Integrating the value of data in the underwriting process

An underwriting point of view
Introduction
The age of intuition based underwriting is ending and the underwriting role is changing at an exponential rate. The growth in large amounts of data has initiated a more predictive risk management environment, which is driving a demand for a cultural shift within the traditional underwriting approach. Underwriters are being asked to change the manner in which they assess risk, manage their books, and market their products. The optimal execution in the underwriting process will soon require the development of new skill sets in order to meet the demands of the evolving underwriting model.

In response to the exploding volume of data now available to insurance carriers, IBM initiated a study on the integration of data into the underwriting process. We conducted internal interviews, reviewed IBM-sponsored case studies, and held conversations with industry leading clients. This study provided us with a high-level perspective on the current state of data integration practices in underwriting.

Not surprisingly, we came across a wide range of disparate practices. We found that some carriers are forging ahead with telematics and complex algorithms, while others are underwriting each risk based on the underwriters’ experience and intuition. Even when data is modeled, insurers struggle with how to integrate the derived insights within the underwriting process and align them across enterprise objectives.

We believe that analytics and big data will be the sentinel change agents of a transformational environment. We anticipate shifting roles for underwriting and more focus being given to back office functions. The ability to compete and profit will come from aligning these new roles to improve the effectiveness of integrating data into the underwriting process.

The following discussion provides a series of case studies of how select insurers are transforming themselves, along with next steps that insurers can consider as part of their own transformation:

1. Managing the collection of data
2. Integrating data insights into the underwriting process
3. Data and innovation in the underwriting process
4. Funding underwriting improvements

“Insurers have finally awoken to the fact that they’re sitting on a data goldmine... the kind of data they’re going to have to attach to claims, to store, to mine, and to analyze is also changing. Increasingly, it will be unstructured social media, user-generated data like photos, video, and audio from helpful claimants, and, soon, from “smart” things like cars and buildings.”

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1. Author's note: Credited to an anonymous source.
Managing the collection of data
The insurance industry has a long history of maintaining data for underwriting transactions either in paper files or legacy systems. Legacy systems had been designed more to connect workflow than to harvest the information surrounding the underwriting transaction, making accessibility to the underwriting data manual and onerous. With improvements in technology, there are many new ways to extract data. As the capability to extract data has progressed, there is a counterweighing and maturing thought that not all of the historical data that can be recovered is precisely relevant to what insurers need or want. With the developing maturity in understanding data, there are shifts in attitudes regarding the power of alternatively sourced information.

As the industry pursues more effective collection of its data to drive better business results, the issue of getting information into the underwriting process comes across as a challenge. Despite improvement in data collection and consumption practices, in many cases transactional underwriting decisions remain reliant upon an underwriter's intuition. We find that many insurers can improve their ability to efficiently integrate critical and timely insights into the underwriting process.

With this going on, we are observing a trend in the number of insurance organizations that are engaged in some form of automated data collection. This activity has the effect of growing data sets at an exponential rate with the larger data sets creating opportunities to derive additional insights. Additionally, the resident knowledge already held within an insurance carrier and the challenge becomes how to disseminate the collective insights (current and in development).

In some examples, insurers are looking to leverage the experience and knowledge of experienced underwriters by capturing their information in a consumable format to be shared and integrated with the underwriting process.

Case study: A large commercial carrier extends their underwriting expertise
One large commercial carrier understood the need to capture the intellectual capital they already possess. And, with that knowledge, they sought to apply their analytics and predictive models to create a powerful tool capable of segmenting, scoring and predicting at the individual risk, line of business, and book levels. In their initial efforts they developed an industry-leading data store.

However, instead of creating an efficient knowledge sharing delivery system, the carrier found that their data was difficult to access and underwriters spent valuable time researching solutions without finding what they needed. The answer was to develop a logical business rules tool that pushed relevant information to the underwriter during the account underwriting process (as they needed it). The carrier reaped the following benefits:

• A tool that evaluates risk factors as they accumulate on an account and pushes guidance to the underwriter on exposures that should be considered
• A customizable dashboard that provides the underwriter rule-based account profiles to guide strategic selection of the best “profit / win” opportunities
• An innovative application of “risks like this” that provides a link to accounts that have similar risk properties and how these accounts were priced and packaged

The information stored in the central data repository has now become the carrier’s growing level of intellectual capital. It extends its underwriting expertise to more corners of the company, applies up-to-date best practices, and can identify outliers for follow-up performance analysis. Additionally, insights gained from this approach have begun to tighten the accuracy of predictive models.
To address the challenge of managing data delivery to their underwriters, insurers should assess their current data collection tools and processes (systems and applications) to determine whether they create efficiency or improve access. Data collection is reaching unprecedented levels and being able to get that information to the underwriter requires a strategically transformative effort incorporating component business modeling and the right tools.

**Integrating data insights into the underwriting process**

Gaps in the alignment of data and the underwriting process occur when data is not linked real time to underwriting activities. Insurers need to improve their strategic underwriting domain by aligning their data with their business strategy, by delivering in a timely manner, and by leveraging both across the enterprise. As an example, we see actuarial insight that may have application into multiple areas of a company’s underwriting but is often integrated narrowly as it is applied to only one process or risk classification.

We find that communication of book composition; loss trends, market pricing and exposure concentrations are delivered late, delaying response and reducing the impact of the insights. Even innovative best practice underwriting solutions offered by one business unit may not be available or immediately consumable by others with similar risks and opportunities. As a result, we are seeing more emphasis by companies to understand and then implement these insights more quickly into a greater spectrum of underwriting activities and across a broader range of functions.

**Case study: A property and casualty client integrates data for a broader view of the business**

One property and casualty client is aggressively pursuing the integration of real time data to improve underwriting performance. The carrier implemented a work station and process that provides key integration points for real time data in the underwriting process. As new submissions are received in the pipeline, a pre-qualification score is applied to prioritize opportunities that help the underwriter’s production and performance. On-point analysis of risk factors and corresponding underwriting treatment is then pushed to the underwriter to guide selection of the best “win” opportunity along with enterprise-designed sales points to offer on the proposal.

The benefits realized by the carrier are as follows:

- Underwriters are given real time awareness of their personalized metrics with focus on key UW performance objectives.
- Risks are prioritized to provide guidance on the best opportunities for the underwriter as part of their book performance. They can also perform “what-if” analysis with a corresponding impact view to their business objectives.
- The underwriter is reminded of key sales points to make as part of their proposal.
- The process leverages predictive scoring adjustments based upon the solution selected. An underwriter could improve a risk score by addressing a risk factor with one of the options identified for the account.

This broader view of both the underwriters’ and line of business portfolio helps in the management of the book of business. Deviations from expected outcomes are more easily traced back to specific decisions whether they are analytical and risk-based or marketplace and sales impacted, providing a growth in their knowledge base.
Insurance companies recognize that the drivers for healthy performance are to expand and grow beyond simple calculations into the realms of business intelligence and analytics. The traditional examination and explanation aspects of underwriting coupled with the dynamics of a data rich environment yield further capabilities in the use of predictive analytics that are transforming the insurance business today.

The growth in large amounts of data has begun to result in a more predictive risk management environment. This is driving a demand for more proactive products but also necessitates a cultural change within the traditional underwriting approach. Significantly, underwriters will be asked to change the manner in which they assess risk, manage their book, and market their products.

Ultimately, data integration with the underwriting process will require the development of new skill sets in order to meet the demands of the new underwriting model. For example, companies are evaluating the benefits of analyzing the entire book of business, not just statistically sampling from the population. Re-underwriting the entire book is now not only possible, but reasonable as a way to better understand changes in insights, decisions, or risk profiles.

Integrating insights from big data represents new requirements in data analytics and expertise giving rise to a new business imperative to grow data literacy. Some insurance companies are responding to the increasing complexities of underwriting, risk analysis and markets through the appointment of a new position: Chief Science Officer. This appointment is being made to help the company further formalize the evaluation and response to data and complex risk exposures. Additionally, the position can help the company better understand how current and emerging scientific issues impact both the insurer and the policyholder.

To address the challenge of integrated data insights into the underwriting process, insurers should begin by understanding the various dynamics of their data, the analytical environment and the organization itself. This understanding must include such aspects as a detailed structure of the data, its sources, how fast it is created, its real quality and its breadth of applicability. All of these attributes must then be placed in context to the growing skill set that must be available to leverage a data rich and analytic environment. Companies must be prepared to objectively study the structure and functioning of their underwriting processes and organization. This then allows them to realign it to move from merely collecting, validating and simplistically using data to a much more active structure that allows for more of the insights to be obtained and acted upon in as broad a manner as possible.
Data and innovation in the underwriting process

We have found that many companies believe they possess a level of innovative uniqueness, either in terms of their distribution channel, or more notably in their underwriting expertise (in a particular segment or sub-segment of the market). Historically, niche underwriting expertise has provided a competitive advantage that was difficult to replicate but with the emerging era of big data, such advantages have begun to erode.

Facing this reality, insurance industry leaders are now taking increased strategic risks to get to the forefront of product innovation and are employing technological experimentation to drive better results with their data. Pointedly, innovative experimentation of technology and data are accelerating the evolution of the concept of risk. While most risk can be placed into classic operational, financial, and market categories, the growth of data sets is increasing awareness of both the complexity as well as the interrelationships. The dynamic and evolving nature of risk is making historically biased planning processes less useful in guiding companies.

Companies that are moving to a more robust analysis of risk attributes and applying a more dynamic approach to their evaluations are gaining insights that allow them to be aware of the changing aspects of risk ahead of the market. While there still remains the challenge of translating the insights into action, these insights provide them with market making advantages.

Delivering the insights to the underwriting process has become a new success metric for leading insurers. Instead of a vertically delivered and reactive approach on risk and exposure trends, these companies are providing real time access to developing exposure concentrations, new risk insights, and dynamic profitability model equations.

Industry examples

A contemporary example is Progressive, whose innovations are routinely watched and observed for their attention grabbing creativity. More recently, they have flexed their marketing and innovation capabilities as an insurer who is integrating big data for underwriting reasons, while at the same time combining the delivery of service to their clients.

Progressive has heavily marketed their “Snapshot®” tool (which electronically records driving patterns for a vehicle). This feature has proven to be popular with their customers with a guarantee that data collected would only be used to lower the rate for the client, never to raise it. This initial experiment has been so successful, it was expanded to offering the tool to prospective clients in order to provide them a chance to qualify for a lower rate quote.

This program enables Progressive to obtain an enormous amount of information to consume, analyze, and apply. Their innovative pursuit and desire to integrate data with underwriting is game changing.

Another example of innovative experimentation comes from Geico, where pursuit of ‘simplifying’ the application process has led them to apply the following developing technology:

Their SnapQuote® application provides insurance quotes to consumers who take a picture of their driver’s license with a mobile phone in order to generate a premium quote. Their efforts combined the growth in mobile technology to extract key data points coupled with analytics that rely upon specific data points and related third party ‘pick-ups’ to drive confidence to extend a competitive quote.
Insurance companies are faced with increasing competition in the space they previously held an advantage—their underwriting expertise. Big data and data analytics are creating the opportunity for a more level playing field. Getting to innovative approaches in capturing and integrating data within the underwriting process will reward the early adopters.

To get to innovative applications of data, insurers need to develop a culture of educated exploration. Insurers first need to assess the ease, level and timeliness of getting the ‘right’ data to the underwriting process. They should then employ proof of concept, and iterative pilots to test and learn approaches. Data maturity comes through experience and rewards those who are willing to take the risk.

**Funding underwriting process improvements**

The continuing financial crisis has forced the insurance industry to re-evaluate budgets and re-prioritize both planned and in-flight initiatives. As market capacity normalizes, many property and casualty (P&C) insurance companies place underwriting transformation at or near the top of their list of strategic initiatives. Yet, companies are faced with maintaining legacy systems that consume most of the available funding.

While challenged by funding issues, insurance organizations are committed to making significant investments to create more efficient underwriting processes. They are looking for tools and technology packages that provide the ability to support aggressive growth plans while reducing costs.

There are two paths that insurers can take to address the challenge of funding. The first is to streamline and reduce redundancies in the underwriting process and operations to identify cost savings. This can be accomplished through the use of leading edge underwriting workstation technologies. These tools support the underwriting process by assessing completeness of submissions, enabling the clearance process, preliminary determination of risk eligibility and smart routing of submissions to the underwriter. The tools provide the opportunity to eliminate much of the low-value add work that many underwriters still perform. The second path is to take a component-based approach. Core activities are identified, differentiators are determined and business priorities are assessed. This helps determine the focus areas for funding. Current influencers include data integration and the ability to perform “smart” underwriting. These should function as the drivers of underwriting process improvement funding.

**Conclusion**

The tolerance for underwriting cycles has passed. In the future, the practice of underwriting will be driven by the interaction of data within underwriting, pricing, exposure analysis, claims and renewal processing. The underwriting practice will accommodate the increasing complexity and size of data with a resulting precision in risk taking and underwriting decisions.

The role of the underwriter is evolving to include the capability to leverage access to intellectual capital, mature data, and real time metrics. Tools that offer real time price modeling, micro segmentation, exposure concentrations, reinsurance alternatives and predictive alerts will become standard. The sophisticated underwriter will learn how to channel this new “guidance” not to avoid risk but to craft profitable solutions. Further, the intellectual capital developed over the years through traditional underwriting methods will be “mined” such that the empirical experience of the underwriter is not lost in the new underwriting model.

We discussed four common challenges that insurers are dealing with when it comes to integrating data into the underwriting process. Some insurers are combating these challenges with unique methods and tools, such as predictive analytics and risk modeling, while many others are still struggling with their strategy and alignment of the data to their processes. In the new paradigm the differentiators will be those who integrate big data into the strategic and tactical application of their underwriting execution.
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