

WHITE PAPER



## Data and Analytics: Unlock the Possibilities in Life Insurance Underwriting

Big Data and analytics help carriers streamline processes, optimize resources and improve profitability.

### Executive summary

Over the past decade, advances in technology have changed every aspect of our world, from how business is done to what customers expect. Yet the life insurance process has remained largely the same. While many companies have introduced e-applications, adoption rates remain relatively low. Insurers have automated some processes, but many have yet to embrace the tools, technology and data that can help life insurers meet customer expectations and achieve a competitive advantage today, while positioning themselves for success tomorrow.

Today, life insurance carriers have the opportunity to gain valuable business intelligence and insights, and better understand their customers. They can measure, model and predict outcomes—often in real- or near-real time. And that means they can make smarter decisions and provide better experiences and outcomes than ever before.

The key to achieving all of this lies in data and analytics, which are transforming business. And this can create a significant competitive advantage for carriers that embrace it early and broadly.

Life insurance carriers that implement real-time data and analytics into their underwriting processes can unlock tremendous opportunities. They can:

- Offer a less invasive, more responsive customer experience
- Better manage risk, in more efficient ways
- Improve productivity by more appropriately allocating skills of seasoned underwriters to more complex cases
- Improve the bottom line through lower costs, faster turnaround times, improved mortality experience and decreasing lapse rates
- Increase top-line growth and expand into new markets more quickly and nimbly

Above all, business leaders must be committed to trusting and acting upon the findings of data and analytics. It is critical to create a culture that embraces data and analytics as a key component of the way it does business.

### Big Data, big spending

According to a June 2013 survey<sup>1</sup> conducted by Strategy Meets Action, 87 percent of life and annuity insurers reported they will increase their spending on data and analytics over the next three years—costing an estimated \$1 billion, with a prominent focus on new business and underwriting.

<sup>1</sup> Data and Analytics in Insurance: L&A Plans and Priorities for 2013 and Beyond  
Author: Mark Breeding, Partner, June 2013

## Big Data: What's the big deal?

Over the past 10 years, one of the most striking changes has been the availability of vast amounts of data—called “Big Data”—and the ability to use analytics to derive insights from it. For example, the computer that navigated Apollo 11 to the moon had 74 kilobytes of memory and could perform 50 calculations per second. Today, advanced supercomputers can perform up to 5,000 transactions per second, and according to IBM, there are 2.5 exabytes\* of data produced every day. The data flood shows no signs of stopping: With each day comes more and more data, from new and emerging sources.

\*2.5 exabytes = 2.5 quintillion bytes = 2,500,000,000,000,000 bytes  
Subheads should not have any end punctuation unless otherwise stated

According to IBM, 2.5 exabytes of data are produced every day. 2.5 exabytes would fill 3.8 billion CDs (each with a capacity of 650 MB). Laid end to end, these CDs would wrap around the earth's equator 11.5 times.

For illustrative purposes only.

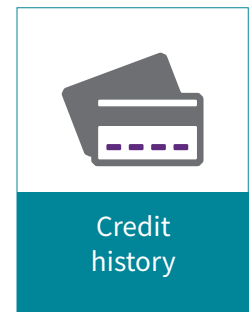
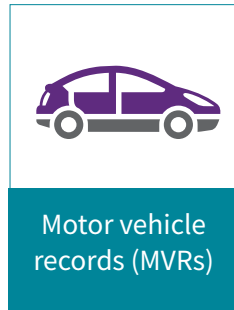
Big Data is defined by its “bigness” in four dimensions: volume, velocity, variety, and complexity. Simply put, there is too much data to be processed in traditional ways. Big Data includes structured and unstructured formats, and can come from internal and external sources:

- Governments and businesses use Big Data to spot and monitor suspicious activity and criminal behavior, fraud, and even terrorism.
- Major consumer retail firms use it to track purchases, make recommendations and drive marketing activities.
- Property and casualty (P&C) carriers, especially in auto insurance, use Big Data for marketing, underwriting, customer retention and claims management.

However, it's not just about the data itself. With so much available information, and with new updates coming in constantly, finding the right information can be like finding a needle in a haystack. As data storage becomes cheaper and processors become faster, the ability for organizations to derive intelligence from the data deluge will be a key differentiator. In other words, it's not just about capturing and storing data: Analysis is critical.

## New business and underwriting requirements in real time

Many new business and underwriting requirements are now available as structured data, and within sub-seconds. Much of this information has been recognized to have protective value and includes:



When used effectively, the combination of Big Data and analytics can help carriers streamline processes, better manage human resources and improve profitability—and those life insurers that embrace it early can create a significant competitive advantage.

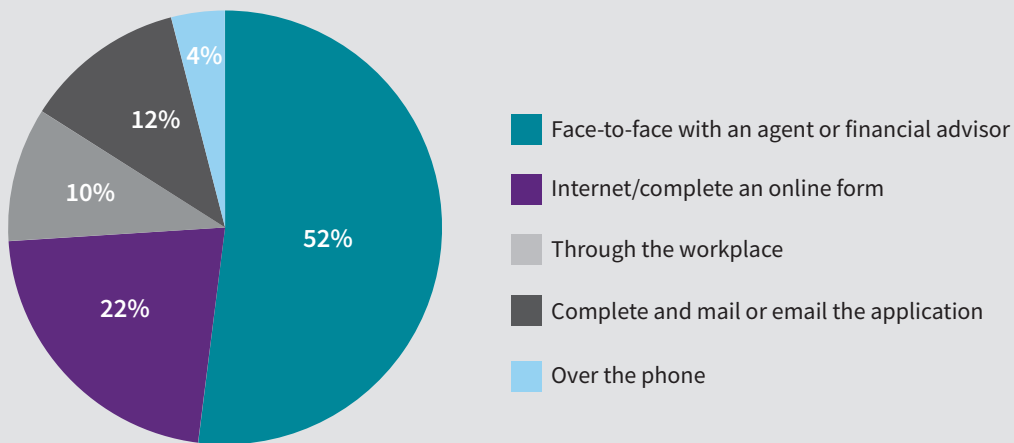
### Today’s life insurance landscape

Acquiring life insurance is inconvenient for all parties. For the proposed insured, it often includes completing a medical evaluation, getting blood tests, and providing a urine sample. And even after satisfying some of the basic requirements, he or she may be asked a battery of follow-up questions on anything from their medical background to driving history, criminal background and financial status. Carriers face their own challenges. Underwriters often have to wade through various underwriting requirements, touching a case several times before obtaining a sufficient view of the proposed insured.

While underwriting requirements are essential for robust risk management, the process of obtaining them can be invasive, inconvenient and cumbersome—not to mention lengthy. Recent estimates indicate that, on average, it takes approximately 30 business days (i.e., six weeks) to close a life insurance application. How many other purchases take that long? Carriers can no longer claim that the complexity of life insurance is responsible for the lengthy wait. Other historically complex transactions have made great strides in reducing time-to-issue: even mortgages can be refinanced online in a matter of days.

Adding to the squeeze on life carriers, customer behaviors have changed. A 2015 study from LIMRA showed that only 52 percent of customers expressed a preference to purchase life insurance in person. The remaining 48 percent wished to purchase their insurance online, through the workplace, by email or direct mail, and by phone. Given the increasing prevalence of online shopping—and not just for consumer goods—carriers must be prepared to adapt to, and effectively address, changing expectations for how life insurance can be bought and sold.

### How customers prefer to purchase life insurance<sup>2</sup>



As mentioned above, a 2015 LIMRA study revealed that only 52 percent of life insurance customers wished to purchase life insurance products through face-to-face interactions. We expect this number to decrease as the prevalence of online and direct channels grows.

## Unlocking the possibilities to meet customer expectations

As customers have become accustomed to streamlined, lightning-fast responses—in all areas of their lives—they have come to expect the same from their life insurance providers. According to LIMRA, while the majority of consumers find it reasonable to wait a few weeks to receive the life insurance policy they have applied for, most consider it unacceptable to wait one month or longer for their new policy.<sup>2</sup>

Fortunately, technology today has made it much easier for life carriers to begin leveraging Big Data and analytics in much the same way that P&C companies have already been doing.

## Customer experience: Less invasive, more responsive

To be competitive in today's market, life insurance carriers must be fast, accurate, consistent and nimble—characteristics that do not align with traditional underwriting techniques. However, with access to real-time Big Data and analytics, underwriters can derive critical insight within sub-seconds. What used to take hours, days or weeks can now be obtained in a few keystrokes or fed into a smart system for automated processing. And the extent of the insight that can be obtained is more comprehensive and robust, drawing from vast data resources, such as public records, prescription history, driving records, inspection information, credit history and more. Notably, these capabilities are nothing new to insurance. However, in general, life insurers are lagging in using real-time data and analytics behind their P&C counterparts and companies in other industries.

By using Big Data and analytics, underwriters can access information in real time, achieving two objectives at once: Obtain a good picture of the individual risk profile and independently verify the applicant's information. Any remaining questions can be addressed in about two minutes, rather than a traditional 20-minute (or longer) interview. Market solutions include predictive models that assess the risk posed by a proposed insured using little to no medical information, which comes close to traditional underwriting approaches of predicting mortality.

<sup>2</sup> LIMRA 2015 Insurance Barometer Study, April 2015.

### Risk management: Vast data, comprehensive understanding

The string of interviews and medical exams is invasive for customers, and in many cases it's also difficult for underwriters. But real-time data assets are now available that compile public records, credit history, inspection reports, bankruptcy information, prescription history and more. These reports include far more information than a single carrier could have within its own system, and offer an objective view of a proposed insured.

In addition, these third-party reports can contain independently verified data, reducing the need for follow-up phone calls. Advanced linking technology can connect data within and outside a carrier's system to provide a comprehensive, single view of an individual. This means that life insurers can now achieve this single customer view within sub-seconds.

### Work smarter, not harder

The low-interest-rate environment has led to tighter expense management and slimmer budgets—and has intensified the pressure on underwriting staff to be as productive as possible. Underwriters are trained to assess complex risks, but may be mired in processing routine risks and completing repetitive, mundane tasks. With real-time data and analytics, elements of the underwriting process can be automated, so that routine risks are fast-tracked through the process and underwriters can focus on the complex risks that deserve closer attention. This approach would enable underwriters to reduce the number of times they touch a case, and decrease turnaround times so they can process a higher volume of business.

According to the 2014 ALU Life Underwriter Census, conducted by the Academy of Life Underwriting, nearly half of all underwriters are 50 years of age or older. Consequently, the high likelihood that underwriting resources will become insufficient makes it even more critical for carriers to leverage data and analytics in the future—as a way to augment what will likely be a resource gap in the years to come.

### Benefits of advanced analytics

Advanced analytics are becoming a critical element of new business and underwriting initiatives, enabling:

- **Speed and efficiency**—get answers in real time, through less-costly processes
- **Deeper insights**—uncover true insights and the implications for your organization
- **Improved profitability**—enable underwriters to better price and classify risks
- **Greater consistency and less subjectivity**—promote data-driven underwriting to minimize variability and improve risk classification
- **More accurate decisions**—thanks to the availability of relevant, timely information
- **Improved service**—better anticipate a customer's needs, preferences and likely actions, and enhance customer convenience

## Real-time data and analytics can help attract new business

Complicating matters is the fact that the life insurance industry is facing a looming sales talent shortage. According to LifeHealthPro's 2013 Independent Producer Study, 87 percent of life producers are over the age of 50. As this experienced workforce begins to retire, carriers need a way to make the underwriting process less complex and more convenient for agents and brokers, while also enabling the organization to pursue new distribution channels. Data and analytics can enable carriers to make the most of experienced producers' time, while also training and developing new producers.

## Types of data available for underwriting use



More and more real-time data is accessible to life underwriters, and in the future, will likely include medical information. Electronic medical records may be more immediately accessible, and wearable devices, for example, have the potential to provide real-time data—but until their accuracy and reliability improve, their applicability in underwriting remains uncertain.



Typically, financial planners and producers are comfortable talking about finances, investments and taxes, but the traditional underwriting process requires them to ask questions about confidential—and at times, uncomfortable—matters, such as medical history and other aspects of the proposed insured’s life. Predictive models are now available that require minimal medical information from the proposed insured, while still offering effective risk management. In addition, market solutions can combine both medical and non-medical information for higher face amount cases (where carriers are taking on more risk), while others can be customized to accommodate a carrier’s particular risk tolerance. These models can transform the customer experience, putting the proposed insured at ease while still allowing the carrier to gather vital information.

By incorporating real-time data and analytics, savvy carriers can achieve first-mover advantage—not only in increased underwriting efficiency, but also by increasing producer satisfaction.

### Positioning for the future: Profitability, growth and new markets

These are challenging times for life carriers. A low-interest-rate environment, little to no growth in policy issuance, increasing costs, fierce competition for experienced underwriters, and an aging and traditional distribution force are out of sync with today’s business environment. Customers are shopping and buying differently—life carriers need to keep up with these changing trends.

With a growing focus on expense management, companies are seeking alternatives to traditional, more-costly underwriting requirements—especially for parts of their business that pose less risk. Similarly, carriers are seeking to gain additional insight from the data they do have, to improve underwriting outcomes and ultimately, the actual mortality experience. Real-time data and analytics can help to meet both of these goals—they are cost effective and instantaneous, and once brought into a carrier’s system, can be “sliced and diced” in predictive models and simulations.

When it comes to growth, carriers are looking for new market opportunities, with many having set their sights on the middle market—the uninsureds, or the under-insureds. The carriers most likely to succeed in their attempts to enter or expand into these markets will be those prepared with new, more efficient ways to process and underwrite the business—they'll need innovative distribution methods and processes that can keep up with higher volumes. These carriers will be prepared to face the growing competition in this space, including alliances between carriers and retailers, as well as online direct insurers, worksite providers, and banks and financial services firms.

## Getting started with data and analytics

It's important to distinguish between data and analytics, and technology solutions. A new underwriting processing system may improve the speed of processing, but unless carriers enhance that technology with data and analytics, they won't be able to derive any more insight than they currently have.

Notably, implementing data and analytics doesn't have to be a huge IT disruption. Whether a carrier has an automated underwriting engine or not, data and analytic solutions can plug into existing systems, decision engines and workflows.



## Looking to the future

With so many new data sources emerging, it's important to keep up with what's available. Contributory databases are widely used in P&C insurance to share information within the industry. Contributors receive access, giving them a wider data set and more insight than they could achieve on their own. While still nascent in the life insurance industry, there is growing interest in the opportunities that can come from a contributory database, which can help carriers enhance fraud prevention, improve risk selection, manage IT costs and provide better customer service.

When it comes to implementing data and analytics, there are typically four types of carriers:

1. Those who do not use any form of real-time data in their underwriting process.
2. Those who use some real-time reports (typically MVRs) for their underwriting process.
3. Those who use some real-time reports for their underwriting process and feed them into a rules engine.
4. Those who use many real-time reports or data for their underwriting process and feed them into a system that incorporates predictive modeling and analytics.

Those life insurance companies that fall into categories (1) or (2) described above need to ramp up their efforts to unlock the full potential of data and analytics in their underwriting process. It may seem onerous to incorporate Big Data, but doing so can bring major enhancements to a carrier's underwriting process, while also helping the company to be much more responsive to the needs of customers today. In addition, as adoption increases, those insurers who leverage the benefits of data and analytics may find they have a reduced risk of adverse selection. In order to remain relevant and competitive, those life carriers in categories (1) and (2) may wish to consider aligning with a data partner who can help them harness and make the most of Big Data and analytics.

Those insurers that fall into category (3) should devise better ways to leverage the data they are using. While rules are a good first step to automating the underwriting process, they can't provide the deep insights that analytical models can, and do not free up underwriters to focus on highest-value activities. Again, choosing the right data partner can help these life insurers implement advanced analytics to help derive true insights from the data deluge.

## Data and analytics can help carriers detect and prevent fraud

Fraudulent activity is expensive and can be hard to detect—especially as fraudsters use more sophisticated and complex schemes. Big Data and analytics can help. Consider the figures from transactions submitted to LexisNexis® for identity verification in just one month<sup>1</sup>:

- **657,092** identities linked to three or more SSNs
- **84,093** identities linked to four or more dates of birth
- **77,458** identities used an SSN belonging to a different name and address
- **53,317** identities linked to a vacant address
- **43,672** identities used an SSN belonging to a deceased individual

It is critical for carriers to detect identity discrepancies up front—before these fraudulent files advance through the underwriting process.

<sup>1</sup> Subset of records from December 2011

Finally, those life companies that fall into category (4) are leading the pack. However, even these carriers have the potential to derive more insights from the data, to pull in additional data sources, and develop more nuanced and effective models. And, it's important for these life carriers to ensure that they are alerted or able to detect changes in a person's profile. Leading market solutions can help link attributes across data sources to create a comprehensive, single view of the proposed insured.

### Considerations for using data and analytics

Though data and analytics provide carriers with tremendous opportunities, there are also a few words of caution:

- **Regulatory requirements:** There are clear regulatory guidelines governing the use of many types of data, especially for underwriting purposes. The Fair Credit Reporting Act (FCRA), Driver Privacy Protection Act (DPPA), Gramm-Leach-Bliley Act (GLBA), and Health Insurance Portability and Accountability Act (HIPAA) are just a few examples. Carriers must comply with restrictions on how an individual's data may be used, and ensure that the data complies with all requirements and restrictions.
- **Privacy:** Incorporating more data and analytics means having access to more data about an individual. Carriers must be aware of and sensitive to the responsibility of using this data, and must abide by the highest standards of privacy. Used judiciously, more extensive data about an individual can result in better risk management and more accurate pricing, which benefits both carrier and customer.
- **Attribution and accuracy:** Shopper data and social media information aren't always directly attributable to the proposed insured—it may be household related and therefore, not appropriate to use for underwriting. Carriers must always ensure that they are using data for permissible purposes. Wearable devices may, however, eventually have the potential to provide real-time data relative to the proposed insured, once the technology for these devices progresses to the point where their accuracy and reliability are no longer in question.



## Beyond underwriting: Data and analytics throughout the policy lifecycle

While this paper has focused on the benefits of real-time data and analytics for the life underwriting process, there are applications throughout the policy lifecycle.

In particular, carriers can:

- **Enhance fraud detection and prevention.** By including data and analytics in their application process, carriers can verify and authenticate a person's identity. Data and analytics can also enable detection of collusion and material misrepresentation, catching fraud before the carrier writes bad business. Fraud comes at considerable cost, and it is critical for carriers to uncover identity discrepancies as early as possible.
- **Improve the customer experience at point of application.** By leveraging outside data sources, carriers can reduce the amount of information an applicant needs to submit. The added benefit is that the quality of the data improves, reducing not-in-good-order (NIGO) applications. Better data quality can also help increase the number of hits later in the process, such as prescription history and MVR orders.

### Looking forward

As Big Data continues to shape the way we do business, it is critical for life carriers to be able to capture, analyze and act upon the insights that this data can reveal. During the application process, data and analytics will help verify and authenticate a person's identity, whether through an e-app, telephone interview or paper submission. Prefill and data sources can improve the customer experience with respect to the application, which has the added benefit of improving data quality for downstream inputs, such as prescription history and MVR orders. Carriers that replace some requirements with readily available, independent data reports that offer the same or greater insight into a person's personal history can alleviate the need to chase or reconfirm information.

**The result?** Increases in speed, quality, and insight; lower costs and improved productivity; improved customer and producer experiences; and fewer interruptions. In the short term, savvy carriers can use data and analytics to create a competitive advantage—and in the long term, position their organization for success in an increasingly competitive and ever-changing market.

### Keys to success with data and analytics

1. **Big Data starts with data.** Storage is relatively cheap, so figure out how to avoid throwing anything away.
2. **Insight is iterative.** Insights come from analytics on data—and those insights create new data, new analytics and new insights. Repeat as necessary.
3. **Don't underestimate the work required to get data ready for use.** Plan to allocate time for preparing your company's data.
4. **Remember history.** Build historical perspective into data models from the start, so that you have more than point-in-time perspective.
5. **Be vigilant.** Measuring and improving data quality are iterative, continual steps. Your ability to leverage analytics depends largely on your understanding of your data quality and your willingness to manage your data on an ongoing basis.

Above all, business leaders must be committed to trusting and acting upon the findings of data and analytics. It is critical to create a culture that embraces data and analytics as a key component of the way it conducts business.



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