

Transforming Insurance Risk Assessment with Big Data: Choosing the Best Path



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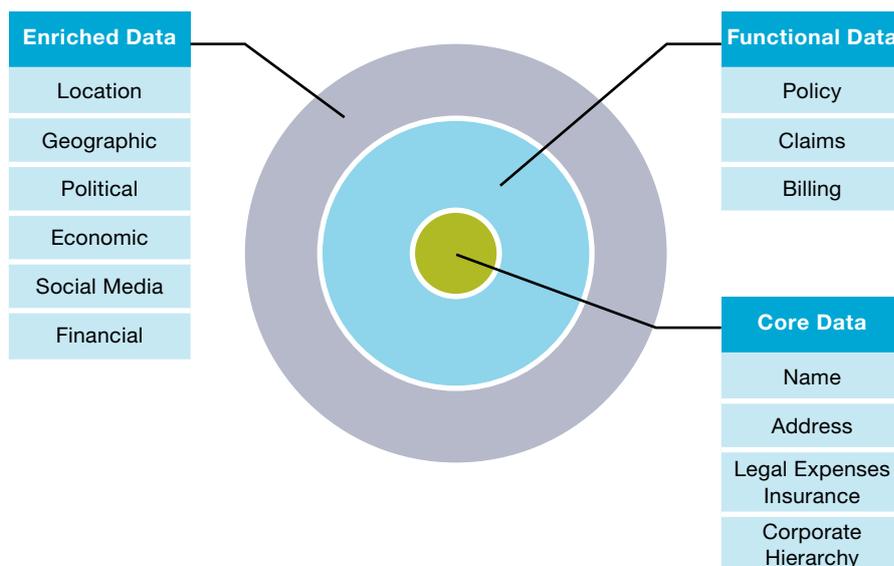
Introduction

Insurers are realizing that big data has the potential to create competitive advantage. There is a gold mine of information residing across the large volumes of data available in multiple sources and disparate formats, if only it could be efficiently mined to support key operational decisions and improve the customer experience.

In a recent survey¹ of 242 underwriters and 220 members of the Chartered Institute of Loss Adjusters regarding their collection and exploitation of data to support business functions, 82% of respondents indicated they believe those insurers that do not capture the potential of big data will become uncompetitive. The vast majority (86%) agreed that the key to making best predictive use of big data is to be able to analyze data from all sources together rather than separately.

Commercial risk assessment is data intensive and ripe for the incorporation of real-time external data. Commercial insurers rely upon accurate and comprehensive risk assessment when underwriting policies. For example, commercial insurers often write policies for facilities such as storefronts and warehouses as part of their offerings. In order to correctly assess the risk to a facility and thereby support the actuarial and underwriting processes, a risk assessment is performed. To do this, risk assessors traditionally use a fixed set of data, which can be limited by its availability and the capability for synthesis. This data may include geographic data to determine if the property is located in a particular area prone to natural disasters such as a flood plain or earthquake zone. Political data also could be considered to assess if the facility is located in a region of political instability. Economic data is assessed to see if the facility is located in a high, middle, or low economic area and crime data is reviewed to see if the facility is located in a high crime area. Finally, risk density may be considered to assess nearby risk factors.

Exhibit 1: Types of Data Required for Risk Assessment



Across all of the factors analyzed, insurers have a great opportunity to make their risk assessments more meaningful by accessing near real-time data available from external sources.

¹ Ordnance Survey "The big data rush: how data analytics can yield underwriting gold". <http://www.ordnancesurvey.co.uk/about/news/2013/the-big-data-rush.html>

1. The Big Data Benefits for Risk Assessment in Insurance

Using near real-time big data will inform the commercial risk assessment with much more granular and current information than is typically included. Up-to-date information can be assessed on the likelihood of relevant perils at the property location, the existence of high-risk items nearby, the density of existing policies near the property, and other risk items.

This granular, up-to-date data enables a very accurate risk assessment on an individual property rather than a portfolio basis. Individual risk assessment helps insurers more accurately price policies because it provides a better-informed assessment of the policy submission before acceptance of that policy. Individualized risk assessment will result in unique pricing of the premium cover required to cover the risks inherent at that particular property.

For insurers, informing risk assessment with big data can provide better identification of regions where more aggressive terms should be used to reduce exposure, thereby providing better risk management and reducing costs. For policyholders this approach means insurers can identify regions where more attractive terms can be offered and reward good customers with greater pricing accuracy.

Insurers understand this opportunity. In the underwriter survey referenced earlier, 96% said the digital world would lead to the emergence of new risk rating factors. Nine out of 10 said access to real-time claims data would help price risk more accurately.

Exhibit 2: Considerations when building the business case for commercial insurance risk analytics

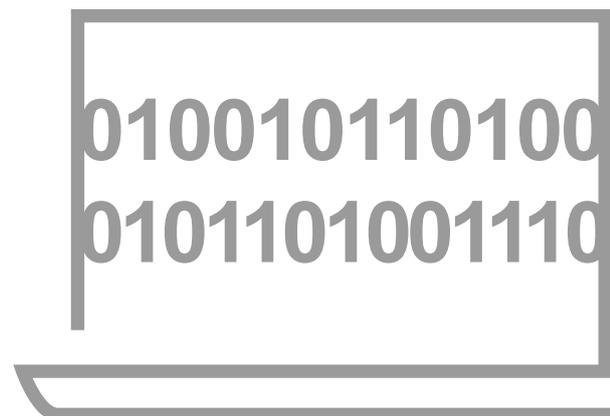
	How will supplementing account level management with individual risk level management help to mitigate risk and improve compliance?
	By moving from piecemeal data to unified information how much can be gained in operating efficiency?
	By how much can the cost to settle claims be reduced by utilizing the ability to more accurately identify higher risks?
	How much can customer satisfaction and retention be improved through the ability to reward good risks instead of taking a “one size fits all” approach?
	By achieving lower loss ratios how much can profitability and use of capital be improved?

2. The Roadblocks to Seizing the Big Data Opportunity

Despite this realization, significant challenges are impeding insurers' exploitation of big data. Some of these challenges are rooted in a lack of business analysts who understand data analytics and data-centric methodologies. Insurers have expressed frustration over specific skill shortages ranging from a lack of subject matter skill to analyze new sources of data to a lack of technical skill to integrate vast data in a variety of formats from disparate sources.

Further challenges exist with data access. Extracting data from multiple sources is inefficient and time consuming and, as a result, data is not up to date and is used reactively instead of proactively. Many underwriters struggle to find and access the data that they know they need for a given analysis from the vast amounts of data that could potentially be queried.

To try to capitalize on big data, many insurers are diverting resources to the data management function, resulting in underwriters and pricing analysts being charged with accessing, managing and integrating data into a single data set. This can be an expensive approach that takes underwriter and pricing analyst time away from their area of specialty. In addition, the current technology landscape within many insurance organizations makes it challenging to integrate the software and hardware required to process big data effectively.



3. Factors Insurers need to Consider in Building the Capability

To take advantage of big data, insurers need to think innovatively about how to overcome these challenges and maximize their return on big data investment. There are many possible options available from developing the capability in-house based on a choice of big data platforms to choosing a commercial solution available in the market. To determine the best path forward and reap the benefits of a more granular risk assessment informed by up-to-date big data, insurers should consider four factors.

3.1. Skill Sets

Many of the challenges insurers currently face in trying to use big data are grounded in not having the right resources in place. Numerous different skill sets are required to leverage big data and the combination rarely reside within a single individual. Varied skill requirements include technical skills in data management and integration to aggregate data in multiple formats into information usable for analysis, analytical skills to make sense of the data available, and subject matter skills to draw appropriate conclusions and make decisions based on underwriting and knowledge of risk.

Insurers need a resource strategy that will equip them with all of the technical and analytical skills to enable the underwriter. While insurance professionals thoroughly understand insurance they have not historically needed extensive information management skills. By supporting underwriters with technical and analytical skills, insurers can reduce the information management burden currently placed on the underwriter and more cost-effectively manage data access and integration. These skills will likely need to reside in-house if a custom solution is being developed. If a commercial solution is chosen insurers can count on the vendor to provide the technical skills and to help develop the analytics, dashboards and reports the underwriters most frequently will use.

3.2. Data Integration Needs

To maximize the value from big data, a risk analytics solution should integrate a wide range of finely-grained data from both internal and external sources, including geospatial data, sociopolitical data and social media. Data to consider integrating from within the insurer includes customer, policy and claims data. A benefit of external solutions is that analytics and database management can be combined in a unified framework for data integration and presentation thus giving the underwriter a single resource for the collection, integration, and analysis of a wide range of data sources.

3.3. Ease of Use

Underwriters will want to interface with big data in ways that are intuitive and make it easy to access the data. It is important that data is configured and displayed such that the right data is presented in the right format for the right decisions. As insurers consider their risk analytics solution they should evaluate the following requirements:

- Does it offer analytic dashboards? Considerations for reporting include KPIs, risk density analysis, historical client analysis, policy and claims analysis and details related to fraud.
- Does it provide drill-down capability into the underlying data such that risk groupings are drillable to individual risks and further supporting data? Can it provide data by various dimensions such as insured party, postal code, peril and more?

- Does it offer analytics on the entire portfolio of existing policies, such as Loss Ratio statistics, changes over time and Risk Density using Expected Maximum Loss amounts?
- Can data be available on a self-service basis in near real time?
- Does the solution offer the capability to schedule work to meet demand rather than living with 'when the report arrives'?

3.4. Transferability

Commercial property risk assessment is just one example of the numerous big data possibilities for insurance risk assessment. The same approach can be applied to any other business line that could benefit from the results of analysis of large datasets that are relevant to that business line. Is the solution being considered for commercial property risk assessment portable to other lines of business once its efficacy is proven in commercial property? Whether building or buying a solution the return on investment will be more rapid if the approach chosen for property risk assessment is reusable in other areas.

The Path Forward

There are numerous potential paths to integrating big data into risk analytics. Regardless of approach, underwriters require a mechanism for the collection, synthesis, and analysis of risk data and the ability to quickly access significantly larger and more diverse data sources. By thoughtfully considering the above critical factors, insurers can find a solution that supports the underwriter in managing and integrating risk data and frees their time to focus on the business of insurance. In so doing they can conduct smarter risk assessments, more accurately price policies, improve control and tracking of risks and profitability across a policy portfolio, and provision significant organizational cost benefits.

To learn more about Insurance Risk solutions, visit www.capgemini.com/cira.

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