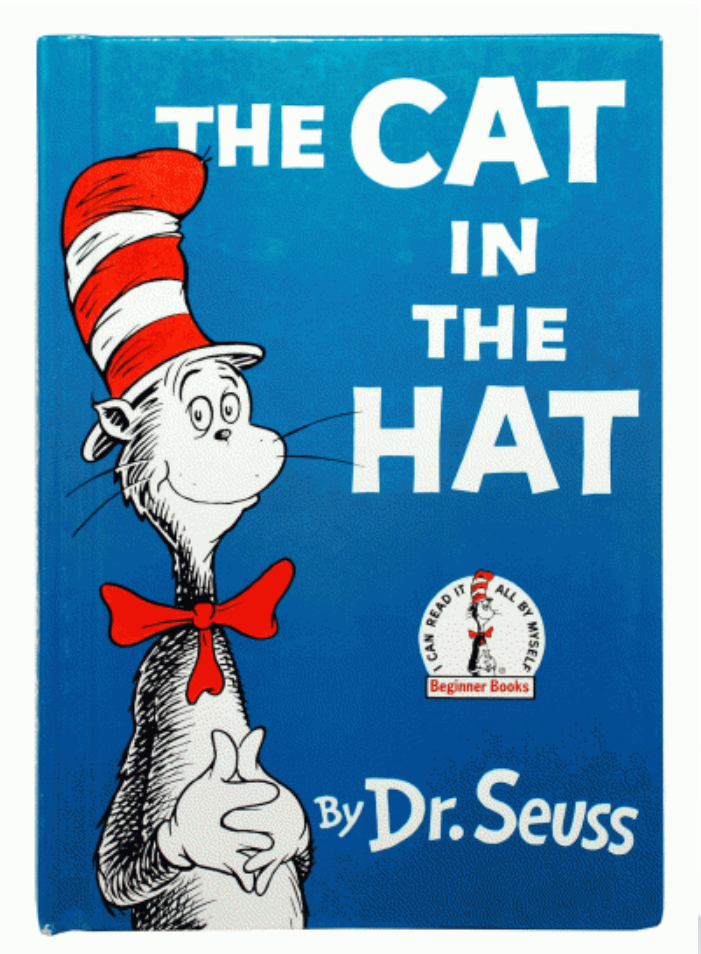
"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not."[2]

On the individual side, there have been some significant industry challenges that all seem to have come at a similar time. There

has been some negative press on claims practices and quality of advice which (aside from how the various offices are addressing) raises some interesting questions on how actuaries can and should get more involved on these fronts. The FSC is developing the Life Code of Conduct and some regulatory changes are on the way such as the Life Insurance Framework and IFRS to name a few. Some of these are expected to lead to a change to the playing field. As with any disruption, there will be winners and losers so this could be one of the more interesting times for actuaries to play a key (and creative) role in implementation of better outcomes for policyholders. Insurers are looking at alternative reinsurance models and there is a strong shift towards better servicing (be it at acquisition or at the claims end) that is driving a number of insurers' strategies. Again this is an opportunity for actuaries to get more involved with the broader business.

"I know it is wet and the sun is not sunny, but we can have lots of good fun that is funny."[3]

It is with



a lot of excitement that I will be picking up from Bozenna Hinton the role of Convener of the Life and Wealth Practice Committee. Bozenna has done an incredible job of contributing to the LIWMPC for the past 3 years and the wider profession, and she now looks towards getting more involved on the international actuarial side. On behalf of the team, we would like to thank her for all her huge efforts and time and wish her the best of luck in the future.

From the com
mittee's side, we have a lot to do. In the short term work is continuing on professional standards, supporting the education review and CPD changes, as well as discussions with industry bodies such as APRA and other cross practice committees. In particular, Tony, Ash and David will be sharing more detail at the upcoming Financial Services Forum so please do join if you are attending the conference.

Lastly, I would love to bring a bit more fun back into the debate and elevate the role of, and the noise that actuaries can make, more broadly. Anyone wanting to be involved - please get in touch with the committee.

1 From Dr Seuss's, 'You're only old once!
2 From Dr Seuss's, 'The Once-Ler'
3 From Dr Seuss's, 'The Cat in the Hat'

Odds are there to be broken

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

The odds of Leicester City winning the English Premier League this year were less likely than Donald Trump winning the Nobel Peace Prize, writes Manager and Actuary at Deloitte, Marc Mer.

We all know actuaries love a good stat. So here's one for the record books.

Leicester City have just won the English Premier League (soccer) title to complete probably one of the greatest upsets in the HISTORY of sport at a whopping 5000-1 odds. These were the longest odds that some bookies had on their market at the time.

This is more than twice as unlikely as your chances of fatally slipping in the bath or shower (2232-1), and ten times as unlikely as being born with 11 fingers or toes (500-1).

To put this into perspective, at the Rugby World Cup last year the Cherry Blossoms (Japan) beat the mighty Springboks (South Africa), defying odds of 80-1, in what was considered one of the greatest upsets in sporting history at the time.

Here are some other punts you could have taken at the time the EPL started (August 2015) that were MORE LIKELY to happen than Leicester's triumph:

80-1 - Finding documented evidence of alien life in 2017

100-1 - Donald Trump to win the Noble Peace Prize

100-1 - Kevin Rudd to be the next Labor leader

1000-1 - Robert Mugabe to win the Noble Peace Prize

1000-1 - Hugh Hefner to admit he's a virgin

2000-1 - Kim Kardashian to become the US president

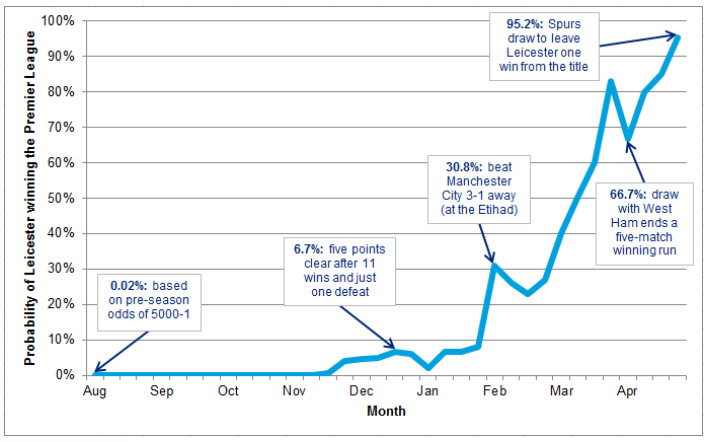
2000-1 - Elvis Presley showing up alive

2500-1 - Vinnie Jones to win best actor

2500-1 - David Cameron to replace Tim Sherwood as Aston Villa (soccer) manager

The graph below shows how the betting market's assessment of Leicester City's title chances changed during the season, and especially as their feat started becoming a real possibility from February.

This is Leicester's implied probability of winning the league, based on Ladbroke's match-by-match title odds.



It is truly remarkable how this (relatively) small team from the East Midlands of England, in a league dominated by huge spending and billionaire backers, were able to pull off this feat. The total cost of their squad was £50m. This sounds like a lot of money spent on a bunch of supposedly "average" mere mortals, but it is nearly ten times less than the likes of Manchester United and Manchester City who have near half-a-billion pound squads!

Using the pre-season odds, if Leicester were to play in the Premier League for the next 4999 years, we would not expect them to repeat this feat!

What's that I hear you say about being able to withstand a 1 in 200 year loss event and still remain solvent? Surely 1 in 200 is so unlikely it will never happen? I intend this article to be more light-heartened than an analysis of Regulatory Capital requirements, but it does make one think...

Nonetheless, it is remarkable for the game, and certainly keeps us statistically-oriented folk on our toes.

Sources: Ladbrokes, Paddy Power, William Hill

Budget injects fairness into retirement incomes system

By Elayne Grace and Michael Rice

The Actuaries Institute welcomed the 2016-17 Federal Budget this week, citing policy changes designed to inject more equity and fairness into the retirement incomes system.

The 2016 Budget introduced the largest changes to the superannuation sector since the Costello Budget of 2007. It has further simplified the system while reinstating equity. 96% of individuals with superannuation will not be adversely affected by the changes.

In the Institute's media release of 3 May, Institute President Lindsay Smartt commented that “overall the Budget changes improve the system, making it fairer while also increasing revenue to assist the economy in these financially constrained times." He further commented that “the Institute believes these changes will help to meet the Government’s objective of superannuation, which was adopted from the Financial System Inquiry – to provide income in retirement to substitute or supplement the Age Pension."

The Institute has argued consistently for superannuation reform to focus on the development of innovative retirement income stream products over lump sums to better manage longevity risk in Australia’s ageing population and added that it was pleasing to see the extension of tax exemptions to retirement products such as deferred lifetime annuities and group self-annuitisation products.

President Lindsay Smartt further commented "we acknowledge the doubling of the tax rate on superannuation contributions for people who earn more than $250,000 a year, which, together with a reduced concessional contributions cap, raises an estimated $2.5 billion for the federal budget over the forward estimates."

The changes to Transition to Retirement (TTR) are aimed at reducing the benefit for wealthy people who use it for tax reduction purposes. However, the Institute noted that the change also makes it less attractive for those on average incomes and goes against the original intent of TTR which was to encourage people to work longer and provide a mechanism where people can gradually phase down.

In its media release, the Institute welcomed the following budget measures designed to achieve longer term structural reform in retirement incomes:

► Introducing a $1.6 million transfer balance limit on the amount that can be transferred to taxfree retirement phase accounts (thereby receiving tax concessions on investment earnings rather than being taxed at 15%);

► A 30 per cent tax on concessional contributions for those earning over $250,000 per annum;

► Removal of regulatory barriers on the development of retirement income stream products such as deferred lifetime annuities;

► Retention of the low-income super contribution (LISC) now renamed LISTO, which is a payment of up to $500 to help low-income earners save for retirement. The Institute also said it would continue to encourage the Government to focus on:

The Institute also said it would continue to encourage the Government to focus on:

► Including estimates of the future costs of natural disasters in the budget’s Statement of Risks. This could entail development of Government policy to improve resilience against natural disasters and to design funding mitigation and adaptation measures supported by comprehensive cost benefit analyses.

► Undertaking ongoing research into understanding and managing the financial and economic implications (risks and opportunities) of climate change and take action to reduce greenhouse gas emissions, improve energy efficiency and the development of renewable energy sources. We also support the development of policy to address the significant implications for Australian business and society from the transition to a low greenhouse gas economy.

Institute Deputy CEO and Head of Public Policy Elayne Grace and Michael Rice, Convenor of the Institute's Public Policy Council Committee attended the Budget LockUp and produced this detailed report for Members.

The "How" of Person-to-Person Communication

By Gautham Suresh

It's becoming increasingly apparent across the workplace and even in the way our professional exams are being conducted that "communication" is steadily becoming the buzz word of the profession.

Appropriately, the Young Actuaries Program (YAP) in Sydney thematically kicked off the year strongly by inviting a well-known and experienced actuary, Martin Mulcare, as our guest speaker for the first YAP seminar of 2016. Using examples from his vast professional experiences (both the good and the bad) as well as his general observations, Martin presented on the key elements that support the foundations of the "how" of person-to-person communication.

Martin facilitated an energetic session for close to 40 YAP members highlighting a variety of important but easily forgotten tips to ensure we get across the "what" more effectively. Given the mix and variety of backgrounds of the participants, it made for an inviting discussion of the various elements that bring about effective communication. Some more notable factors that Martin highlighted, which are useful to remind ourselves of, were:

- Differences between communication in person versus via email
- Selecting the right communication mode
- Selecting the right medium
- How to ask better questions

But as the old saying goes, "practice makes perfect". Martin put the participants through a series of group exercises to put us through our paces based on the topics outlined in his presentation. This was followed by a thought-provoking Q&A session where participants had a chance to provide a number of "real-world" scenarios where they have experienced difficulty applying some of the concepts mentioned. One such example was providing "upward feedback" and the appropriate medium and manner to approach this situation.

The YAP committee, on behalf of the YAP members, would like to thank Martin for his time and insight in bringing together the "How" of Person-to-Person Communication.

Look out for future upcoming YAP events on the Institute's event calendar.

Young Actuaries - get with the program

By Candice Ming

Presidents of the Sydney, Melbourne and Brisbane Young Actuaries Program (YAP) explain its mission and colourful calendar of social and professional development events.

The other day, I asked a colleague (ok, my boss) if he was going to a *Young Actuaries Program (*YAP) event he was describing to the rest of the team. "YAP? No, I'm far too old for that!" he exclaimed. "Young Actuary" is a relative term but it made me wonder if YAP had a target audience and if it had a specific agenda. Who better to ask than this year's Sydney, Melbourne and Brisbane YAP committee Presidents?

Sophia Sophos – President YAP Melbourne:

Once upon a time, a group of aspiring actuaries congregated with the aim of serving the junior members of the Institute by hosting more events in Melbourne and presenting topics tailored to actuaries who were relatively new in their careers.

The three wishes were:

- to enhance the soft skills of young actuaries, as the first few years of one's career is often focused on cementing technical skills;
- to equip young actuaries with the knowledge and confidence to accelerate their careers; and
- to provide a networking platform.

Our target audience includes junior members of the profession, newly-qualified and those on their way to qualifying as an actuary.

I helped form this committee as a way to also build my own network as a young professional and a new visitor to Australia. As this story goes, that's exactly what the Young Actuaries Program has provided me with, and I've learnt a few things along the way too!

Kevin Lim – President YAP Brisbane:

Brisbane had its very first event in April 2014. Most people are hazy on the purpose of YAP but it's an initiative to assist aspiring and early-career actuaries with their development in a range of business skills. Events are fully funded by sponsors and are therefore free for members and non-members alike to attend.

The target groups are members of the Institute under the age of 40 and university subscribers. However, we encourage any interested parties to attend.

In 2016, the Brisbane committee is planning for guest speakers in the topic areas of banking, neuroscience to improve concentration and actuarial volunteer opportunities.

Jia Yi Tan – President YAP Sydney:

The Sydney YAP has been established for more than 10 years now and is an Actuaries Institute initiative to bring together young actuarial professionals. We organise a wide range of "fun" and "serious" events for young members to network, as well as to develop their industry knowledge, personal and professional skill sets. Events are free, open to all Institute members, and come with 4 CPD points!

This year the Sydney committee consists of Lisa Ye, Cameron Curko and Gautham Suresh. We are working on the program for the year but please join the YAP Sydney LinkedIn page to get the latest updates on events and meet other young actuarial professionals.

"The Young Actuaries Program offers seminars, workshops and discussion forums to assist young members with their careers. Active committees in Sydney, Melbourne, Brisbane, Perth, Hong Kong and Kuala Lumpur provide interesting programs and networking opportunities for members who are still studying or recently qualified."

What is the focus of YAP activities?

YAP is a useful platform for young actuaries to learn from well-respected and experienced individuals. Importantly, YAP was formed to host events that cover learning topics specific to young actuaries, as studying is a big part of their path to qualifying.

Therefore, it is also often a session to share tips and tricks to pass the exams as well as insight from those who have written and marked exams.

Presentations have focused on leadership, public speaking, risk culture, career progression, non-traditional fields for actuaries, working abroad and remuneration.

Brisbane YAP has been fortunate to have several well-respected individuals who have agreed to be guest speakers. Topic areas featured have included: local and international industry trends, education and the role of actuaries, attributes of successful actuaries and how to decide which actuarial path is right for you. YAP events also present a perfect networking opportunity to meet actuaries from various companies and sectors.

What sort of social activities does YAP hold?

Kevin Lim - YAP Brisbane:

For our end of year social events, we've organised a pool/ snooker night and a games night at a venue with hundreds of board games. In each of the social events, everyone has a great time and it's great to see everyone in a different, more social light.

Sophia Sophos - YAP Melbourne:

The YAP has now been running for five years in Melbourne. Attendees receive CPD points; a positive indication of the value provided to young members. The forum provides young actuaries with the opportunity to enter the minds of experts within our profession, only repackaged to suit our current knowledge and experience. Above all, the YAP offers not only a networking platform but is itself a network of smart, uniquely trained and driven individuals.

Look out for future upcoming YAP events on the Institute's events calendar.

Reverse Mortgage – Home Income Plan

By Geoff Dunsford

Reverse Mortgages are not popular – Geoff Dunsford suggests some improvements to the product.

The Green Paper, launched by the Institute on March 13, put forward a reverse mortgage as one option for retirees with equity in their homes to supplement their income.

It was noted that, despite their having been around for many years, and arguably having merit for many retirees, these products have largely been rejected. One reason would be that some retirees would see their home equity as needed for ultimately moving to a retirement home.

However, the reverse mortgage could be useful for many and have appeal if the product was more attractive.

Changing your mindset

Reverse Mortgage provides a lump sum – not an income

The standard reverse mortgage provides a lump sum to be invested to provide an income. However, this would be included in the Means Test and could result in a reduction in the Age Pension payable. (The Green Paper suggests that, to encourage the use of reverse mortgages, the government could exempt the asset and income arising from the investment of the lump sum). It was noted that one provider allows the taking of the reverse mortgage proceeds in installments. However, the minimum instalment is $20,000 – rather lumpy to be considered to be "income" for many retirees!

Reverse Mortgage demands up to 2% pa higher interest

The reverse mortgage together with accumulated interest may end up only be repaid on the death of the home owner – and possibly when there is a downturn in the property market. Interest rates may rise during this period. The provider must stand any loss if the debt exceeds the sale value of the property.

In the light of the guarantees being incorporated in the product, there is an interest margin over the normal home mortgage rate of up to 2% pa.

Small loans should require a lower interest margin

At age 65, the maximum loan available is around 20% of the home equity. If say, the applicant only required a loan of 10% of the equity, the risk to the provider of the accumulated debt ultimately exceeding the equity is clearly very much smaller.

Arguably, such a loan needs a lower interest margin over the standard mortgage rate – perhaps none at all in this case.

Home Income Plan

Retirees need a product which provides a monthly drawdown of the mortgage proceeds. As drawdowns of a loan facility the payments are not taxable nor assessable under the Means Test.

The guarantee cost can be reduced – say by limiting the drawdowns to a low percentage of the equity paid over 5 years. The position would then be reviewed at the end of the 5 year period, for the purpose of assessing what could be paid over the next 5 year period.

During the first 5 years, there is little risk to the provider, so that a normal home mortgage interest rate could apply.

And maybe this would be the case also after the review for the next 5 years.

Example:

Retiree Couple: youngest age 65; Home Equity $2,000,000

Reverse Mortgage lump sum available: 20% = $400,000;

Reverse Mortgage current interest rate 6.75% pa.

Home Income Plan:

$ 4,000 per month drawdown for 5 years; total drawdowns $240,000; current interest rate 5% pa.

After 5 years, let us suppose the Home Equity has increased to $2,500,000; there have been no changes in interest rates; hence the accumulated debt is $272,000.

Provider reassessment: The youngest retiree is now 70. The lump sum reverse mortgage that could be provided is now 25%

of the equity, ie $625,000 - well in excess of the debt of $272,000.

The issue: Is there sufficient margin to cover another 5 years of $4,000 per month drawdowns?

Here the provider must take a conservative view – using statistical models for future experience of interest rates, longevity and property values.

Let us assume for the purposes for this example that the result is equivalent to *assuming no growth in home values and interest rates averaging 7% pa over this period.*

Conservative Forecast at 10 years

Home value: *$2,500,000*; debt accumulates to *$667,000*

Reverse Mortgage available (assuming current rules apply) for couple youngest age 75 is 30% of $2.5m = *$750,000*.

Decision

So OK to provide another 5 years of $4,000 of monthly income with normal mortgage interest rate applying to the accumulating debt.

After 10 years, let us suppose the actual home value has increased to $3,000,000 and there have been no changes in interest rates. The accumulated debt is now $619,000.

Lump sum reverse mortgage available for the couple, youngest age 75, would be 30% of $3m, ie $900,000 – so that the accumulated debt is well covered.

So total drawdowns provided have been $480,000 – usefully in excess of the original $400,000 maximum lump sum reverse mortgage available. The debt has accumulated at 5% pa rather than the reverse mortgage rate of 6.75% pa, and the provider will have achieved normal mortgage profitability, having taken minimal risk. (The administrative cost of making regular drawdowns is unlikely to be any more that crediting mortgage repayments – and occasionally needing to chase them).

Further Reassessment

Calculations show that the provider would be unlikely to agree to another 5 years of $4,000 of monthly income with the debt accumulating at the normal mortgage interest rate.

One possibility would be to allow the monthly payments to continue on a year to year assessment basis, in lieu of the 5 yearly review.

Reduced interest rate for less than maximum debt

An alternative approach would be to stop the monthly payments. Then apply a reduced reverse mortgage interest rate commensurate with the provider's lower risk in the light of the debt being well below the maximum allowable reverse mortgage loan at that time.

Selling Process – Maximum Loan/Income

Currently, the assessment of the maximum lump sum reverse mortgage loan is set out in a table of percentages of the equity, depending on the age of the youngest applicant.

A suitable table could also be established for the maximum monthly income under the Home Income Plan on a similar basis – but noting that this is only guaranteed for 5 years.

Reassessment after 5/10 years

Under the Home Income Plan, the provider has the opportunity to review its position after a short period when only a part of the original maximum loan has been paid out. This should enable it to allow more generous conditions during this period than if it was "on the hook" for the original maximum. Also, both the provider and the retiree have the opportunity to take advantage of any "better than conservative" rise in the home values during this period when carrying out the reassessment.

The decision to extend the monthly income payment period will depend on the current equity, loan outstanding and ages of the retirees. Again a suitable table of maximum percentages of the current equity could be prepared for simple administrative purposes.

The table would need to be reviewed from time to time having regard to possible changes in experience assumptions.

Options for Retirees

At some stage during their retirement, the retirees (or the survivor if one has died) may wish to sell the home in order to move to a unit or to retirement accommodation.

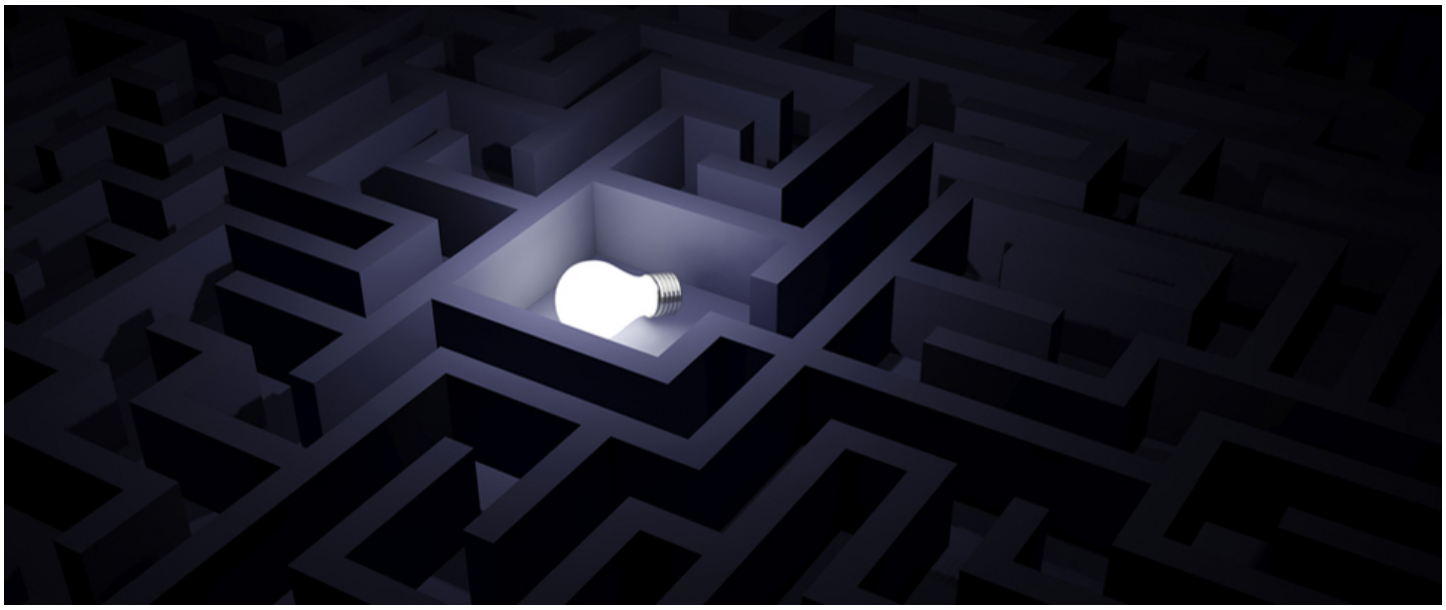
In the latter case, the sale of the home, releasing the remaining equity after repayment of the outstanding debt, would maximise opportunities for desirable accommodation in a favoured location.

And the retirees would have received the benefit of a better lifestyle in their first (10) years of retirement.

Opportunities for Banks and other Providers

Reverse mortgages are currently not popular. Their appeal could be increased if a monthly income plan was introduced. This could satisfy the needs of many retirees.

It is to be hoped that this will be pursued.



Thinking strategically about technical processes: Part 3 - How management can take the lead

By Phil Stott

In the third instalment of this series, Phil Stott explores alternate solutions to RTPs that can improve efficiency within organisations.

In my two previous articles, I suggested that thinking strategically about our core technical processes – that is, taking time out to reflect on whether we are doing them in the most cost-effective way – can result in major cost savings. The most obvious source of inefficiency is what I called recurrent technical processes (RTPs), which are series of processes which repeat on a regular basis, each one slightly different to the previous ones, but all clearly related to each other (for example, spreadsheets used to quote on the pricing of new product variants, or valuation spreadsheets updated monthly). By maintaining RTPs on an ad-hoc basis rather than developing a more robust solution, many technical teams waste the resource of senior analysts and newly qualified actuaries in performing mundane calculations, rather than the more important work of analysing and interpreting the results. In the simple example quoted, the more robust solution was 73% cheaper than the ad-hoc approach over the long run – a substantial saving indeed.

But how do we turn this trend around? How do we realise the significant cost savings that are there for the taking? In this article, I offer suggestions on how management can take the lead in redressing this problem.

Changing your mindset

As with most things, the key to changing our behaviour is to change our mindset. In this case, the mindset we need to change is the one where we think of spreadsheet and other user-controlled technical calculations as expenses rather than assets.

If a team has (say) 4 senior analysts spending their day on RTPs, this ranks as an expense, something subject to the annual budgetary process; and we all know how tightly expense budgets are controlled these days. Expenses are written off as soon as they are incurred, even if the benefit of the expenditure lasts for years. There is therefore no explicit benefit to spending a bit more on a solution that will last (say) 5 times as long. And so, under pressure from the management accountants, we often take the line of least resistance and opt for the cheapest solution, even if it is far less efficient.

If the same development were carried out through an IT project, however, the expected cost savings would be identified and justified by a cost-benefit analysis. Rather than being treated as an expense, the development costs would be set up as an asset and amortised over the expected lifetime of the software. As a result, the true financial benefit would be reflected in the accounts.

Now, it may not be possible (at least in the short term) to change your company's accounting treatment; but you at least can start to think in terms of assets to be amortised rather than expenses to be minimised. Once you make this paradigm shift, you can begin to address the underlying challenge posed by RTPs.

Preparing an audit of RTPs

The next step is simpler than it seems: you need to conduct an audit of your team's RTPs.

How do you do this? Just ask all your senior analysts and newly qualified actuaries what they are spending their time on. Most of them work on a regular cycle – monthly, half yearly, yearly – and they usually have a fairly good idea how long each process takes. They will also be able to tell you how much repetition is involved. In my experience, the people at the coal-face are painfully aware of the problem of RTPs, and will be more than willing to help.

An audit of RTPs is simply a list of all the RTPs that are currently being carried out, along with the person managing the process and the amount of time spent on it per year. If it takes any staff member more than an hour to compile their share of the list, I will be surprised; but it is surely time well spent.

Start developing a plan

You now need to start developing a plan for how to convert these RTPs into more robust software solutions. This involves:

(a) prioritising each RTP (based on a combination of time spent on the process, the importance of the process, and the current state of the existing solution), and

(b) estimating how much time would be taken to develop the more robust software solution.

The senior analysts and newly qualified actuaries in charge of the existing processes will know the answer to both questions, and will be more than happy to help.

Knowing how much work there is to do is one thing; however it is another thing entirely to find the resources to do it. But at least you are now in a position of knowing how much work there is to do, and how urgent it is. You will also have a good idea as to how much cost savings can be derived long-term. That is why the next step is (practically speaking) the most important.

Freeing up the resources

Ideally, you would like to get a budget allocation to convert the RTPs into more robust solutions; you certainly have the ammunition at this stage to make a submission to senior management based on costs vs benefits. However, in the real world, this may not be possible. Let me suggest an alternative that may be more practicable.

In any team, there are a number of tasks that are carried out on a regular basis that are not really adding value to the organisation as a whole – monthly reports that are scarcely read, analyses carried out to a precise level of detail when an approximation would suffice, and so on. These tasks exist because, having once been commissioned in the past to meet a specific need, no one has had the courage to suggest they stop being performed. I am sure you know exactly what I am talking about.

I am suggesting you have a quiet conversation with your senior manager along the following lines:

- Explain how much benefit you think you can achieve by removing your RTPs, and how much work it will take
- Ask about the possibility of getting a budget allocation to deal with the problem
- As an alternative, suggest easing up on those "non value-adding" tasks for a period of time to free up resources. For example, you might suggest turning a monthly report into a quarterly one for the next year; or performing an analysis more approximately, rather than precisely. Ask the question, "which is *really* more important: performing these 'non value-adding' tasks, or making quantum improvements in the way we do our core technical tasks?"

Since I do not work in your organisation, I do not know how much support you will get for your proposal; however, based on my experience in a number of sites, I believe most senior managers will welcome and respond to your initiative. If I were a senior manager, I would certainly look favourable on any such innovative proposal to improve the efficiency of your technical team. So give it a go – you may be pleasantly surprised at the outcome.

Finalising the plan

Once you have freed up some resources, you are now in a position to finalise your plan. This involves matching the priorities identified earlier against the resources now available.

But what sort of resources do you need for your task of converting the RTPs? In an ideal world, I would recommend a specialist on your team, a senior analyst or newly qualified actuary with superior excel skills, possibly some specific IT training, certainly with skills in other packages such as Access, Visual Basic, and so on. If you don't have such a person, then any senior analyst or newly qualified actuary can fit the bill. If they can develop the RTPs in the first place, they can certainly design a more robust solution. But, over the longer term, I would certainly suggest you plan to recruit someone with a more specific IT skill set.

Conclusion

The bottom line is this: strategic thinking involves you, the manager of your team, thinking pro-actively about what you can do to solve the problem of RTPs. You can quantify the cost of all those ad-hoc solutions quite easily, and this should provide both the incentive and the ammunition to seek some budgetary allocation to make real savings. You may need to use some creative strategies, but solutions can always be found if you are prepared to think "outside the box".

You will notice that I have omitted to mention one very important issue; that of training. Clearly, a little training on *how* to convert RTPs into more robust software solutions will go a long way to making the implementation of the solution practicable. It will also help you to work pro-actively in the future to preventing the problem occurring in the first place – and we all know that prevention is better than cure.

This omission was deliberate; the topic of training is so important that it merits detailed consideration on its own. This will be the topic of my next article.

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