Big Data brings big opportunities for insurers

Data is the life-blood of the insurance industry. But when you’re dealing with 2.5 quintillion bytes of data in near real-time from a growing array of different sources, it’s a very different story. This is Big Data. And this is the challenge facing insurance companies now and in the years to come.
When it comes to handling and processing data, insurance companies have typically relied upon data warehousing or point data solutions, which may have served them well for pricing, operational MI and compliance, but the explosion of data available to the insurer equals more cost not only to store the data but also to mine the data to discover the “golden nugget” of information.

The volume and complexity of available data to an insurer is only going to increase as unstructured data is growing 15 times faster than structured data and is originating in real-time, which means it’s available faster than ever before.

The challenge is to find ways to exploit both structured and unstructured data in equal measure. Insurers that have chosen to invest in a Solvency II solution, which creates a robust data architecture with policy, finance and asset data stores, may benefit in the long run, but these solutions have not needed to embrace unstructured data.

For insurance companies hoping to tap into the increased insight and productivity of Big Data – and, therefore, the increased revenue as well as the potential to reduce their cost base – they will need to ensure they have the right systems in place to cope with both structured and unstructured data across three specific areas:

1. **Volume**: The amount of data available to insurers has increased dramatically in recent years. First, there was the introduction of aggregators, which meant the number of quotes received by insurers has grown substantially. Then social media introduced data from a number of new sources, which could have an impact on an insurer’s brand, products, customer perception and beyond.

2. **Variety**: Typically, insurance companies have relied on structured data to make decisions, however the explosion of social media and new data now means there are large amounts of unstructured data that can inform insurers about their products, customers and their brand. The challenge for insurers is to find a way to assess which unstructured data sources will provide them with the greatest value.

3. **Velocity**: Traditional business information systems acquire data through batch processes before making the data available to the business, but with the introduction of new open source technology such as Apache™ Hadoop®, insurer companies are now able to quickly acquire, process and exploit both structured and unstructured data within seconds, rather than at fixed points in the week, month or year. For example, predictive models using a combination of CRM, telematics and social media data may be used to detect fraudulent activities.

However there is a fourth area to be considered: **Veracity**. While there are any number of areas from which insurers can gain value from Big Data, that value can only come from managing and controlling points in line with business priorities. For example, here are some areas where the insurance industry may gain from the application of Big Data:

**Fraud** – combining claims data, CRM data and social media data could give insurers the ability to verify whether a claim is valid or not by checking recent activities on social media sites whenever a claim is submitted. For example, is the claimant of a motor accident claim connected to the person with whom they had the accident via a social network site? Does third party mobile phone information (GPS data) confirm where the claimant was at the point of an incident? The application of unstructured social media data could allow insurers to make more informed and quicker decisions on claims.

**Smarter finance** – imagine being able to make daily automatic adjustments to reinsurance strategies, premium rates and underwriting limits by combining structured internal data (eg actuarial, finance and policy) with unstructured external data, such as press and analyst comments from Twitter, blogs and websites. This would allow for verifiable qualitative analysis through the application of Big Data.

**Customer retention** – which customers should be retained and when should a renewal offer be put to that customer? Aggregators created a storage headache for insurers as customers requested quotes from a number of different sources, leading to a large number of quotes being stored on insurers’ systems. But how many insurers use this data against their existing customer base to see who is looking to renew or change their policy and then act to offer them a new policy before they defect to another insurer? Or when a customer changes their personal circumstances – for example, when a student graduates and finds a job, they will have increased income and may need further insurance. Or when someone retires and needs an annuity rather than a savings engine?
In each case, the insurer will rely on a combination of structured and unstructured data in order to predict and act on a potential life changing scenario but, more importantly, they will require the business to react quickly to the data received.

Telematics – the “pay as you drive” model provides an opportunity for insurers not only to understand their customers’ driving better; it also provides them with rich data about how many miles they drive, how and when they drive the car and where they drive and leave the car. This data, when fed into an underwriting system, potentially allows for more accurate pricing of policies on a customer level. It should also lead to improved claims processing as insurers will know the moment a claim is made. And it is intended to reduce fraudulent claims.

Reputation / brand analysis – if an insurer launches a new product, how is it assessed? The number of products sold? This is only one dimension. If you couple that with unstructured information from social media sites you will be able to get people’s opinions and experiences of the product.

Claims – claims management has always been an area of focus for a number of insurers – can claims be processed quicker and cheaper with less leakage? Having a single customer view along with CRM data and some social media data can provide insurers with insight into whether a claim is valid and whether it should be processed quickly.

Customer satisfaction – how does an insurer know if a customer has had a bad claims experience? Normally, a customer will phone into the call centre and complain, but how many decide not to and instead decide to comment on social media sites? Insurers may be able to increase customer satisfaction by responding to those comments or opinions directly and resolving issues, therefore reducing the risk of losing those customers.

Social network analysis – do insurers know how important any one customer is to them? Do they know whom they are connected to and what influence they may have on other customers? Can they afford for that customer to leave and potentially take another handful of customers with them? New customers cost more than retaining an existing customer. Using the unstructured data available via social media sites can provide an added dimension to customer insight.

CRM & some social media data can provide insurers with insight on whether a claim is valid

Big Data is real for insurers, but it may be more accurately described as the smart conversion of data into actionable information, leveraging both structured and unstructured data that is available in a timely manner for exploitation by the business.

Big data requires a step change in terms of information architecture as there are new architecture patterns to exploit such as data streams to analyse it in near real-time or solutions such as Hadoop® for Big Data storage and analysis.

Insurers need to recognise that some data is transitory and can be analysed as it is acquired, some data only needs to be stored for short periods of time and some data needs to be summarised to support enhanced modelling and analysis. However, it will be those insurers that have or will invest in a robust enterprise information architecture coupled with a vision for information usage to drive up productivity and revenues that are most likely to take advantage of the opportunities that Big Data can provide.

WHERE TO START?

A prudent start would be for insurers to ask themselves what is it they are looking to achieve from a Big Data solution. It’s all too easy to acquire substantial volumes of data and then for the business to go fishing for insights that might reduce the value the business can derive from the solution and therefore impact the perception of the solution within the organisation.

There are three steps insurers should follow when embarking on the Big Data journey:

1. Insurers should start by outlining potential use cases for Big Data.
2. Insurers should outline the importance of these use-cases and what the value would be to the organisation.
3. The concept of “data labs” should be introduced in order to validate the use case against a subset of data before the process is “industrialised” into the insurers data architecture.

Organisations should consider starting on the Big Data journey with the introduction of data labs for the high value use cases in order to prove value and the approach early. IBM has provided expertise in applying Big Data solutions to solve complex challenges in customer acquisition, retention, marketing, risk and fraud. We have an established approach to discover, define, pilot and maintain these solutions, and establish the data privacy, governance and information management to successfully test and use Big Data.

“By 2016, global IP traffic will reach 1.3 zettabytes annually (110 exabytes per month); growing four-fold from 2011 to 2016.”

Cisco VNI Global Mobile Data Traffic Forecast, 2011 - 2016³
For more information

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