Big Data insights on Life Insurance Modelling

B.Annapurna,
Head of the Department Computers Science,
annapurnagandrety@gmail.com.
Ch.S.D.St. Theresa's Autonomous College for Women
Eluru, Andhra Pradesh, IndiaEluru, Andhra Pradesh, India

Dr.K.L.Saraswathi Devi,
Head of the Department Mathematics,
saraswathikatneni@gmail.com.
Ch.S.D.St. Theresa's Autonomous College for Women

Dr.R.Indira,
Head of the Department Zoology,
indiramohanrao@rediffmail.com.
Ch.S.D.St. Theresa's Autonomous College for Women
Eluru, Andhra Pradesh, India

Abstract: The purpose of this study is intended to raise awareness of the opportunity and challenges, as well as further industry debate around Big Data in the field of life insurance. 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 India and abroad.

Background Objectives

The Financial Services Council members and leaders in the life insurance industry believe that the sector has been slow to innovate when it comes to the use of Big Data in India

The key research goal:

Insurance companies risk being bypassed by new, more agile data aggregators taking advantage of the digital era, as the data revolution looks set to transform the industry. To do insights from the life insurance industry to foster thinking and debate to build on the use of Big Data in the life insurance industry. The aim is to stimulate the opportunities for better business and customer outcomes, capitalising on the benefits of Big Data.

Over the past 10 years, advances in technology have changed the face of businesses worldwide. One of the most striking changes has been the availability of Big Data. This large volume of both structured and unstructured data inundates companies on a day-to-day basis. But it's not the amount of data that's important. It's how organizations use this vast quantity of information to derive insights that matter. When it is used effectively, Big Data and analytics can help insurance carriers streamline processes, better manage resources, and improve profitability.

Understanding the problem:

According to IBM, 2.5 Exabyte of data are produced every day. This amount of data would fill 2.8 billion CDs (each with a capacity of 650MB). Laid end to end, these CDs would wrap around the earth's equator 11.5 times.

Because there is too much data to be processed in traditional ways, Big Data is defined in four dimensions: volume, velocity, variety, and complexity. With so much available information and new updates coming in perpetuity, finding the right information in all of the data can be like finding a needle in a haystack. That's why, what we at LexisNexis Risk Solutions refer to as "Smart Data," is so important. It's not just about capturing and storing data. Analysis is critical.

Within the Life Insurance industry, many new business and underwriting requirements are available as structured data. And that data arrives within sub-seconds. Insights from this data can be gained to aid in identity verification, underwriting and risk assessment using motor vehicle records (MVRs), financial information, property ownership, criminal history, professional licenses, prescription history, and credit history. There is far more information available than a single carrier would be able to access within its own systems, and it offers an objective view for proposed insureds. Additionally, these records can contain independently verified data, reducing the need for underwriters to make follow-up phone calls to verify the applicant's information.

Advanced linking technology poses an opportunity to connect data within and outside a carrier's system to provide a comprehensive, single view of an individual. That's where "Smart Data" comes into play: by incorporating real-time data and analytics, savvy carriers can achieve first-mover advantage, which will increase underwriting efficiency as well as increasing customer (and producer) satisfaction.

How the way life insurers planning to use big data and predictive analytics?

Extracting useful insights from big data requires careful planning and execution of advanced analytical techniques and technologies. To be successful, insurers must have the right people, systems and processes in place.

The insurance industry is using advanced analytics to improve risk selection and offer customers new products. For example, a growing number of auto insurers now offer usage-based insurance products that use technology to monitor driving behaviour and reward good driving with a discount. Life insurers need to think ahead about how they want to use and deploy big data and predictive analytics. Some insurance companies initially invested a generous amount on infrastructure and applications without as much consideration regarding how they wanted to deploy it in the market. It is critical for life insurers to think about how they will be able to use these tools.

In a life insurance context, data sources that are already being used or explored include

- ✓ Administrative systems
- ✓ Claims data
- ✓ Website clickstreams
- ✓ Medical records
- ✓ Prescriptions
- ✓ Credit scores
- ✓ Social media

How much Big data & predictive analytics transform the future?

More than half of carriers responding (53%) currently apply big data and predictive analytics to increase market penetration. However, two years from now, life insurers expect to use big data and predictive analytics to

- ✓ transform their business model
- ✓ expand customer relationships
- ✓ enhance the customer value proposition
- ✓ improve internal performance management

Data sources are evolving
A challenge for all companies entering the big data universe is what to collect, where to collect it from and what to do with it when you get it. Life insurers responding to our survey were

Presently, the top internal data collection source is administrative systems (100% of survey respondents), followed by

- ✓ claim data (77%)
- ✓ agents (55%)
- ✓ underwriting data
- ✓ ZIP code data (both 46%)

These will continue to be reliable internal sources of data, but life insurers say they will harvest from additional sources in the future, including emails, website clickstreams and agent/customer voice-to-text logs.

External data collection sources are also expected to expand. Life insurers we surveyed are currently using permitted external information from medical records (72%) and prescription data (61%). Within the next couple of years, they plan to mine intelligence sources such as credit scores, websites and social media.
Within the next couple of years, they plan to mine intelligence sources such as credit scores, websites and social media. The Internet is a gold mine with ripe potential for enhancing customer knowledge and relationships.

Challenges to use big data

Life insurers recognize that in order to realize the potential big data offers, they must first address a number of barriers and challenges. The biggest barrier identified in our survey is infrastructure limitations (71% of respondents). Financial constraints were also cited by over half (54%) and a lack of knowledge and expertise ranked third. Half or more survey respondents also pinpoint top barriers to harnessing big data as conflicting priorities, data availability (both 54%) and people, including resources, training, skills and capabilities (50%)

Conclusion - The Future of Big Data in the Life Insurance Industry

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.

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

References

1. How Big Data Is Changing Insurance Forever Bernard Marr Contributor

2. Making Sense of Big Data in Insurance, PuneetBharal, ACORD and Amir Halfon, MarkLogic

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

4. 5 Ways Big Data Is Making a Splash in the Insurance Industry Larisa Bedgood