

# Big Data in Life Insurance

*December 2016*



# Foreword

As Australia's newest standalone life insurer, we are looking forward to 2017 with optimism and excitement. We are committed to providing affordable and accessible life insurance products to all Australians.

At MLC Life Insurance, we are particularly excited about the opportunity Big Data presents. I've been interested in this frontier topic for some time, since for me it represents a great unknown. We don't know what we don't know when it comes to information and how it can be used to the benefit of customers and the industry.

To better understand this opportunity and its many challenges we, with the support of the Financial Services Council, commissioned the **Big Data in Life Insurance** report.

This represents a contribution to the Australian life insurance industry. It aims to try and dig a little deeper into how Big Data can help us to innovate and change the way we do things.

The research, conducted by EY Sweeney reveals that we as an industry have lagged behind other major markets when it comes to using Big Data. Other industries are more advanced than life insurers in using large volumes of information to improve how they interact with customers and provide more innovative products and services.

At a time of profound technological change for most industries and their customers we believe in understanding and leveraging the opportunity that Big Data presents.

Last year we began our journey into Big Data by investing in MLC on Track, our award-winning health and wellness program, which integrates wearable technology to record health activity and is designed to encourage Australians to lead healthier lives. While it is still early days, more than 17% of all new policy holders have signed up to it and are reaping the rewards of better health and reduced life insurance premiums.

Long term, we think the program can reinforce the value of life insurance on a daily basis, rather than just at the point of claim or when annual premiums are paid. It will mean life insurance is no longer a "set and forget" financial commitment.

Looking ahead, what are the key benefits of Big Data for life insurers and for customers? The report reveals we can expect faster claims processing, quicker and more accurate underwriting, a streamlining and automation of processes, such as updating policy and contact details, and also a better prediction of claims in future.

While we are by no means the experts in Big Data, we believe that the potential benefits to policyholders and other stakeholders far outweigh the challenges. So enthused are we, that we have created a Big Data team at MLC Life Insurance. This is a long term focus for us.

The future applications of Big Data within our industry are potentially vast. We believe the time is now to set a new course for the industry. We are delighted to be able to share this report with you.



**David Hackett**  
Chief Executive Officer, MLC Life Insurance



# Background and Research

## Contents

Foreward	2
<b>Background &amp; Research:</b>	3
Background Objectives	3
Research Objectives	3
Specific Research Objectives	4
Methodology	4
Interview Coverage	4
<b>Section 1:</b>	
<i>What is Big Data?</i>	5
<b>Section 2:</b>	
<i>The Opportunity for Big Data in Life Insurance</i>	6
Customers – The Opportunity	6
Customers – The Challenge	7
Industry – The Opportunity	7
Industry – The Challenges	8
<b>Section 3: Conclusion</b>	
<i>The Future of Big Data within the Life Insurance Industry</i>	10
<b>Section 4: References</b>	11
<b>About MLC life Insurance, EY and the Financial Services Council</b>	12

## Background Objectives

The Financial Services Council and leaders in the Australian life insurance industry believe the sector has been slow to innovate when it comes to the use of Big Data. While there is a keen commercial interest in Big Data across the business world, life insurers have generally been considered to be on the periphery of the discussion.

This is the first significant report that captures prevailing attitudes around Big Data in Australian life insurance. It is intended to raise awareness of the opportunity and challenges, as well as further industry debate around Big Data.

The research and insights to support this report were sought from a number of industry segments, including life insurance providers, general insurers, industry experts and stakeholders from both Australia and abroad.

## Research Objectives:

### The key research goal:

To gather insights from the life insurance industry (and adjacent industry stakeholders) to foster thinking and debate to build on the use of Big Data in the Australian life insurance industry. The aim is to stimulate conversation amongst members of the Financial Services Council and life insurance providers – to signpost opportunities for better business and customer outcomes, capitalising on the benefits of Big Data.

This report provides insights into the opportunities and challenges faced by the Australian life insurance industry, but is not intended to be a precise or definitive survey of the life insurer population.

# Background and Research

## Specific Research Objectives

1. To establish how insurance companies are using Big Data around the globe:
  - Key strategies and pathways used by leaders in this space
  - How other industries have transformed, leveraging Big Data
2. To assess and compare Australian insurers with global leaders:
  - How and where is Big Data being used in Australian life insurance
  - Potential roles for Big Data beyond actuarial science
  - Industry understanding of Big Data
  - Who should 'own' Big Data and potential opportunities
3. To assess what may be holding the Australian industry back:
  - If and why Australian life insurance has been held back from leveraging Big Data
  - Assess if Australian insurers understand what talent, capability and infrastructure is needed to leverage Big Data
  - What key needs there may be – basic education, infrastructure advice, guidance on advanced analysis
4. To assess how Australian insurers need to change, to successfully leverage Big Data opportunities:
  - Creative sourcing of data
  - Distinct analytics methods
  - How to use both to provide a competitive advantage in life insurance

## Methodology

In order to achieve the research objectives, two research phases were undertaken:



### (Secondary) Data analysis

An examination of published relevant local and global materials, research and case studies to inform the discussions with the life insurance industry to inform the qualitative discussions



### (Primary) In-depth interviews

Mostly telephone/Skype in-depth interviews, with some face-to-face interviews. Each session was 45-60 minutes duration.

The in-depth interviews were moderated by Courtney Leo and Erik Heller and took place between June 14th and July 14th, 2016. The sample breakdown for the interviews was as follows:

In-depth interviews	
Industry role	Number of Interviews
Australian life insurance providers (CEO, CMO, CTO, CIO, etc.)	13
Australian general insurers (CEO, CMO, CTO, CIO, etc.)	2
Industry stakeholders (advisers, brokers, resellers, etc.)	10
EY partners/directors (Australian and global)	3 global, 3 local
<b>Total</b>	<b>31</b>

## Interview coverage

Each in-depth interview covered the following key areas:

1. Industry understanding of Big Data
2. Current use of Big Data
3. Opportunities for Big Data in life insurance
4. Constraints faced by the industry
5. Resourcing Big Data opportunities
6. Making decisions about Big Data
7. The future for Big Data in life insurance

# Section 1:

## What is Big Data?

“Extremely large data sets that may be analysed to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.”

Life insurance providers, overall, have a sense of excitement at the potential transformation of the life insurance industry by tapping into Big Data. They believe it will deliver great opportunities in the future for both customers and life insurers.

Those surveyed believe that it has the potential to increase accuracy, efficiency and value by engaging with customers in a more meaningful way, and to offer them products and services that are better suited to their needs and circumstances.

For the life insurers, it presents a chance to re-think and re-work how the life insurance industry is structured and how it operates. This is an opportunity for innovation and the evolution of the industry from within – improving processes and evolving business models – to ensure a more collaborative interaction with customers and policy-holders.

### Headline findings from the Big Data in Australian Life Insurance Report:

- Opportunity to re-imagine the life insurance industry, to set course for the future
- Opportunity to re-think the industry using Big Data to tailor products to meet consumer needs
- Opportunity to use Big Data to minimise traditional areas of complaints for customers
- Incorporate Big Data to increase accuracy and improve risk understanding
- Better deployment of resources in the industry, to make the most of Big Data
- Privacy concerns and the regulatory environment present a barrier for the industry
- The challenge of measuring the Big Data opportunity
- Big Data in the future – will transform the customer/provider dynamic

## Section 2:

# The Opportunity for Big Data in Life Insurance

While leveraging Big Data represents a big opportunity for a cultural and commercial shift within the industry, most life insurers consider that the Australian industry lags behind other markets.

There is a sense that many in the industry are “set in their ways” and while the opportunity for transformation is real and present, it may be met with some resistance by more conservative elements in the industry.

That said, there is a growing feeling among providers that Big Data can assist in fundamentally changing the life insurer/customer relationship. Many are excited at the prospect of creating stronger links and more meaningful customer interactions via Big Data.

In the following, we outline the **opportunities** and the **challenges** faced by both the **customer** and the **industry** segments.

### Customers – The Opportunity

The range of opportunities falls into three areas:

- Innovation
- Improved customer experience
- Better engagement with customers

#### Innovation:

When it comes to leveraging Big Data, a new approach to products and services will promote the creation of innovative or revamped products. Big Data can give us a better understanding of the customer and thus be used to structure products based on that better understanding. Further, other markets outside Australia have already brought new products to the life insurance sector and we could look beyond our borders for inspiration in relation to such things as “dynamic pricing” or “pay-as-you-live” models.

Health data can also be used more effectively to target specific customer segments and lead to the development of personalised insurance premiums.

#### Improved customer experience

More and more, and across the world, there is a trend for customers to control their own personal data and information, rather than allowing it to be managed by third parties or large institutions. This opens up a big opportunity for collaboration between life insurers and their customers. In collaboration with insurers, customers can be incentivised to manage their lifestyle and take on a sense of ownership of their health to adapt their own policies to their circumstances. For example, wearable technology enables both the customer and insurer to reward positive lifestyle choices or habits – examples of this are already in place in the general insurance sector via gym discounts and the like.

It also allows the continuing gathering of data from customers, rather than the current practice of capturing it at one moment in time, either at the time of underwriting or after a claim is made. As this data is captured in a continual flow, it will bring faster processing opportunities and streamline the underwriting process. This will minimise waiting times for receiving and accessing information, which is a continued source of frustration for intermediaries and customers.

#### Better engagement with customers

Big Data is accelerating an evolution across financial services and other industries, where automation and self-servicing are becoming the norm and, increasingly, part of customer expectations. The internet of things has given people more power than ever before to access and to share information.

For industry, Big Data can be used to identify customers, and be able to offer products and deals. It helps to identify cohorts and develop a unique understanding of that cohort and design products targeted for them. There is opportunity to use Big Data to pinpoint customers at certain times in their lives and start conversations in relation to life changes and how they influence insurance purchases – for example the birth of a child, weddings or even to the other extreme involving the death of a loved one or a natural disaster.

## Section 2: *The Opportunity for Big Data in Life Insurance*

### **Customers – The Challenge**

The biggest challenge facing the life insurance industry is in relation to information sharing and privacy concerns. This is not industry specific – it is a challenge across all sectors of financial services, government and other industries.

Adequate access to data, product restrictions and regulatory controls are barriers to be overcome, in order to incorporate Big Data into life insurance models. While Data.gov.au makes thousands of data sets available for public consumption from a large range of public bodies, there is still a big challenge for providers to access a broader range of data from other sources, more generally, to price and redefine products. Product regulations mean premiums and terms of coverage offer fewer opportunities to adapt products to changing customer circumstances.

Security of data is a big concern among customers who are uncomfortable with how much information they reveal, and to whom. Further, they are concerned about how their information is used and where it is stored. One possibility could be to find ways to link Big Data from health insurance or motor vehicle insurance, to life insurance models, thereby using data that already has been shared by customers.

It is a matter of communicating and demonstrating the benefits to the customer – and life insurers are aware they need to find ways to impart the idea to customers and intermediaries.

### **Industry – The Opportunity**

Opportunities abound for the life insurance industry, but it is a matter of shifting the focus from a very traditional way of doing things, to a more proactive engagement with customers.

The opportunities fall under these main categories:

- A new perspective – insurers need to know more about their customers
- Partnerships – the key to greater understanding of customers
- Risk understanding – room for improvement across the industry
- Predictions – more effective, in relation to likelihood of claims

#### **A new perspective will allow insurers to know more about customers**

Big Data represents an opportunity to re-think how life insurance products are structured to ensure better value perceptions and potentially decrease policy lapses. If we are able to incorporate information about other insurance cover – e.g. motor vehicle, health – that a customer may have, we can gain a 360 degree view of the customer and the risk they present. Big Data allows us to measure customer behaviour and circumstances across the life cycle, rather than at a moment in time. It also helps us understand particular customer types. Improved accuracy about customers will enable development of more 'bespoke' products and services to meet their needs, and will mean less reliance on customer self-reporting to help streamline the underwriting and claims process. Using modelling from overseas, we can tap into trends for product revamps, in relation to dynamic pricing/pay-as-you-live models etc.

Big Data can be used to focus on the future and the possibility of claims or policy lapses on the customer side. On the industry side it can streamline processes in relation to reassessing Key Performance Indicators; or identifying opportunities to automate processes; or determining investment priorities.

#### **Partnerships – a key to greater understanding of customers**

The life insurance industry has a big opportunity now to mirror the 'macro phenomenon' of data sharing using technology (e.g. Google analytics, social media) to generate access to more data. Access to more information is essential for the industry to 'thrive and survive' and opens up opportunities to leverage Big Data to create a more detailed view of current and potential customers in the future.

Partnership will allow an exchange of data, to give life insurers more information on which to base individual, tactical and strategic discussions, but it will only happen if providers, partners and customers are willing to share their data in a legally compliant way. Partnership can open up other industries for information sharing, like medical research, and greater collaboration with other industries or organisations will create further links and alignments for mutual benefit.

The end result means less guess work, as decisions will be based on better and deeper information.

## Section 2: *The Opportunity for Big Data in Life Insurance*

### Risk understanding – room for improvement across the industry

With more insights and more data, and with the right analytics in-house to understand risk, insurers believe they can hone in on the right measures and variables to better understand risk. A deeper understanding of risk using Big Data will help insurers gain a more complete picture of their customers, revealing more information about the likelihood of the need to make a claim. The more information held by insurers, the more accurate the risk assessments can be, and this will lead to greater accuracy in pricing decisions.

### Predictions – more effective in relation to likelihood of claims

Consolidation of systems in companies gives opportunity for analysis of data sets and better use of rich data already in the system.

As insurers gather more information provided by Big Data, it can be added to existing data sets, and can streamline the claims process at times when the relationship with the policy holder is most sensitive – that is, around the time of a claim. Use of Big Data can improve the claim process in areas including: recoveries; loss adjustment and at-fault determination. Further potential for using Big Data is in claims triage and lifecycle management. A positive outcome of using Big Data is in relation to pricing structures, where there can be a financial benefit for customers who are shown to be less likely to make a claim in the future.

### Industry – The Challenges:

- Resistance – in spite of the need for industry transformation
- The Big Data platform conundrum – management and storage of data
- The business case for Big Data

### Insurers see the need for industry transformation, but there is resistance

Across the industry, traditional players are still unconvinced about the Big Data Opportunity and don't wish to challenge the status quo, despite the bigger picture view that, across the world, all industries are meeting the challenge of technology and opening up the opportunities.

Those who are resistant will need to see examples of successful leverage of Big Data and also the potential ROI from Big Data investment, and they need to see proof that technology can transform data capture and integration from others who have proven the model. Concomitantly, companies are reluctant to invest in Big Data because the benefits are not clear or proven.

Unfortunately, the market in Australia has had few internal or external forces for change – there is less urgency to incorporate Big Data because of a lack of 'disruptive' entrants to the market.

### The Big Data platform conundrum – management and storage of data

It is the challenge faced by all industries using Big Data. Whilst it may drive new thinking and create opportunities for life insurance providers, there is concern about how data is managed within organisations. A decision needs to be made as to whether to create an in-house platform or outsource to a specialist. It is forcing a re-think about the role of technology, from the traditional view of technology as a back-office support tool, to a new view of technology as a strategic differentiator.

There is value in comparing life insurance companies with high-tech companies like Amazon or Apple – why not speculate about what the customer experience might be if these companies used their platforms to distribute life insurance? Can our industry create a similar experience? Providers are nevertheless confident that they are equipped to manage Big Data and can move quickly, once the systems are in place.



## Section 2: *The Opportunity for Big Data in Life Insurance*

### The business case for Big Data

The market dynamic in Australia could be limiting as it stands, due to tight controls and regulations. Until now, life insurance has been sold as part of a super solution or through intermediaries, and occasionally directly via banking and other intermediaries meaning customers are mostly removed from the insurer. Many understand the need to transform and use technology to innovate, but it is hard to imagine how Big Data can be incorporated into current business models.

Some feel there are too many unknowns, which can weaken the business case for decision makers – especially when the ROI needs to be quantified. Remember too, that the size of the prize in Australia is smaller in a 24 million people market compared to most of the rest of the world. This leads to a view there is less urgency to transform.

CFOs, in particular, require more ‘proof’ on the ROI than is currently considered possible, in relation to the benefits of Big Data. The life insurance market is described as a “competitive market with low margins” and the cost is still quite high. Therefore they can put the argument that it is hard to fit Big Data into a traditional business case model.

## Section 3:

# Conclusion - The Future of Big Data within the Life Insurance Industry

A lack of urgency in relation to Big Data represents a threat to the life insurance industry. Many believe a lack of pioneering thinking, and a lack of disruption is leaving the industry vulnerable because life insurers are not being forced to innovate.

However, the general consensus is that Big Data will be used far more in the future. From the life insurer's perspective, there is a sense that the life insurance industry must use Big Data to survive. There is enough evidence from other sectors that customer intelligence and tailoring is increasing productivity and profitability and the same benefits could be realised for the life insurance industry.

As Big Data is considered an emerging opportunity for some in the industry, it is all too easy to divert resources to other, more pressing matters, which can stall progress. The key question for the industry is whether the Big Data opportunity will be prioritised in the context of other needs.

It is critically important for data specialists and business decision-makers to work together in collaboration to explore new and creative ways to use technology and leverage the Big Data opportunity.

It is clear to many of us that Big Data will assist in fundamentally changing the insurer-customer relationship for the better.

We must embrace the *Big Data in Life Insurance Report* which reveals that we have been, until now, slow to innovate, change and revolutionise the way we do things.

Big Data is at the heart of a dynamic, customer-focused life insurance industry for the future.

## Section 4: References

<https://anziif.com/members-centre/the-journalarticles/volume-37/issue-2/the-big-datarevolution#sthash.iDVJ5MV6.dpuf>  
Vol: 37 Issue: 2 | Apr 2014  
Jon Tindall - Senior Consultant -  
Finity Consulting

**Big Data - Better Life Insurance;**  
Issue: November 2013 | Life  
Louis Rossouw, Research & Analytics  
Actuary, Cape Town

**Big Data Analytics in Life Insurance**  
January 6, 2015 | Point of View

**Big data: Why it matters for life  
and health insurers**  
6 January 2016 | Ronan McCaughey

**How Big Data Is Changing  
Insurance Forever**  
Bernard Marr, Contributor

**Making Sense of Big Data in Insurance**  
Puneet Bharal, ACORD and Amir Halfon,  
MarkLogic

**Data Analytics in life insurance: lessons  
from predictive underwriting**  
William Trump, 26 May 14

**5 Ways Big Data Is Making a Splash  
in the Insurance Industry**  
Larisa Bedgood

**Big data what is it?**  
Issue 6: December 2013/January 2014 –  
Volume 10 | The Actuary Magazine

**Two-thirds of life insurers use big data  
analytics [chart]**  
Dec 02, 2014 | LIMRA

**Infographic: How life insurers are  
using or plan to use big data and  
predictive analytics**  
2015 North American Life Insurance  
CFO Survey April 2016

**Cognizant Enables Guardian Life  
Insurance to Modernize Big Data  
Infrastructure for Improved Business  
Insights and Digital Services. Cognizant  
BIGFrame Solution Facilitates Advanced  
Analytics through Automated  
Optimization and Migration of  
Mainframe Data**  
Mar 08, 2016, 06:00 ET from Cognizant

**Life insurers expect to make significant  
strides in their use of big data and  
predictive analytics. Carriers concentrate  
on unlocking big data's full potential**  
May 4, 2016

**Trends in medical data recording  
and their potential impact on insurance  
and reinsurance.**  
SCOR October 2015

**Data collection: Wearable fitness device  
information tracking your life**  
April 18, 2015 | Kelsey Munro

**Data is wearable? An early look at  
wearables for life and living benefits  
insurance | Munich Re**

# About MLC Life Insurance, EY and the Financial Services Council

## MLC Life Insurance

MLC Life Insurance is a specialised life insurance business. It represents a landmark strategic partnership between National Australia Bank (NAB) and Nippon Life Insurance under which NAB retain 20% shareholding and Nippon Life hold a majority 80% of the shares in MLC Limited, the entity which operates the MLC Life Insurance business. The Australian-led and managed business aims to leverage Nippon Life's global presence, built over 127 years, alongside MLC Life Insurance's significant experience in understanding and meeting the insurance needs of everyday Australians since 1886.

For more information on MLC Life Insurance, visit [mlc.com.au](http://mlc.com.au)

## EY Sweeney

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organisation, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organisation, please visit [ey.com](http://ey.com).

© 2016 Ernst & Young, Australia.  
All Rights Reserved.  
ED None.  
[eysweeney.com.au](http://eysweeney.com.au)

## Financial Services Council

The Financial Services Council (FSC) has over 100 members representing Australia's retail and wholesale funds management businesses, superannuation funds, life insurers, financial advisory networks and licensed trustee companies. The industry is responsible for investing more than \$2.7 trillion on behalf of 13.0 million Australians. The pool of funds under management is larger than Australia's GDP and the capitalisation of the Australian Securities Exchange and is the third largest pool of managed funds in the world. The Financial Services Council promotes best practice for the financial services industry by setting mandatory Standards for its members and providing Guidance Notes to assist in operational efficiency.