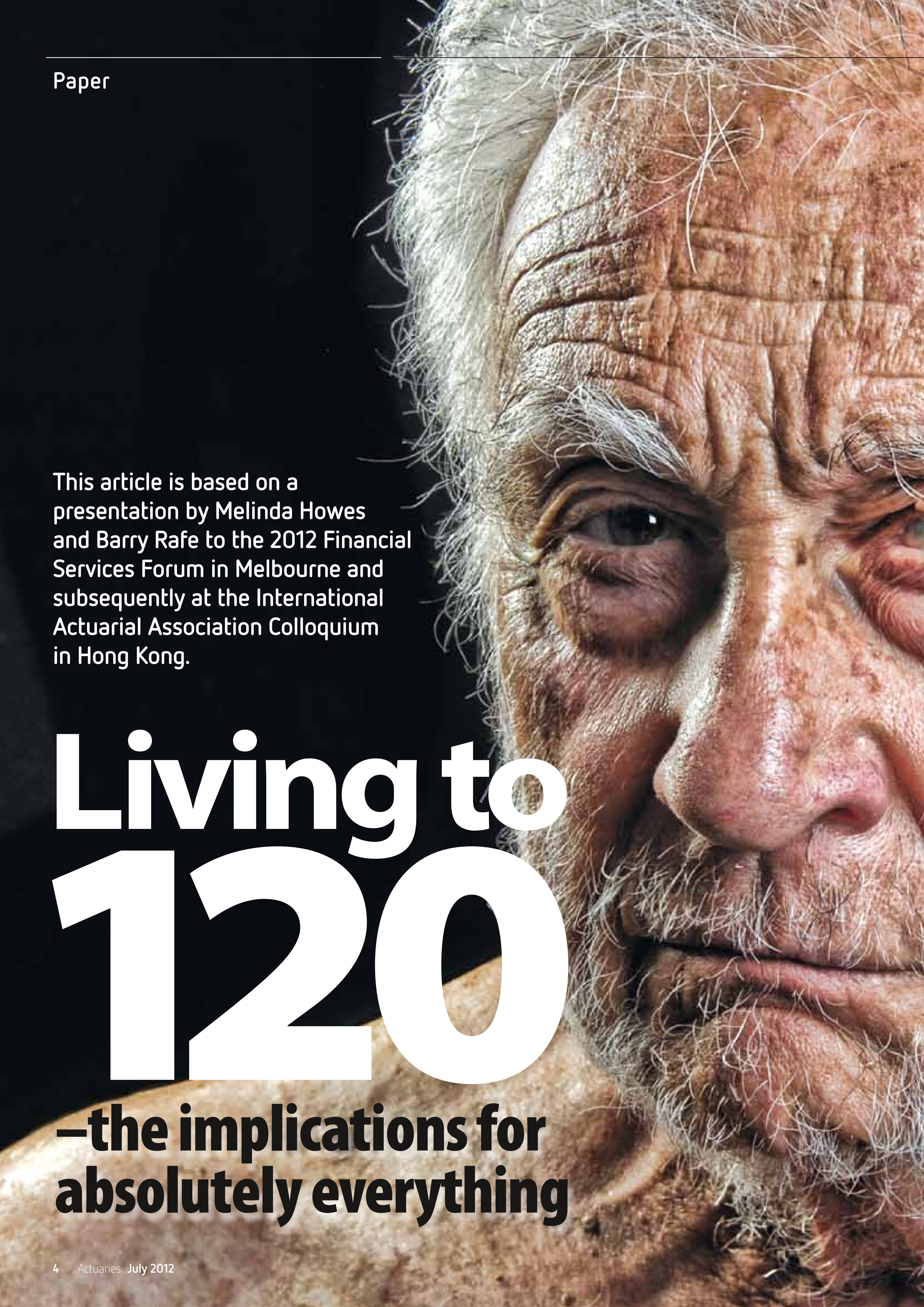

This article is based on a presentation by Melinda Howes and Barry Rafe to the 2012 Financial Services Forum in Melbourne and subsequently at the International Actuarial Association Colloquium in Hong Kong.

Living to 120

–the implications for absolutely everything

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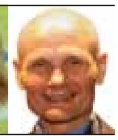


The objective of this paper is to set the scene for a discussion on the forces for change that will affect the financial services (FS) industry over the foreseeable future. Whilst we concentrate primarily on issues around longevity and some of the social and political implications of people living longer, we also reflect on other social change such as the GFC.

Some could argue that the actuarial skill base is ill suited to managing transformational change. We disagree! The actuary is the only professional who understands capital, profit and risk in the FS industry. Whilst many actuaries work behind the scenes in FS businesses monitoring and reporting on the financial position, other actuaries are leading the way in transforming businesses. The actuary's ability to develop scenarios and understand the relevant financial drivers, places the profession in a strong position to lead in driving change.

LONGEVITY, GOOD AND BAD

In 2002 the United Nations prepared a report called World Population Ageing: 1950-2050[1].

The report states that:

- "Population ageing is unprecedented, without parallel in human history — and the twenty-first century will witness even more rapid ageing than did the century just past.
- Population ageing is pervasive, a global phenomenon affecting every man, woman and child – but countries are at very different stages of the process, and the pace of change differs greatly. Countries that started the process later will have less time to adjust.
- Population ageing is enduring: we will not return to the young populations that our ancestors knew.
- Population ageing has profound implications for many facets of human life."

WHAT DON'T WE KNOW?

Actuaries have been modelling mortality for more than 100 years. We're very good at predicting gradual increases in life expectancy. But we have a problem.

Mike Sherris and John Evans from UNSW say that longevity risk can be considered as being made up of[2]:

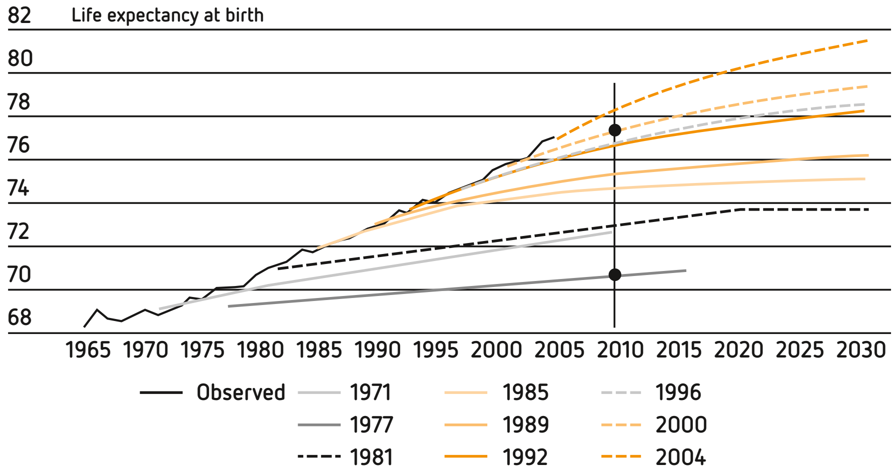
- The 'known/knowns' – A general improvement trend from socio economic improvements ;
- The 'known/ unknowns' – Some variation around the longer term improvement trend; and
- The 'unknown/unknowns' – Sudden changes from wars, pandemics and disease management.

They go on to say:

> *"... the known/known risk is easily managed as it can be modelled and therefore appropriate allowances made in pricing, the known / unknown risk is more difficult as its modelling is uncertain, and the unknown / unknown risk is impossible to manage as it is not predictable, and therefore appropriate allowances for these possible changes is not feasible."*

The problem is **discontinuities** – normal modelling techniques cannot handle things like major medical breakthroughs, a cure for cancer or viruses.

Actual and projected life expectancy at birth, UK males



Source: Chris Shaw. 'Fifty Years of United Kingdom National Population Projections: How Accurate Have They Been?', Population Trends 128, Office for National Statistics, 2007

The following chart shows the success rate UK actuaries have had in the past with predicting mortality improvements – as you can see actual life expectancies have always exceeded projections. .

Science fiction has become fact. We are staring down the barrel of LONG longevity, where we can cure major diseases, replace organs, and that's before we even start to talk about nanotechnology – which we're already seeing early applications of – or research into the ageing process. Futurist Ray Kurzweil[3] thinks that if he can live long enough for this technology (biotech and nano tech) to kick in, – he'll live forever!

LONGEVITY AND SOME IMPLICATIONS FOR THE FINANCIAL SERVICES INDUSTRY

The ageing of the population and the expected significant increases in longevity have profound implications for the FS industry. Consider the following questions that will soon become real dilemmas:

- How much of a person would need to be replaced before they are counted as legally dead and can collect their life insurance?
- If you live beyond 120 as a brain in a vat, fully conscious and able to communicate and participate in life online and in virtual reality, are you still eligible for lifetime annuity payments?

Long longevity, as well as really rapid improvements in life expectancy over the next few years are major risk issues. This is our next black swan event. This is something to which Enterprise Risk Managers need to be paying very careful attention – what will be the implications for your organisation?

Longevity improvements will be a slow burn issue for many FS businesses, superannuation funds and insurers with actual realised financial liabilities emerging slowly over time.

- The implications are extreme for funds with guaranteed pensions – so public sector funds are very exposed to longevity risk.
- If you are planning to offer any sort of guaranteed retirement product this is **crucial** and you will need to have your actuaries doing some very good scenario testing to properly value the risks.
- The implications will arise faster for life companies and others who are underwriting annuity products right now.

There is a growing need for intelligently designed and secure retirement products to help retirees cope with the risk of living too long, and the volatility of investments over their long retirement period.

POTENTIAL PRODUCT ISSUES

In addition to the dramatic increases in longevity, there will be other important changes to how consumers and Governments think about the role of FS products and the role that the government has in providing a safety net to retirees.

Some of the human psychological issues and potential scenarios that FS businesses may be faced with, which will influence future product development, are:

- There is an entitlement culture. People have an expectation that because they have paid their taxes they are entitled to a government funded pension and health care in retirement. This is an important intergenerational equity issue. We have seen protests in the streets of Europe over plans to increase retirement ages to 55!
- The concept of retirement and a fixed retirement age could simply disappear. Healthy people will be expected to work longer.
- We are in an era of austerity. Governments will cut back on welfare for those who, the government deems, don't deserve it.
- More controls will be placed on the investment and consumption of compulsory savings to make sure that people do not double dip.
- People will be expected to take more responsibility for funding their retirement and seeking out products for a secure retirement.
- The regulators will not want any disasters on their watch. They will impose significant amounts of controls on governance structures. They will increase capital requirements for guarantees. They will impose layers of compliance requirements that will potentially remove creativity of business leaders and create a false sense of security.
- Given the experience of the GFC, people now have little trust of financial promises made by financial institutions, or government. Many financial promises by governments and corporations have already been broken and we now acknowledge that they could always have been broken.

Toy Story – Pixar

- People will generally underestimate their life expectancy and overestimate their chances of dying sooner - in effect, they will live longer than they expect.
- People with enough funds will bias towards self managed investments and will attempt to deal retail financial institutions out of their plans.
- People will rely more on portable technological solutions. There will be a low level of engagement with FS providers. There will be higher levels of engagement with providers of entertainment or intellectual content. Gaming / virtual reality will be used to help people make key financial decisions. There will be a robo planner app.
- People are social animals and will generally identify themselves as a member of a number of "tribes" e.g. social groups, cultural groups, age groups, work groups.

THE FINANCIAL SERVICES BUSINESS OF THE FUTURE

This section looks at some potential models for future FS businesses by borrowing someone else's brain.

STEVE JOBS:

> *If the FS industry received a 'Steve Jobs' makeover, he would turn a luxury brand into a mainstream one while still hanging on to luxury profits. For example – in superannuation he would give everyone their own portable superannuation fund and make it the 'cool, must have' accessory (oh wait, that is already happening in Australia with the Self Managed Super Fund market!)*

Jobs built things to help people achieve their dreams. He was the master of the message – the world's greatest corporate storyteller, turning product launches into an art form. You can have the most innovative idea in the world, but it's no good if you cannot get people excited about it. Jobs would sell people the dream of being financially secure. A cool iPad app would make this real to people. Perhaps a real-time check on your financial health with prompts when you get off track – like a personal financial trainer. It would feed you video-based education when you need to make key decisions, or show you what other people had done in the same situation to make a good decision. It would give you a stern talking-to after a shopping spree or if you are planning to borrow too much to buy a property.

Therefore, a Steve Jobs makeover would likely mean the rise of the individual product/tailored solutions and automatically delivered financial advice i.e. the death of the mutual. New technology would provide access to a world of products driven by search engines and consumer preference guides. Individuals would be empowered to make their own informed decisions. The gateway will control the margin.

PIXAR:

Pixar is all about teamwork and collecting ideas from wide sources, fostering talent and continual change.

They build a team of 'super talented' staff. All facets of the business have full time employees (unlike most Hollywood production businesses for example). They develop strong distribution partnerships but whilst retaining their own brand. Their core capabilities are creativity and technology engineering.

In the FS industry they will be at the leading edge of product development. They will constantly update products and allow the ability for people to shift up to the next product.

There is a Pixar university. Staff will be continually trained with an 'up or out' culture. In effect if you do not make the grade and get the promotion, you need to consider leaving. As with Apple, the customer will have the relationship with the business rather than any individual in the business.

All advice and underlying products are produced in house and delivered through a high tech platform. They will create a fun culture.

Richard Branson

RICHARD BRANSON:

Branson's business philosophy is built around taking risks, having fun, believing in what you are doing.

> *"Looking back on Virgin's history, our ability to adapt quickly to changes has helped mitigate reverses. You must be quick to accept that something is not going well and either change tack or close the business. We run our companies lean and small; there is very little red tape and certainly no bureaucracy. We make and implement decisions quickly -- usually before our competitors in the market have held their fifth meeting on the same issue" – Branson*

The Virgin brand is about building a lifetime relationship. Virgin starts businesses in 'clusters' of related businesses to make them feel like a small, cosy operation. For example, their existing FS cluster sells pensions and investment plans. No more than 60 people in each cluster – so they can know each other's name – a family company type atmosphere. Running a big business as if it were small – fostering an entrepreneurial attitude.

The Virgin makeover would likely see a FS hub that outsources key capabilities. In particular, the business would claim to buy in the trendiest latest products on the market and deliver these to the individual in stylish packages - designed for the young market, advice lite, low cost with trimmed back service.

KERRY PACKER:

Kerry Packer's business philosophy was to dominate. He was a consummate political operator and owned media so he could influence the message.

Packer would use the money in super funds to invest in media –TV and magazine assets – and casinos. He would spend time and money wooing key politicians to implement favourable public policy for the FS industry. Sport provides a strong emotional attachment for people. There will be a lot of promotion of sport and sporting personalities. Tribes of customers will be built around their sporting interest.

Under a Packer approach an operator would buy a large super fund then set about accumulating others to make a mega-fund. It would be a for-profit model. They would then use the profits to do all of the above. They would wipe mutuals out, or consolidate them into the mega fund / purchase them under the offer of a better deal for their members. (Following on to the logical conclusion, this operator would sell the lot for a huge profit and walk away!)

THE ACTUARY

Longevity, on the face of it should be the actuary's 'sweet spot'. The issue for the actuarial profession is that we are facing significant and unpredictable change for the FS industry. Actuaries are the only profession that really understand profit, capital and risk management of FS companies. An issue however is that many actuaries are involved in the detail of the business i.e. managing and monitoring the predictable aspects of the financial integrity of the FS businesses. We have statutory responsibilities depending on the various government rules. We therefore have the reputation with many as the back office people, mainly managing compliance and low order risk management.

Our claim is that the actuarial profession needs to be open and drive discussion on the impending changes in the pipeline. We need to position ourselves as the profession that saw the change coming and were able to build models and develop assumptions that stress tested various likely outcomes. The numbers will tell us what could happen but it is also important to be able to develop scenarios of likely social and financial outcomes that will affect society wide. With our deep business knowledge actuaries should be able to draw this vast amount of information together and deliver key strategic inputs to FS businesses.

We are not claiming that the actuaries should be the entrepreneurs; rather we are claiming that the actuaries need to be positioned as the able ally of other business professionals that develop innovative solutions for the future. There will always be innovators who will pick the change and take advantage of the disruption that is caused. We believe that the teams who use the actuary will have the advantage over those who do not. A

This article is from a paper presented at the 2012 Financial Services Forum – http://www.actuaries.asn.au/Library/Events/FSF/2012/FSF2012PaperHowesRafe.pdf

[1] http://www.un.org/esa/population/publications/worldageing19502050/

[2] Sources: ABS Cat. No. 3302.0; ABS Cat. No. 310 – chart from "Longevity Management Issues for Australia's Future Tax System, The Treasury", Mike Sherris & John Evans, UNSW, Aug 2009.

[3] http://www.fantastic-voyage.net/