The Disruptive Impact of Big Data and Analytics in Insurance

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Executive Summary

Digital disruption and data-driven decisions are becoming increasingly important in the Insurance space as traditional sources of growth no longer provide a sustainable competitive advantage. With 78% of executives in the 2015 World Insurance Report citing Big Data Analytics as a key disruptive force, the Insurance industry needs to shift the paradigm and be proactive in their business approach towards their customers.

The information asymmetry between customer and insurer is rapidly closing and the focus needs to be on assisting, enabling and engaging the customer through their insurance journey.

Customer intimacy and the ability to analyse and correctly meet the needs of their clients at important life events will differentiate the market leaders from those who will quickly become irrelevant.

This fundamental shift in the business environment is driven by data in terms of how it is collected, analysed and consumed to transform the current operating model.

The innovative use of Big Data and Advanced Analytics has completely changed the perception and definition of insurance for the customer, as demonstrated by a number of case studies. We expect this trend to continue far into the future.

The continuous development of natural language processing and machine learning algorithms will enable insurers to mine insights about risk and behaviour from almost any source of information and to extract the hidden associations within. The differentiating factor will be the ability to strategically discern the insightful information from the growing volume of noise.

A clear focus on an Insights and Data strategy as well as a willingness to take risk and learn from past mistakes is necessary for progress. A data driven culture that rewards collaboration and innovation must be infused across the entire organisation with relevant talent acquisition and retention as key areas of interest in the coming years.

Organisations
that have sound data and analytics strategy, talented workforce and a culture of operational excellence will be well positioned to quickly and effectively monetise the plethora of opportunities made possible by the advent of digital disruption. We believe the ability to leverage Big Data and Analytics intelligently in the Insurance space will determine the winners and losers of the future.
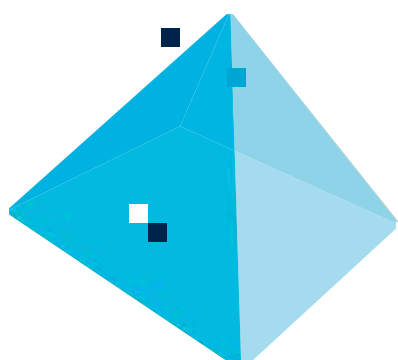
The Australian Insurance Landscape

The Context, Challenges and Opportunities

The Australian insurance industry is experiencing shifts in a variety of factors that will make their pursuit to provide innovative products and sustainable returns to their shareholders a significant challenge in the near future. Some of these influences include:

- The aftermath of the global financial crisis and the associated surge in regulation and capital adequacy in Australia and worldwide
- Prolonged low-return and low interest rate environment in world capital markets
- Adverse natural hazard experience
- Increasing life expectancy and ageing population structure
- The expansion of digital distribution and the beginnings of the connected world

- Increasing number and sophistication of fraudulent claims
- Technologically driven disrupters entering the market

Within this set of issues lie key propositions for Big Data and Analytics to unlock previously inaccessible value opportunities and to reduce complexity for the consumer.

Australia, a high wealth nation with one of the highest standards of living in the world, is embracing digitisation.

With one of the highest uptake rates of digital devices in the world, Australian consumers are becoming informed faster than ever before. Insurers, who by nature use data in order to facilitate the transfer of risk, need to use this information intelligently in order to achieve sustainable growth.

Disintermediation of distribution mechanisms and the availability of risk data enabled by a strong adoption of digital technology in Australia will be of key importance in the years to come as the insurance operating model evolves and adapts to deal with new players and forces in the market.

Big Data and Analytics will play an integral role in how the Australian Insurance sector supports customers facing challenges such as an ageing population, large spectrum of natural hazards and one of the highest costs of living in the world.

> **" Australians use an average of 3.1 devices each – this is one of the highest rates in the world."**
>
> — Google Consumer Barometer, 2014

The Big Impact

> **" There were five exabytes of information created between the dawn of civilization through 2003, but that much information is now created every two days."**
>
> — Eric Schmidt, Google CEO

A New Era in Perspective

Historically the insurance industry has relied on data and analysis to drive their core business; however, what is occurring today is unprecedented. Data volumes are growing rapidly and the nature of data is constantly changing. New technologies such as the Hadoop Distributed File System (HDFS) have made it possible to store the ever increasing volumes of data in a cost-effective manner.

According to Gartner, Big Data is "high-volume, high-velocity, and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making".

Big Data is commonly broken into structured and unstructured forms:

- Structured data is commonly used by most businesses today and includes data that can be easily organised, such as transactional and demographic information
- Unstructured data, which is growing at an unprecedented rate, is information that is not organised in a predefined manner and includes sources such as speech, video, social media, text messages and email

We are converging on a world where everyone and everything is increasingly interconnected – a world where data can be accessed by anyone, anywhere at any time. This is putting pressure on insurance organisations to go beyond the use of internal data to tap into new, rich and dynamic data sources in order to better understand risks and strengthen customer relationships.

Insurance, traditionally a reactive industry that relies primarily on internal data, must take a proactive role to predict rather than react to events. They must follow their customers in leveraging the availability of rich data sources to provide on-demand business insights.

They need to ask the right business questions, identify key value levers and understand how Big Data and Analytical techniques will enable them to drive innovative, better informed and faster decision making.

This approach requires that both business units and supporting functions share a common vision and begin their transformational journey towards evidence-based decision making and a data-driven culture.

Insurers should break down information silos and expertise to instil a culture in which the use of data is everyone's responsibility. This is essential to the survival and identity of insurance in the future.

Insights and Data, if implemented with the correct strategy and vision, has the potential to transform the insurance value chain into a cycle that evolves over time, delivering increased value and improved insights with each iteration.

The development of machine-learning and artificial intelligence is expanding the ability of computers to perform non-procedural tasks. This is increasingly important in an environment where traditional growth levers are experiencing diminishing gains.

We will explore several opportunities arising from current trends of technological advancement and how they impact on the insurance sector.

Transforming the Value Chain with the Disruptive Use of Insights and Data

There are a few key areas of the value chain where data and advanced analytics can make a big impact.

In the past, insurers relied on historical information and specific limited sources of external data. This is rapidly changing with the proliferation of new data sources, for example social media, wearables, connected devices, government information, corporate data and weather recordings, along with the ability to quickly analyse vast volumes of data.

The effective combination of these data sources overlayed with powerful models has the potential to provide more pricing choices based on a deeper understanding of risks, implications and associations.

A variation of the same principle is the use of real-time collection and analysis of data. Telematics is a good example of innovation in this space. Telematics allows insurers to access real-time information about driver behaviour. This information enables insurers to provide, manage and price risk more accurately and efficiently. Furthermore, there are indications that such tools also improve driver behaviour. Widespead adoption could potentially reduce the incidence of accidents on the roads.

In the future, we believe that the 'smart and effective' sourcing of data and analytics will be a key differentiating factor that will define leading organisations.

Sensors and Connected Devices

Sensor technology is rapidly advancing in the area of medical research. DARPA, the Defence Advanced Research Projects Agency in the United States, is currently developing an in-bloodstream sensor prototype for the Dialysis Like Therapeutics (DLT) project. DLT uses a combination of advanced integrated technologies that allow the device to sense pathogens and toxins in the bloodstream, diagnose the condition, provide the appropriate treatment and monitor the status of the patient.[1]

This data could be stored and analysed in the cloud to provide a variety of services such as:

- Remote diagnosis and targeted therapy
- Predictive medication, based on analysis of predisposition
- Remote patient monitoring and contracting to local, relevant services
- Personalised insurance based on the risk profile and physiological data generated by the DLT In-bloodstream sensors
- Lifestyle management and improvement

The use of this technology with the collaboration of medical professionals and institutions means that patients could receive optimal treatment based on the condition and patient physiology data, thereby reducing risk and minimising mortality.

Access to this type of data can uncover new revenue opportunities for insurers and at the same time provide targeted policies to help policyholders at different points in their life journey. These targeted policies could help to reduce the rapidly rising cost of healthcare, making it more affordable.

Wearable devices provide another potential source of data inputs for insurers. Clothing retailer Ralph Lauren is due to launch a Polo Tech shirt that can track and stream real-time biometric information to your mobile device. Building on successful concepts already present in the market, such as 'Fitbit' and 'Jawbone', the Polo Tech shirt takes this technology to the next level.

Connected devices are another transformational development that will have a pronounced impact on the insurance sector. Nest Labs, recently acquired by Google, offers a range of vital home systems that possess self-learning capability to offer a more intelligent home device experience. We expect to see more products that will effectively monitor, manage and even protect the home through a remote interface in the near future.

Sales, Marketing and Distribution

Distribution, Management and Optimisation

The rise of the digital experience and the exponential growth of the IoT are likely to provide a range of opportunities to simplify the insurance distribution vector. Disintermediation through the digital realm looks more likely with every passing day.

With more and more information available online every day, policyholders will no longer be bound to the direct advisor relationship due to the breakdown of information asymmetry.

The internet allows consumers to do their research online and compare policies by key criteria which includes price, policy features and customer ratings to make a decision on the product ideally suited for their set of circumstances.

Direct sales, although growing steadily for so long, has been strongly correlated with policy churn and lapse. The potential for an effective direct channel between policyholder and insurer provides an attractive opportunity for insurers to address structural concerns linked to sales incentive structures in an effective manner.

This disintermediation may take the form of a seamless experience. With our reliance on smart devices and the growing market for connected devices, it is conceivable that in the future state of the connected world our everyday devices will have the ability to communicate within a closed and personal network.

In this world, the seamless customer experience might look something like this: A consumer is at home, researching a new insurance product that has just been released. Upon leaving home for work, the information about the product they had been researching appears on their mobile phone summerised in a concise manner with text or voice prompts to aid investigation and to push the optimal product for that individual.

Underwriting and Policy Management

The Segment of One and Individual Risk Assessment

The ability to understand and assess risk accurately is a primary focus for insurers, and comprehensively understanding and interpreting macro and micro level trends gives organisations a significant competitive advantage.

Today data can be collected from anyone, anywhere and at anytime. This presents a new and extensive set of analysis points the insurer can use to more accurately profile the risk of its customers. This has the flow on effect of enabling the insurer to have a heightened appreciation of the customer demand curve, enabling insurers to clearly differentiate insurance offerings through optimal product composition and customer experience.

Traditionally, insurers use demographic information, industry data and retrospective claims experience to construct models to predict future liabilities. While this approach is somewhat accurate, the method of pooling policyholders in actuarial categories in order to estimate the overall experience for a population is utilised due to insufficient data, tools and technologies to collect and disseminate information at an individual level.

With emerging methods, tools and techniques that can store, manage, process and analyse data more efficiently and effectively than ever before, the ability to harness and distill these reservoirs of information means that organisations can fully understand the risk an individual represents to their business in real-time.

Insurers will also have access to new information such as political risk, terrorism, cybercrime and geo-localisation which can then be used to provide dynamic pricing in real-time that adjusts to environmental and individual parameters.

The discovery of new information perspectives and improved explanatory factors will help to improve the insurer's ability to accurately reserve for future expected claims and more accurately underwrite low probability and high impact events, such as floods and earthquakes.

This information will also allow for the provision of insurance for previously uninsurable risks. It will assist in establishing more powerful internal controls and hypothetical analyses to approach improved legislative compliance and solvency by being able to take a myriad of macro and micro level data factors into account.

The development of technologies, such as Telematics, integrated sensors and wearable devices will further contribute to the volume and variety of data that is waiting to be harnessed. Properly managing and using this information is an essential step to allow for the accurate transfer of risk from policyholder to insurer.

Claims Process Improvement and Fraud Detection

Insights and data can help insurers improve their claims process and fraud detection capability to achieve a number of benefits for their organisation and for their clients.

The rapid development of the analytical capability of natural language algorithms and machine learning techniques means that it will soon be possible to automate low-skill and highly repetitive tasks, for example approving settlement of low value claims, verification of customer identity and data entry. These sorting and analysis algorithms can also be used in initial assessment engines to determine prior likelihood of the claim being fraudulent, invalid or valid.

The capability of machine learning based algorithms to accurately sort documentation, mine internal and external data for patterns and extract missing data continues to develop. We foresee the accuracy of such techniques exceeding that of human capability in the near future.

Claims with low likelihood of fraud and no critical flagging would be automatically processed to achieve faster time to settlement. This Straight Through Processing (STP) of the majority of low fraud risk claims would give claim managers and analysts more time to focus on the areas which require a high degree of expertise and human judgement. Flagged claims would be diverted to case investigation specialists.
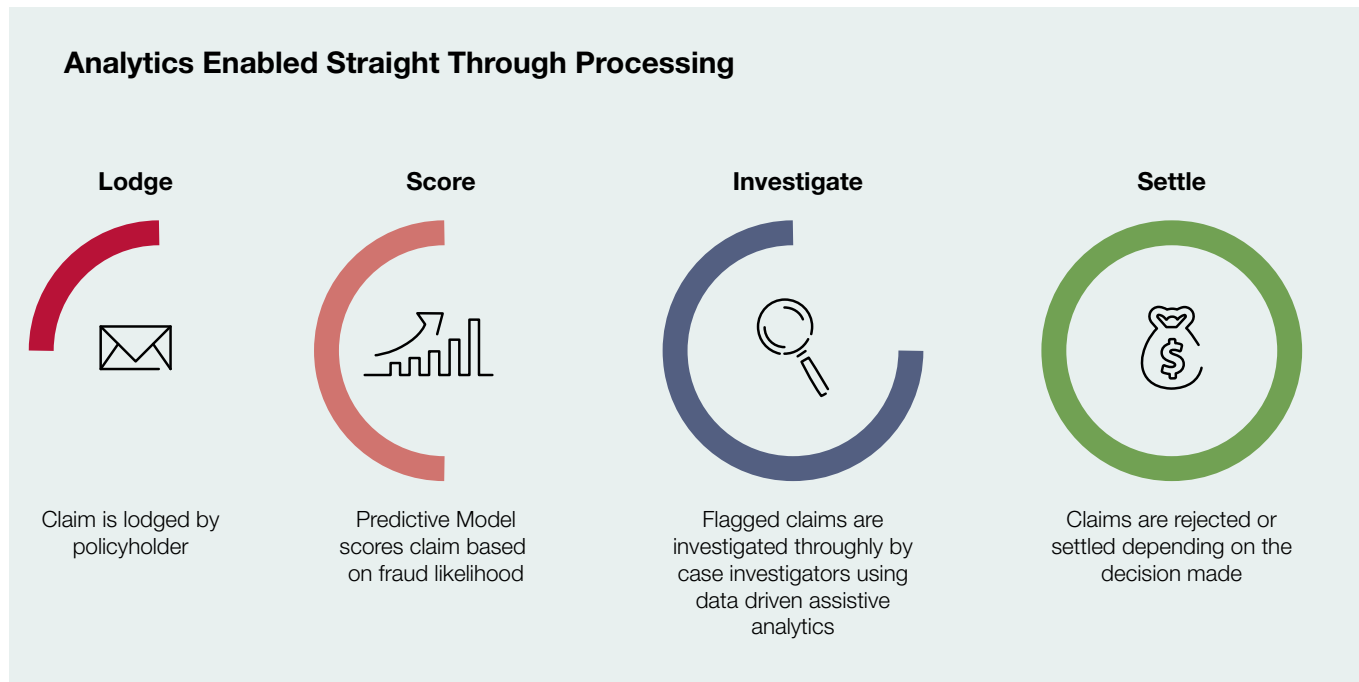
As fraud techniques become more people-centric, insurers will be able to analyse behaviour across multiple claims, understand associated social networks and their behaviour and study fraud clusters that could also identify rogue service providers. We expect some of the biggest early gains to come from more effective fraud management.

Case investigators could be aided by the use of interactive virtual environments to explore and discover nuances present within the data, further enriched by embedded analytical processes. Virtual interaction with that data in an investigative environment would facilitate faster discovery of trends, patterns of behaviour and root causes, thereby allowing case investigators to obtain a complete view of the claim event.

There are a number of ways the use of data and analytics can improve the claim procedures and fraud detection capabilities of insurance organisations. Benefits to insurance organisations through use of data for fraud detection and claims process improvement include:

- Significant increases in claim process efficiency and reduction of labour costs concerning low-skill processes

- Significant gains in productivity - automation of low-skill and highly repetitive tasks mean that employees can focus on more complex cases
- Savings from improved fraud detection and prevention
- An enhanced customer experience with a simpler and faster claims process

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Figure 1: An example of a streamlined STP Process: Capgemini Analysis

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Analytics Enabled Straight Through Processing

Lodge

Claim is lodged by policyholder

Score

Predictive Model scores claim based on fraud likelihood

Investigate

Flagged claims are investigated throughly by case investigators using data driven assistive analytics

Settle

Claims are rejected or settled depending on the decision made

Customer Engagement

Perfect Customer Profiling

Insurance organisations have been progressively moving away from a policy-centric approach to a customer-centric focus. While this shift to a customer-centric approach is recognised as a necessity for insurance organisations in today's competitive market, many insurance systems today still remain largely policy-centric.

Big data provides an increased pool of sources, for example data from on-boarding form and medical reports, to provide the organisation with a deeper and more customer centric view.

These sources could be further enriched by sales and customer care call logs, which although unstructured in nature, could provide a wealth of untapped information. The aggregation of these sources with channels such as social media, web traffic and browsing history will enable insurers to gain a complete view of the customer.

The ability to extract and analyse different data sources, for example geospatial data which includes weather information, will provide opportunities for insurers to move towards a proactive advisory role to their clients while allowing them to more effectively manage risk.

These new customer engagement opportunities will assist to broaden and develop the relationship with the customer.

New innovation in analytical technologies and techniques have unlocked a variety of opportunities. Many cross-sell recommendations will become immediate and highly contextual through real-time access of large volumes of information to make better decisions faster. Real-time predictive models will prompt call-centre operators with the right scripts to engage with the customer. Access to social information will provide more insight and context in order for client facing staff to better understand customer preferences.

Potential access to information on connected devices will further deepen knowledge about the customer and also enable insurers to broaden their portfolio offerings beyond traditional insurance products.

The use of data and analytics for perfect customer profiling will be vital in the future and will give your organisation a real competitive advantage. Organisations will differentiate themselves by the degree of knowledge of, and intimacy with, their customers. Insurers must make a rapid transition or risk being left behind.

The Early Movers ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪

Early innovators who have leveraged data and analytics have achieved substantial value benefits. While market penetration for solutions such as Progressive's Telematics are still relatively low, the simpler data-driven nature of the product allows for considerable competitive advantage that will only increase as costs of living and demand for goods continues to rise.

Pioneers within the Insights and Data space have, in most cases, utilised a targeted approach with a focus on segments of the value chain that already have considerable data analytics maturity or that offer significantly shorter time-to-value.

We will explore how some of these innovators have begun to develop the analytical foundation that will shape the Big Data driven transformation in insurance across various segments of the value chain.

The insurance sector has been lagging behind in the adoption of data and analytics. However, a few early adopters have already achieved considerable competitive advantage through implementation of such strategies and technology.

> ❝ *Usage-Based Insurance is predicted to be worth €50 Billion by 2020.*❞
>
> — PTOLEMUS Consulting Group, 2013

Product Development

Analytics for Agricultural Insurance

Climate Corporation, acquired by agricultural giant Monsanto in 2013, provides crop insurance for farmers in the United States. They use weather data, such as temperature and rainfall, as the basis for the policy and provide quantitatively driven insurance. Policy holders do not need to file a claim; rather claims are processed and paid automatically based on the threshold of measurement and the specifications of the policy.[2]

This has provided opportunities for agriculturalists to invest in high risk and specialty crops which are not covered under the Federal Crop Insurance Program in the US.

Another pioneer in the same field is Farmers Edge Laboratories, which is an agricultural analytics firm based in Canada. They use computer-based models to analyse satellite, weather and agricultural data to help farmers understand and predict future trends. Some current product offerings include crop yield analysis, irrigation optimisation and diagnostics for agricultural equipment.[3]

By using analytics as a primary differentiator, both Farmers Edge and Climate Corporation have effectively demonstrated their presence as technologically enabled disrupters in the insurance market. They not only improve coverage to agriculturalists, for example by providing insurance options for speciality crops not covered under the US Federal Crop Insurance Program, but they also showcase the potential of Data and Insights to unlock value in the offering of previously unquantifiable risks.

African insurer UAP has also harnessed data and analytics to provide micro-insurance to farmers, allowing them to affordably transfer the risk of adverse weather. Based on weather trends over the past 30 years, settlement is automatic for conditions that exceed the predetermined average for the region over a fixed period of time.

Telematics for Car Insurance

Telematics, a wireless technology pioneered by the General Insurer Progressive in early 2002, accurately captures and records measures of driver behaviour, such as average speed and braking force, in near real-time. It is a small plug-and-play device that can be easily installed in newer vehicles and gives insurers a granular view of the behaviour of individual drivers.

Premium discounts are offered to safer drivers who are assessed on driving behaviour captured via the Snapshot Telematics device. Known as Usage-Based Insurance it contrasts heavily to No Claim Discount (NCD) and population based premium pricing models used by the majority of automotive insurers.

Progressive have also developed a feedback portal which allows customers to view their own driving behaviour and provide suggestions to improve their driver rating and reduce their premium.

Global adoption of this technology has been increasing, with over 70 suppliers currently offering a similar product to the Progressive Snapshot. Although market penetration remains low at this point in time, with the improved awareness of such devices and reduction in cost of technology, Usage-Based Insurance is predicted to grow market share to approximately €50 Billion by 2020.[4]

2 Vance A, "Monsanto Billion Dollar Bet Brings Big Data to the Farm", *Bloomberg Business Week*, 2 October 2013

3 Hay, T "Farmer's Edge Bringing Big Data to Farms with Kleiner Perkins Investment" *Venturewire (Dow Jones & Company Inc.)*, 10 November 2014

4 Ref: PTOLEMUS Consulting Group, "Usage-Based Insurance, Global Study", 2013 Edition

Sales, Marketing and Distribution

Managing Direct Distribution Channels

Several insurers have taken the lead in distribution management by using predictive analytics to source, select and retain the best sales agents.

By tracking sales performance against metrics such as early customer-lapse rates, average policy size and disclosure rates, they can understand and design commission structures that align the interests of the insurer with those of the distributor.

Sales-support tools are also a major area of development. MassMutual financial group provide their sales team with a mobile application that highlights customers with the highest propensity to convert to another insurer. The ability to identify these customers has improved placement rates by 5 percent in 18 months.[5]

Another leader in this space is ICICI Prudential Life Insurance. Through their tablet-based application, NEO, they are able to recommend the optimal product mix based on a detailed life-goal analysis of their customers, and provide a digital upload of policy documents for selected sales advisers.[6]

Underwriting and Policy Management

Automated Underwriting

The benefit of data and analytics for underwriting and policy managment is best explained through a case study.

TAL Life Limited in Australia was experiencing constant not-taken-up rates (NTUs) and losses in sales due to uncompetitive underwriting. Customer experience was inconsistent with their coverage expectations and they were dissatisfied with the entire process.

In order to improve the underwriting process, TAL Life Limited implemented a powerful classification engine that not only delivers significantly faster time to settlement but can be dynamically altered to capture new trends in the market.

Their direct adviser channel, which drives approximately one third of revenue, experienced improvements in productivity due to the use of the automated underwriting system and mobile applications that enabled advisers to close sales on the spot. For example, one direct adviser was able to insure a mining electrician within 53 minutes, representing a significant efficiency improvement.

TAL Life Limited provides an example of how insurers can use data and analytics to realise significant business benefits. For TAL Life Limited, these benefits included a 30 percent increase in new business within the first year, a 25 percent reduction in NTUs and 40 percent of unit cost reductions in their business operations, resourcing and underwriting segments.[7]

Satellite enabled flood prediction

The Fully Automated Aqua Processing Service (FAAPS) utilises the European Space Agency (ESA) ASAR Satellite to generate accurate and large scale flood mapping capability. Developed by Capgemini in partnership with the European Space Agency it aims to support Austrian disaster management authorities in providing pre-emptive assessment of flooding risk as well as impact assessment after a severe flood event.

This is done in near real-time (NRT) and provides a significant advantage over current ground and aircraft based methods due to the fact that it can operate in all weather conditions. The European Space Agency plans to make this satellite flood data freely available. This technology will give insurers the opportunity to provide improved and NRT risk assessment of coverage areas and allow for quantitative measurement of flood impact over large areas in order to establish settlement suitability.

Claims and Benefits Management

Analytics Transformation in Health Insurance

Blue Cross and Blue Shield of North Carolina (BCBSNC) is a health insurer connected to 99 percent of state hospitals and covering approximately 3.6 million consumers. Using data collected from all around the State of Carolina they analyse patterns between providers to look for trends in provider practices, for example, by location and demographic.

> " *TAL Life Australia realized a 30% increase in new business within the first year, reduction of NTUs by 25% and unit cost reductions of 40% through the use of Big Data."*
>
> — Munich RE, 2012

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5 **Bringing Big Data to Life: Four Opportunities for Insurers**, BCG, 2014

6 Capgemini Analysis, 2014

7 **TAL Life boosts revenue, strips internal costs, and serves advisors and customers with amazing speed**, Munich RE, 2012

Providers are then indexed against state and national averages in order to determine a ranking of most effective healthcare providers. They are then able to refer or affiliate their policyholders to the top rated and most efficient practitioners.

Healthcare providers themselves have welcomed the new approach and have utilised the information provided by BCBSNC to accelerate improvements in practice efficiency and quality, in line with the pressures instigated by health care reforms.[8]

Analytics for Fraud Detection

Allianz Insurance in the Czech Republic is using SAS Analytics to identify and prosecute cases of insurance fraud. The use of statistical models to assign a likelihood rating to each case means that investigators can focus their efforts on claims with the highest probability of being fraudulent. Network and associative analysis is also being used to provide a visual representation of potential links between fraudulent activity and potential collaboration points.

Within the first six months of implementation Allianz managed to identify 1,161 insurance fraud cases worth more than CZK 62 million (AUD$3.25 million), a vast improvement from the 426 cases worth CZK 10 million (AUD$0.5 million) that had been identified over the previous year.

Other benefits included the ability to investigate 26 percent more cases, the submission of 40 percent more proven fraud cases for criminal prosecution and savings of approximately CZK 110 million (AUD$5.78 million) per year due to the reduction in fraudulent claims paid.[9]

Customer Engagement
Customer Centricity

In the customer engagement space the insurer MetLife has reinvented the customer experience with a display that allows employees to plot vast amounts of data and information on an interactive platform.

The MetLife Wall integrates information from 70 legacy administrative systems into one platform to provide an overall map of interactions with each customer at each state and touch point of their journey with MetLife.

The ability to see the big picture and interact with all this information has driven better call centre experiences for customers. Customer representatives are able to quickly and efficiently answer questions, manage claims and offer relevant services or promotions with reduced call and wait times.

The Way Forward

The opportunities that data and analytics holds for the insurance industry cannot be ignored. Institutions must seek to develop a vision, capability and instil a data-driven culture within their organisation.

Insurance organisations must focus on Insights and Data and how this information can be gathered and analysed to:

- Understand and price risk more accurately and equitably
- Manage distribution channels and study behaviour patterns of the impact of direct sales on lapse, churn and retention rates
- Optimise the claims process and improve the accuracy of fraudulent claims detection

- Develop a meaningful and positive relationship with the customer to maximise cross-sell opportunities and retention rates

Development and retention of talent will be a key differentiator in this space, as the data scientist - with business acumen, statistical expertise and a thorough knowledge of computer programming languages - is in high demand and is hard to find.

The right employees will assist across the insurance value chain in every function to create opportunities and develop analytical maturity to propel the organisation forward and provide a platform for sustainable growth. This expertise must be found, nurtured and given opportunity to flourish.

> "
> By implementing advanced fraud analytics Allianz in the Czech Republic managed to **identify an additional 426 cases worth over CZK 10 million in the first year.**"
>
> — SAS

8 Analytics Drives Cost, Quality Improvements for NC Insurance Provider, SAS

9 Where Human Capabilities Fail, SAS,

Progressing with an
Insights and Data Initiative

As a major provider of strategy and solutions in the Insights and Data space, we commonly hear clients ask "how do we set up an Insights and Data initiative?"
There is no silver bullet; however we can recommend the following steps based on our experience and success in this field.

Establish key business drivers and scenarios

Establishing the key business drivers and scenarios is the first, and arguably the most important, step in the journey. Areas that could generate immediate benefits include revenue increases, reduction in fraud costs and improved retention of customers.

This process should involve the business unit leaders and it is essential to identify a committed sponsor, key stakeholders and the working team for the initiative.

It will also be of value to produce an initial straw man of an Insights and Data road map to identify possible value opportunities over a period of time. Ideally at the end of this phase there will be a prioritised list of business scenarios that will be addressed as part of the initiative.

Determine the required data

There are a wide variety of valuable data sources that could be employed to solve the prioritised business scenarios. This data must be identified and sourced based on collective business knowledge.

It is essential to consider all possible data points that could add value to the particular scenario, remembering that external and unconventional information may also provide significant value opportunities for the organisation.
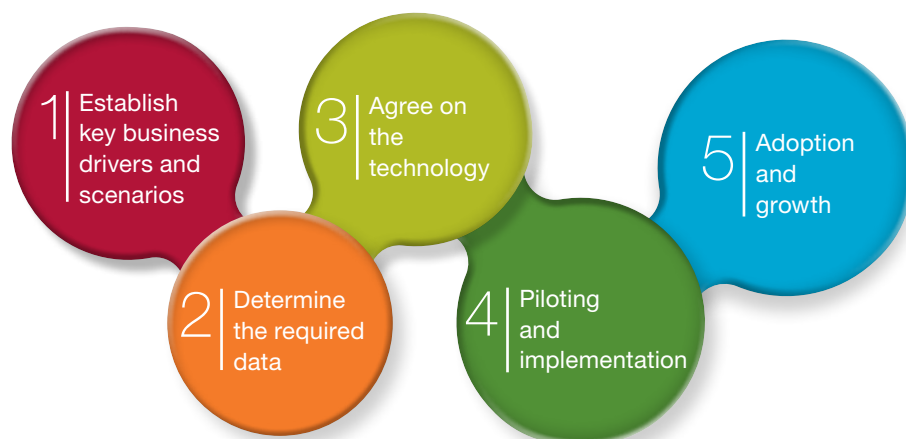
Agree on the technology

The next step is to select the right technology. The situation will govern whether to leverage internal technology resources or seek specialised assistance from an external party. There are a myriad of options and the final choice will depend heavily on technology, business strategy, current industry landscape and skills.

There are many innovations to choose from in today's marketplace. Technologies such as In-Memory Computing and Massively Parallel Processing (MPP) make it possible to run large complex algorithms across very large data sets in real-time. The Hadoop Distributed File System (HDFS) enables storage of large volumes of unstructured and structured data at a very low cost. These new technologies, combined with analytical software products from vendors such as IBM, SAS and their open-source competitors Python and R, have drastically increased the ability of insurers to predict outcomes in real or near real-time.

Key benefits of these new technology options are:

- Ability to handle data of any structure
- Easy to scale
- Fast processing speed
- Optimal cost

1 | Establish key business drivers and scenarios

3 | Agree on the technology

5 | Adoption and growth

2 | Determine the required data

4 | Piloting and implementation

Piloting and implementation

It is important to strike a balance between ease of use and business value when choosing a pilot project. Clear expectations must be set in terms of the iterative nature of the work. In its execution, the pilot should to be a collaborative initiative between the business, technology and analytics stakeholders.

Once a few of the pilot cases have been accepted as successful outcomes, they can be integrated as business–as-usual (BAU) processes. For example, if it is a predictive churn model, it needs to be embedded in the retention management program. Likewise, if it deals with claims modelling, it needs to be integrated with claims related processes.

Adoption and growth

Communication and broader engagement is vital for the ongoing adoption and growth of the business. It will be of value to identify departmental champions, who can identify new value driven opportunities by leveraging the wealth of information that exists in the organisation. The role of the sponsor plays a critical part in ensuring wider organisational adoption. This is a good point in time to re-evaluate the original concept and begin to build a long term Insights and Data strategy.

Finding and growing the right skills continues to present a challenge. As part of their strategy, it makes sense for organisations to consider the right mix of internal and external sourcing. Acquiring the required skills from an external source for an initial phase in many cases assists in accelerating the growth progress. This approach also enables insurers to continue to bring the latest thinking and skills into their organisation.

The New Era of Privacy and Regulation

Personal data has often been described as the oil of the internet. The vast amounts of personal data collected by sensors and connected devices bring with it new issues regarding ownership and effective regulation to ensure prudent use of personal information.

With the increasing prevalence of smart devices and the Internet of Things (IoT), the granular details of an individual's lifestyle is projected into the public sphere. It becomes easier for organisations to access information about driving behaviour and fitness preferences, right down to how much time is spent around the dinner table.

Wireless pacemakers also transmit the personal data of millions of people who use them daily. Most consumers are probably unaware that the data from their new Tesla car is sent directly to the manufacturer, or that information collected from wearable devices such as Fitbit and Google Glass is also sent to the product manufacturer.

The question becomes who owns this information, how security can be ensured and what regulatory processes are in place to ensure an equitable outcome.

Some evolving trends that we have identified include:

- Government regulators will be reactive as technological change outpaces regulatory policy and processes
- Customers still place a high degree of trust in organisations so long as they ensure transparency about the use of personal information
- Increased regulation on the use of personal data and new privacy laws means that customer permission will be required for use of their personal data
- Customers are seeking something in exchange for the information they share about themselves
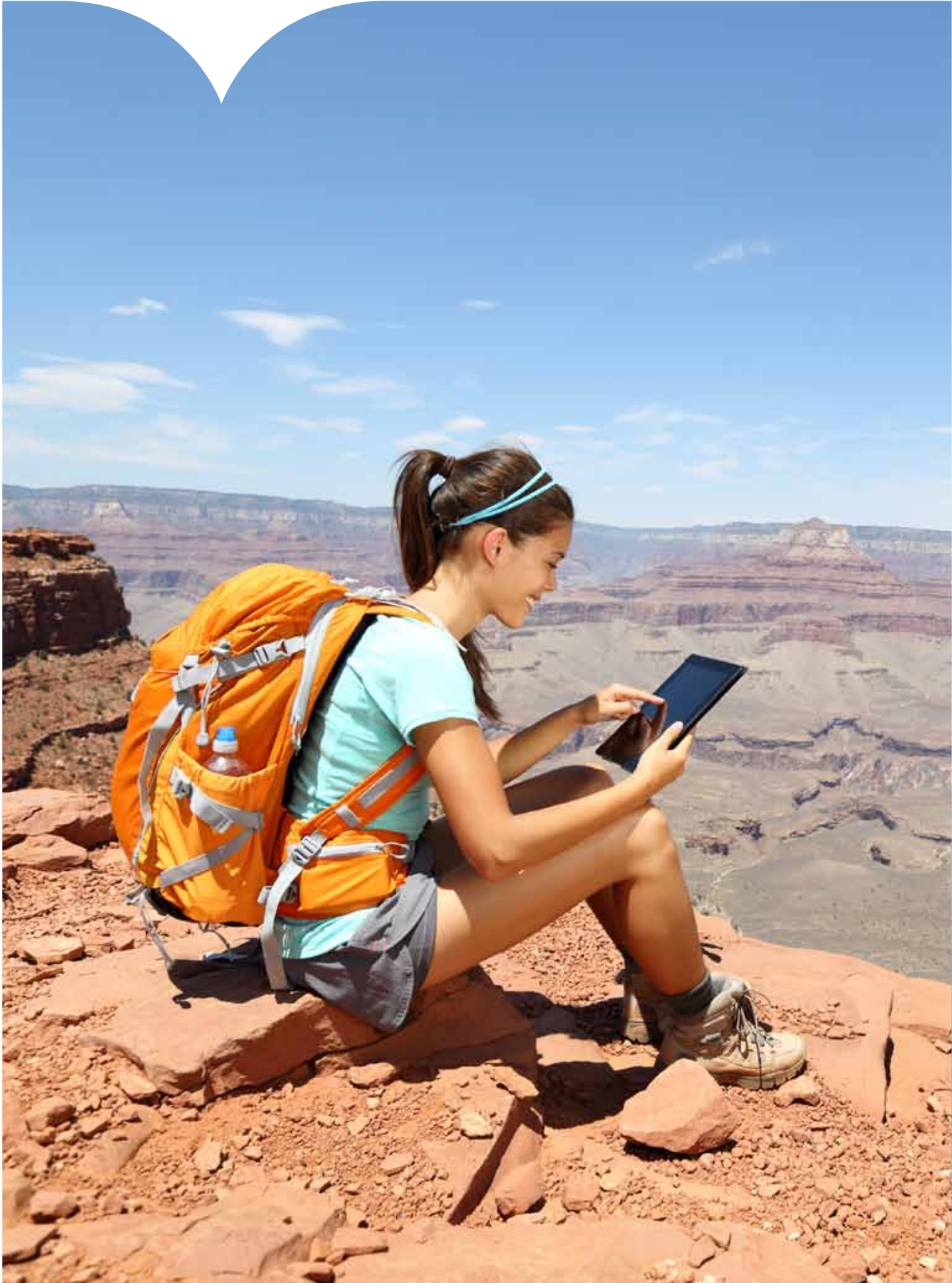
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