Actuaries Institute says Big Data set to transform Australia's insurance industry

- **Many consumers will benefit through lower premiums, insurers will be able to provide more accurately priced products.**
- **Increased use of data raises issues of insurance access and affordability.**
- **Privacy and discrimination issues will be of increased concern.**

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The Actuaries Institute today released a Green Paper on how Big Data is transforming the insurance industry and the implications for the cost and availability of insurance for all consumers.

Commissioned by the Institute and prepared by Deloitte Australia, the report entitled *The Impact of Big Data on the Future of Insurance* considers some of the public policy issues that will face society as insurers price policies on a more individualised risk basis.

"Improved data will produce winners and losers amongst insurance customers," the report said, noting the need to consider issues such as efficiency benefits, privacy and how increased data analysis potentially marginalises higher risk individuals.

"The good news is that many consumers will benefit from this new technology. Premium pricing will more accurately reflect risk behaviour – good young drivers will pay less than risky young drivers (or risky older drivers)," the report said.

"However, there will be a smaller group of consumers who will have to pay more for insurance because they are considered higher risk, even though they may not be able to control the risk they seek to insure," it said.

Key findings include:

- Through the better understanding of the consumer's behaviour and risk profile, insurers will be able to provide closely tailored and more accurately priced products. They will better identify risks that individual customers may be facing and use price signals to change their behaviour. However, the insurer's responsibility to disclose risk information to the consumer is unclear and may prove contentious.
- Governments may have a role to play when competitive insurance markets do not deliver adequate cover at an affordable price for all, as is the case today for certain compulsory lines. This is especially so when the underlying risk is beyond the consumer's control. A key issue is whether society wants individuals to pay a price for insurance that reflects their risk or should everyone have access to affordable insurance regardless of the risk? Policymakers will need to consider a balance between these two approaches, and one which will likely vary across different areas of the insurance market.
- Questions for policymakers will arise around privacy issues, who owns the information, what personal data might be used for and to whom it may be passed
- Improved risk pricing may also include "uncontrollable risks," such as genetic make-up, where "the use of big data will raise unaffordability issues that cannot be mitigated by the individual modifying the risk". These issues have society-wide and public policy implications.

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The report noted that most insurers in Australia will use big data in some form over the next two years and concluded that:

- Analysis of the data will help the insurer understand its risks better, lowering premiums for the low risks and increasing them for the high risks.
- It brings the opportunity for a more far-reaching role for insurers, that of risk signalling and helping consumers and society at large to reduce their risks.
- Insurers that choose not to use available data will end up in the unsustainable position of only insuring the higher risks. Hence big data usage is likely to become widely adopted.

Lindsay Smartt, the President of the Actuaries Institute, said the report is timely given the impact big data is having on consumers in a wide variety of industries, and on the deliberations of governments and privacy and advisory groups.

"There are many positive outcomes from the application of big data in the insurance industry, including cheaper insurance for some, better customer service, more relevant products, improved underwriting efficiency and all the benefits from reduced risk to society at large," Mr Smartt said.

"It will lead to a more interactive and potentially positive relationship between insurers and their customers. More information will be transferred from the insured to insurer and more relevant communication and education will come from the insurer to the insured on how changing behaviour (i.e. healthier lifestyles, driving habits, etc) can lead to a lower risk profile and cheaper insurance," he said.

One of the report's authors, Paul Swinhoe from Deloitte, said the key findings of the Green Paper are that that the capture and analysis of more detailed data will have the positive effect of reducing risk in society.

"The knowledge that insurers gain from this extra data leads to a potential new role for them, that of risk signalling and helping consumers to reduce their risks," Mr Swinhoe said.

But there will also be significant challenges such as who will take responsibility for the uninsurable.

"We have highlighted some key public policy challenges arising from increasing use of big data including privacy concerns such as questions around who owns the data and how it can be used," said Mr Smartt.

"The need to consider highly sensitive issues in the interpretation of data (such as genetic, racial or disability bias) also need to be acknowledged and addressed along with questions around what obligations may exist for insurers to inform policyholders when the data signals a change in their profile or health.

"How Government and the industry could provide solutions for those who may be described as uninsurable also cannot be ignored," Mr Smartt said.

"Increasingly more and more actuaries are working in the field of data analytics, so we are uniquely placed to provide useful insight about this issue to industry and governments," he noted.

Consumer benefits

- **Car insurance** is being transformed by the use of telematics devices that measure various aspects of how, when and where the car is driven, opening the potential for insurers to offer usage-based insurance and premiums which more accurately reflect a driver's risk profile.

- **Lifestyle and health data** collected by insurers is being used to influence behaviour and to reduce the risk to which both the individual and the insurer is exposed. The increasing popularity of wearables, including smart watches, can benefit both customers and insurers. Sharing data can lead to better pricing, more focused reward programs and incentives for consumers to pursue healthier lifestyles.
- **Connected homes and the Internet of Things (IOT)** means that homes and household devices are becoming more sophisticated and connected. Connected homes can benefit insurance policyholders by identifying and monitoring risk factors (temperature, smoke, water supply, etc) and automatically modifying the environment to prevent incidents occurring. Smart homes may also allow insurers to anticipate incurred claims earlier and perhaps assist with the rehabilitation of the insured property.

Some examples of how insurers worldwide are using data

- In Australia, MLC 's Basis Peak smartwatch is being offered in conjunction with its On Track program to help policyholders save on their life insurance if they get enough exercise and sleep.
- South African insurer Discovery uses a range of data and health information to determine a policyholder's "vitality age", which is an indicator of overall health that may be higher or lower than their actual age, and which can improve over time as the policyholder works towards living a healthier life.
- Discovery's motor insurance division collects data on drivers through a telematics device and rewards good behaviour for drivers by granting points for braking and speeding habits; no mobile phone use, car service history, tyre checks, etc. Those points can be redeemed for fuel, Uber discounts and free coffees and smoothies.
- Athene, the US life insurance arm of Aviva PLC, has a program of replacing costly and inconvenient medical examinations with predictive modelling of risk. A study of 60,000 applicants found that non-traditional data was as effective as blood and urine tests in identifying potential health risks.
- As self-driving cars become a reality, insurance may indeed shift from insuring the driver at all (based on their behaviour) to product liability insurance for the car manufacturer.
- Nest, a business owned by Google, has a number of connected home products, such as programmable security systems, smoke and carbon monoxide detectors. It has partnered with American Family Insurance, and Liberty Mutual Insurance. The insurer subsidises the cost of the smoke detector, with the product then sharing data with the insurance firm so it knows the insured's house has working smoke detectors.

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