Assessing Property/Casualty Insurers' Use of Business Analytics: Waking Up to Adaptability

WHITE PAPER

Sponsored by: Cognos, an IBM Company

Barry Rabkin Peter Farley
August 2008

FINANCIAL INSIGHTS OPINION

Identifying profitable opportunities is becoming increasingly harder for property/casualty (P/C) insurance companies. P/C insurers are facing an ongoing soft market, more stringent regulators, and ever-increasing expectations from producers, policyholders, and prospects. The basis of competition is quickly becoming the ability to adapt to changing situations.

P/C insurers that successfully adapt will be those firms that develop a cultural disposition toward applying business analytics. To determine if P/C insurers are adapting, we assessed the P/C insurance industry's current and planned use of business analytics in North America and Western Europe. We found that insurers do not fully understand why business analytics is important to their competitive success, but there is a palpable awakening in the industry, as evidenced by the following trends:

- Most insurers are repeatedly running the same set of reports, although with new data. These insurers can see the past very clearly but are blind to current and potential future events. Decision making by these firms is myopic at best.
- A growing number of insurers are using business analytics to strengthen pricing, improve target marketing, and provide better support to their field staff and policyholders.
- An emerging group of insurers are using business analytics to strengthen their planning capabilities. This enables them to ground their firm's outcomes to set goals, metrics, and measures.

Business analytics tied to corporate goals and objectives is a critical capability for insurers that want to profitably persist over the long term. The challenge is not calculating the ROI of using business analytics but instead putting a value on ROE — the return on existence — if insurers do not use business analytics.

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.620.5533 F.508.988.6761 www.financial-insights.com

IN THIS WHITE PAPER

In this white paper, Financial Insights discusses our assessment of the P/C insurance industry's current and planned use of business analytics. We base our assessment on ongoing research in this area augmented by primary and secondary research we completed in the second quarter of 2008 of P/C insurance companies in North America and Western Europe.

SITUATION OVERVIEW

In surveys conducted by Financial Insights in 2007 and 2008, North American and Western European P/C insurance executives consistently ranked regulatory compliance and growth as the top 2 strategic business objectives. Other important strategic objectives include improving ease of doing business, cutting costs, and effectively responding to a changing risk landscape.

How can P/C insurers achieve these and other strategic objectives to maintain or strengthen their firm's competitive position? Successful P/C insurers will be those that are the most adaptable to change in both their external and internal environments.

Improving Corporate Mortality

Since life began on Earth, 99.99% of all biological species that have ever existed are now extinct. Charles Darwin summed up the situation succinctly: "It is not the strongest of the species that survives, or the most intelligent that survives. It is the one most adaptable to change." Evolution is an optimization engine for life.

Similar issues of corporate mortality exist in the business world. Paul Ormerod writes in his book *Why Most Things Fail: Evolution, Extinction & Economics* (Pantheon Books, 2005, ISBN 0-375-42405-9) that "more than 10 per cent of all economically active firms in the United States become extinct each year."

The situation for insurance companies is significantly more competitive because insurance is a pure information-based product. The ultimate delivery of this intangible product is a claims payment most clients hope never to receive. Offering a conditional promise makes the development of competitive advantage, brand recognition, and customer loyalty very challenging. Insurers must establish how to compete successfully both in a market space and in an information space.

The competitive dynamics of the insurance market space encompass the plethora of regulatory concerns, shifting demographics, and new players entering the market while others are acquired or head for the history books. Insurers also have to factor in up-and-down economic conditions, never-ending producer and policyholder expectations, changing weather patterns, as well as other events or conditions shaping the industry's revenue and profit potential.

Developing strategies and tactics for the market space is necessary but not sufficient to succeed. Insurers must develop strategies and tactics to compete in the information space. That space consists of all the information that is part and parcel of the market space's people, events, and transactions plus the information that insurers generate and consume both internally and through their interaction with the shifting marketplace.

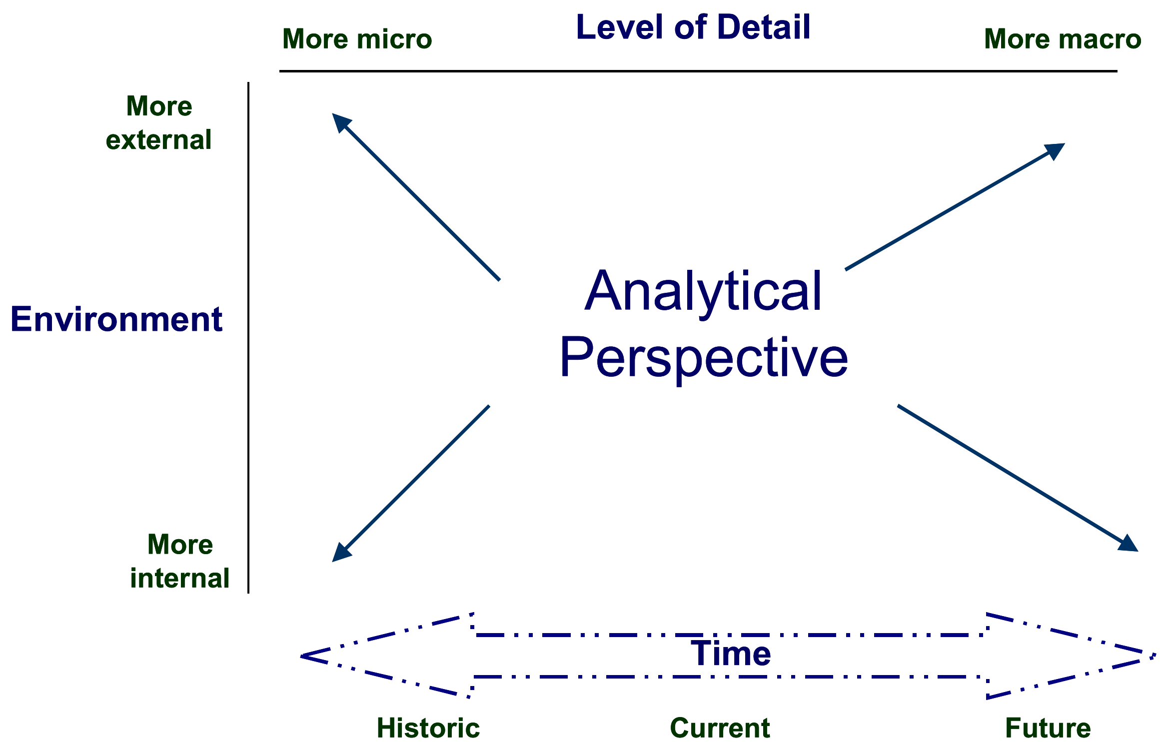
Only P/C insurance firms skilled in the application of business analytics that addresses both the market space and the information space will be able to make better decisions and make them more quickly than their competitors. Business analytics is an optimization engine for insurance companies.

Creating a Robust Analytical Perspective

A robust analytical perspective (see Figure 1) encompasses three dimensions — environment (both external market and internal company operations), level of detail, and time. The specific areas of analysis driven by these three dimensions rest with each insurance company. However, insurers that master the art of conducting wider and deeper analysis of these three dimensions will be in a stronger position to make more effective and timely decisions.

FIGURE 1

A Robust Analytical Perspective



Source: Financial Insights, 2008

Each insurer's knowledge of its competitive situation, strategy, and tactical plan should drive its business analytical initiative. However, we offer examples (see Table 1) as a guide for P/C insurers to create their own set of analyses. Any area of analysis should be investigated along the entire time spectrum from historic to current to predicted future states.

TABLE 1

Business Analytical Examples of Areas of Analysis

	Level of Detail	
	More Micro	More Macro
Environment		
More external	• Prospect profitability • Producer profitability	• New mix of homes or businesses in a given geography • Merger and acquisition possibilities
More internal	• Historical financial performance of a specific line of business • Impact of changing reinsurance funding	• Shifting target markets for revenue generation • Impact of new product concepts

Source: Financial Insights, 2008

Specific P/C Insurer Approaches to Business Analytics

Augmenting our ongoing research into the business analytics space, Financial Insights interviewed seven P/C insurers in North America and Western Europe to get a sense of their current and future plans for using business analytics.

Defining Terms

Definitions are important. In the case of business analytics, how an insurer defines the term informs a path of action or an understanding of an objective to be resolved. IDC (the parent company of Financial Insights) defines the business analytics market as one that encompasses performance management (PM) and several other related analytics markets, including business intelligence (BI). See *Worldwide Business Analytics Software 2007–2011 Forecast Update and 2006 Vendor Shares: Business Intelligence, Data Warehousing, and Analytics Applications Forecasts Point to Continued Strength* (IDC #208699, September 2007).

We asked each insurer how it defines the terms *business intelligence* and *performance management*. The responses to these questions are shown in Table 2. Each of the insurance companies that participated in the interviews has been coded to maintain its identity in this table and all subsequent tables in this document.

Some key points are:

- These insurers do perceive a difference between BI and PM.
- The insurers think of BI as a process or set of tools that transforms data into information for a purpose that keeps the company moving forward. This information alchemy is precisely what any business analytical capability should accomplish.
- The insurers look to PM to measure actual results against their firm's strategy and/or agreed-upon goals. PM, like BI, is both a strategic capability and a tactical capability.

When asked if any of their current applications are PM applications, three of the five insurers that answered this question said they did not have PM applications.

TABLE 2

P/C Insurers' Definitions of Business Intelligence and Performance Management

Term	Insurer 1	Insurer 2	Insurer 3	Insurer 4	Insurer 5	Insurer 6	Insurer 7
Business intelligence	Information and data that provide visibility into the overall effectiveness and performance of the business in the areas of people, processes, and technology; also how that is driving customer satisfaction and loyalty.	Being able to take data and turn it into actionable information that allows for knowledgeable decisions.	Turning disparate data into meaningful information.	Providing basic decision-making capabilities to business users for their day-to-day management of the business.	Ability to report and get data out to the business executives.	Not relevant what it is called. Any BI/PM solution must enhance business performance.	The key is the use of information — visibility. You need to view the business to better understand and enable people to make decisions. BI is more of an "action" mode rather than a "why" mode. BI is about "what more will we do?"
Performance management	A business process of tying the firm's business strategy to its business performance as viewed by its goals, objectives, and measures.	Being able to look at key performance indicators (KPIs) and determine how the firm is trending.	Tracking actual results to plan in order to make business decisions to meet strategic goals.	Setting goals and measuring actual results to those goals. PM has to have a concept of enterprisewide goals and goals that are agreed on by the people who will be held accountable to them.	Measuring the firm's progress to preset goals and acting to ensure those goals are met.	Being able to get hold of the information you need easily and use it to answer pertinent business questions.	PM is planning and forecasting, supported by BI. It is what happens on a daily basis from an operations perspective and how it feeds up to the strategy level.

Source: Financial Insights, 2008

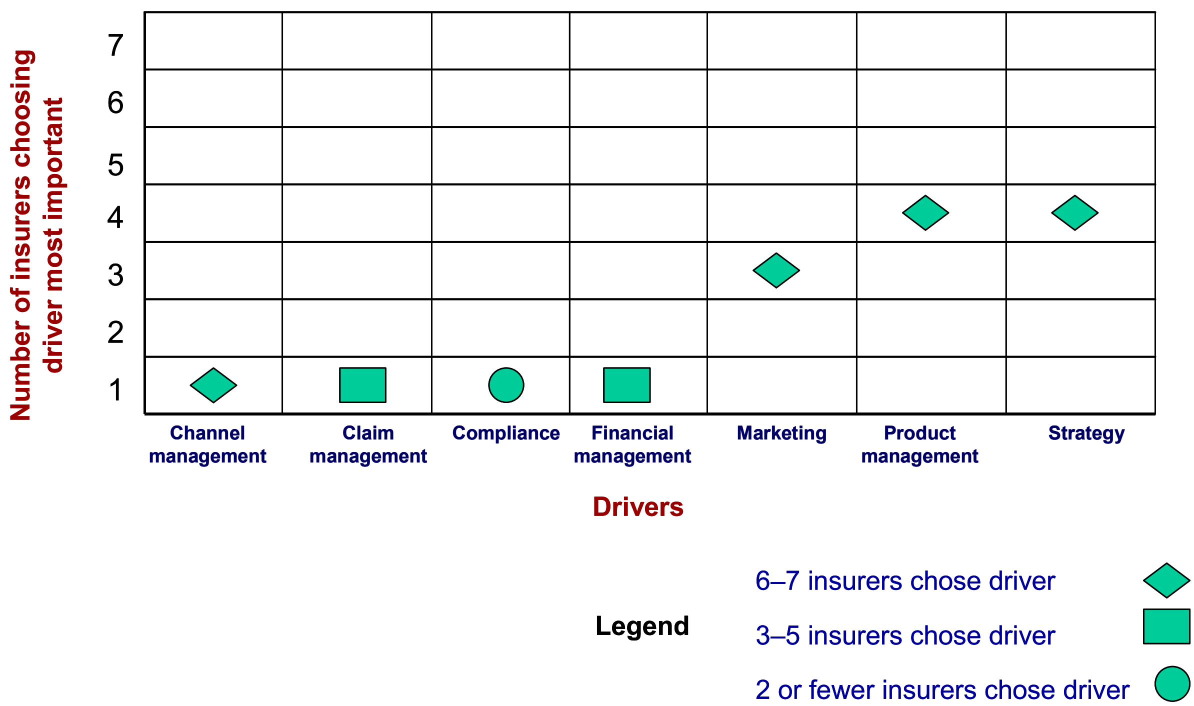
Drivers for Using Business Analytics

When we asked insurers to identify the drivers for using business analytics for BI or PM, four drivers stood out: strategy, product development, marketing, and channel management (see Figure 2). When asked which were the one or two most important drivers, insurers ranked both strategy and product management most important, with marketing close behind.

Figure 2 illustrates both dimensions. Consider financial management: Three to five insurers (i.e., noted with a rectangle) stated that this was a driver for using business analytics, but only one of those insurers stated it was one of the most important drivers.

FIGURE 2

Drivers for Using Business Analytics



Source: Financial Insights, 2008

Each driver shown in Figure 2 is a high-level concept based on one or more detailed questions we asked during the executive interviews. This list shows selected detailed questions for each of the drivers:

- **Channel management** — distribution/channel management (Is supporting channel management a driver for using business analytics?)

- **Claim management** — claim adjudication and management
- **Financial** — financial planning, budgeting, profitability, managing reinsurance ceding/assuming
- **Marketing** — speed to market, customer segmentation, and target marketing
- **Product management** — product development and pricing/underwriting
- **Strategy** — supporting the company's strategy

Hurdles to Using Business Analytics

When insurers were asked to identify the hurdles or concerns that had to be overcome or resolved to improve their firm's use of analytical software, they indicated that data management is a major hurdle (see Figure 3). Support, culture, and skills were chosen by three to five of these seven P/C insurers as hurdles. When we asked which were the one or two most important concerns, most of the P/C insurers stated that data management was the most important hurdle they had to overcome before improving their firm's use of business analytics.

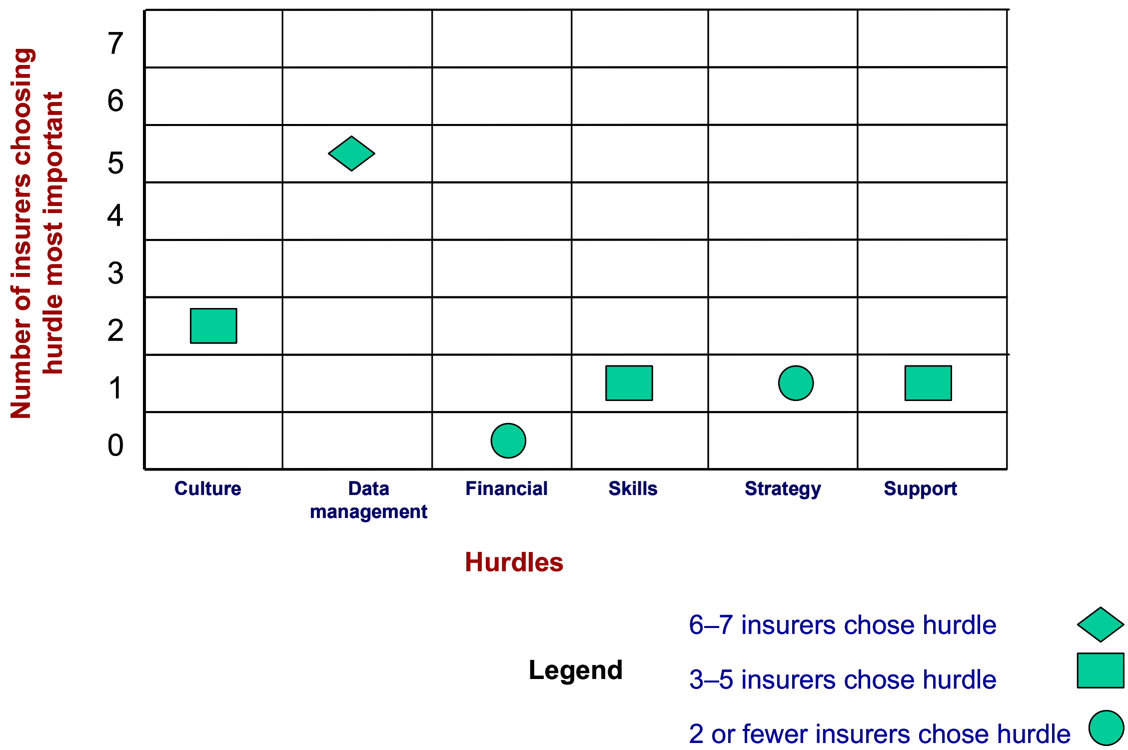
Figure 3 illustrates both dimensions. Consider data management: Six to seven insurers (i.e., noted with a diamond) stated this was a hurdle to using business analytics, and five of those insurers stated it was one of the most important hurdles.

Each hurdle shown in Figure 3 is a high-level concept based on one or more detailed questions we asked during the executive interviews. This list shows selected detailed questions for each of the hurdles:

- **Culture** — creating an analytical culture (Is creating an analytical culture a hurdle to be resolved to improve your firm's use of business analytics?)
- **Data management** — determining what data sources to use, determining how clean or viable the data is, getting timely data as needed, and creating a master data management capability
- **Financial** — inability to demonstrate ROI at all or as quickly as needed
- **Skills** — lack of staff with the requisite skills or competencies to use the analytical software or understand the results
- **Strategy** — lack of corporate strategy or vision, lack of communication of firm's corporate strategy
- **Support** — lack of executive/departmental support, lack of internal customer support or buy-in for analytical initiatives

FIGURE 3

Hurdles to Using Business Analytics



Source: Financial Insights, 2008

Benefits from Using Business Analytics

When we asked insurers to identify the benefits their firm wanted to realize from using either BI or PM applications, more insurers chose improved channel management and improved product management (see Figure 4). However, when they were asked to identify the major benefits they expected in three to five years, improved channel management still made the list, but improved financial management and improved marketing were added to the insurers' expected benefits.

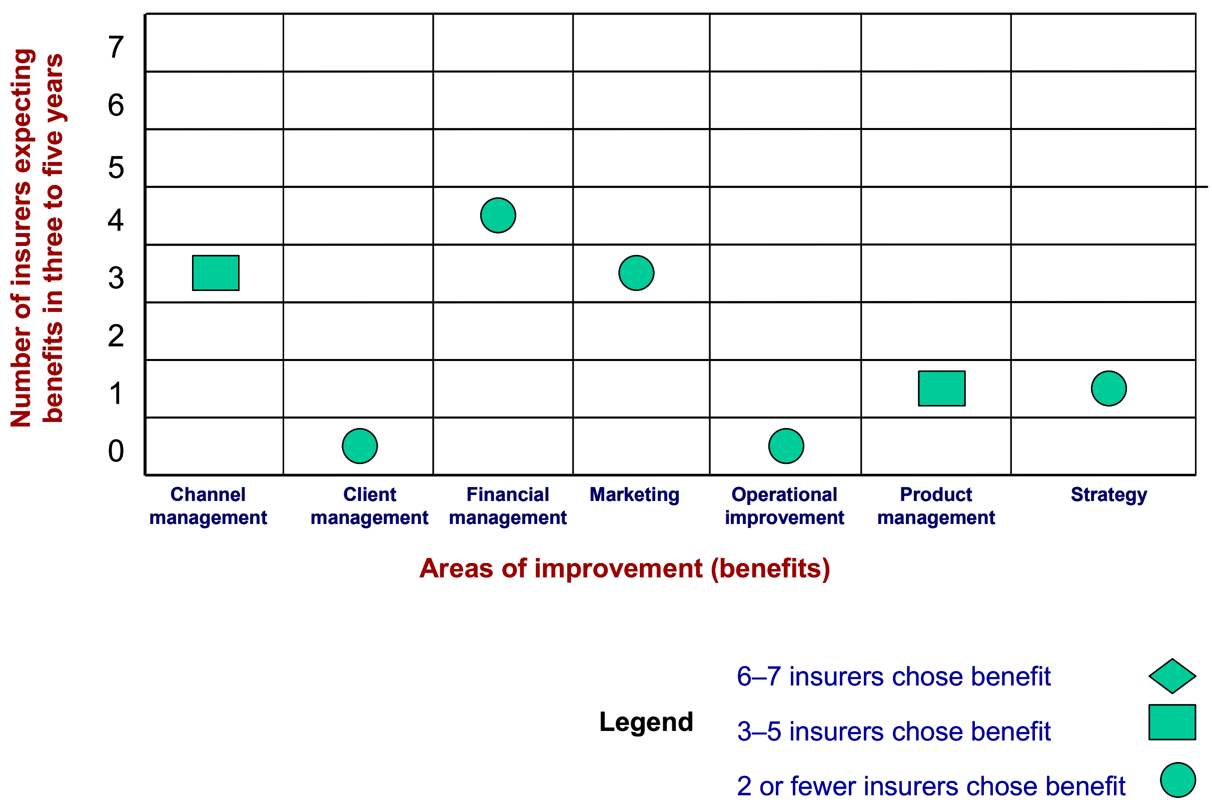
Figure 4 illustrates both dimensions. Consider financial management: Two or fewer insurers (i.e., noted with a circle) stated this was a benefit they are currently realizing by using business analytics, but four insurers stated they expected that it would be a major benefit from using business analytics in three to five years.

Each benefit shown in Figure 4 is a high-level concept based on one or more detailed questions we asked during the executive interviews. This list shows detailed questions for each benefit insurers were given as a choice:

- **Channel management** — improved distribution profitability or productivity analysis (Is improved distribution profitability or productivity analysis a benefit your firm is realizing from use of BI or PM?)
- **Client management** — improved policyholder retention
- **Financial management** — improved financial planning, more transparent budgeting, improved profitability, and improved financial management/business planning
- **Marketing** — sharper market segmentation, faster speed to market, and wider geographic rollout
- **Operational improvement** — improved operational performance
- **Product management** — more accurate pricing, improved product development
- **Strategy** — better understanding of effectiveness of business strategies

FIGURE 4

Benefits from Using Business Analytics



Source: Financial Insights, 2008

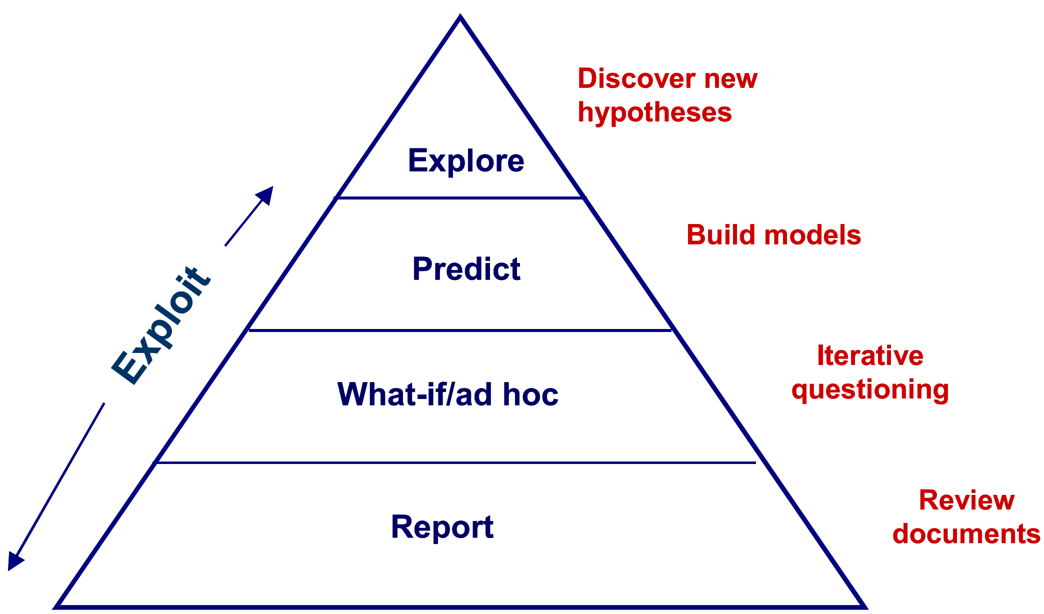
Thrill of Discovery

After the extremely nontrivial issues of data management are resolved, the essence of effective use of business analytics is the nature of the relationship investigators — and to a varying degree, the senior executives who are their customers — have with the data. In an insurance company, investigators can be found in areas with an enterprisewide mandate, such as finance, marketing, or actuarial, or in line-of-business operational areas, such as underwriting or claims.

Success using business analytics — whether BI or PM — is about investigators enjoying an active thrill of discovery rather than being passive consumers of periodic reports. Discovery primarily focuses on either exploiting available data or exploring new ideas that require new types of data from the same or new sources. From a business analytics perspective, discovery that focuses on exploiting data is about working with current stated or implicit hypotheses, while discovery that focuses on exploring is about identifying new hypotheses. Figure 5 shows a four-step maturity framework for analytics investigation that describes the key activities of the exploit and explore stages.

FIGURE 5

Analytics Investigation Maturity Framework



Source: Financial Insights, 2008

All seven of the P/C insurers we interviewed are running standard reports with new or refreshed data. These seven insurers are clearly exploiting the data flows available to them at the beginning level of the framework. We found a mix of these insurers starting to develop higher levels of business analytics maturity by moving to deeper aspects of exploit-driven discovery, including conducting what-if analysis and building models for predictive analytics initiatives.

However, only one insurer is using business analytics to create new hypotheses to investigate with subsequent analysis. Pioneering exploration is not yet an acquired skill for six of these P/C insurers. Taken as a whole, the P/C insurers we interviewed are not mature users of business analytics.

Dispersion and Presentation of Business Analytics

Four of the P/C insurers stated their analytical applications are concentrated in departments such as finance, marketing, and operations, including policy administration, billing, and claims. Two insurers are using subject matter experts (SMEs) such as product managers, actuaries, and line-of-business staff to enable the business analytical initiatives.

Insurers that share their lessons or challenges from using business analytics across multiple departments have reached a higher state of maturity in this application space. Only one of the seven insurers interviewed said that it shares lessons learned by having quarterly internal user group meetings attended primarily by the businesspeople using the analytics software.

Business Analytics Best Practices

Financial Insights believes that a best practice is an initiative based not just on the use of software but also on the continued strengthening of a firm's cultural commitment to using business analytics.

Table 3 describes two best practices identified during the interviews with the seven P/C insurers. To ensure anonymity, we have blind-coded these two insurers using coding that is different and unrelated to that used earlier in the document.

Elements of Insurer A's initiative that make it a best practice include:

- Use of business analytics — in this case, predictive analytics — to better understand which prospective clients would be best for the insurer
- Data results flowing to multiple stakeholders, which will create a stronger culture that is comfortable operating with this type of information

- Use of real-time processing only when needed (i.e., new business)
- Willingness to extend what it learns to other areas, such as bank client lists or marketing leads

Elements of Insurer B's initiative that make it a best practice include:

- Strengthening the firm's cultural commitment and comfort by providing the data to professional staff across the country and in the firm's other companies
- Providing access to the data through the firm's intranet
- Identifying lower levels of data granularity to support more detailed analysis

TABLE 3

Two Selected P/C Insurers' Business Analytics Best Practices

	Initiative Name	Objective	Data Sources	Abstract of Initiative	Next Steps
Insurer A	Underwriting Predictive Analytics	Use information for a new business quote or renewal to determine if firm wants the client and to provide a pricing indication.	Internal sources such as policy attributes and loss histories; undisclosed external sources.	Scoring is done on a real-time basis for new business and on a batch basis for renewals. Information is used to determine whether to automatically renew; to determine whether to allow the new business to flow through without underwriter review; to review renewals in an automatically prompted report that are pending in 120 days to provide guidance for the worst accounts; or to review trending of the quality of the book.	Review potential leads from various sources such as agency books with other carriers, bank client lists, and marketing leads.
Insurer B	Experience Data Marts	Provide detailed personal P/C and commercial P/C lines' experience data on an accident-year basis directly to managers and analysts across the country and to all companies for profitability analysis.	Transactional source systems.	Create online analytical processing (OLAP) cubes that can be accessed through the firm's intranet from across the country. The OLAP multidimensional cubes present accident-year experience data by line of business. Multiple attributes at low levels of granularity provide access to information never before available to the field.	Bring in new data elements as needed and maintain those as well as value changes as a result of source systems changing.

Source: Financial Insights, 2008

FUTURE OUTLOOK

Planned Business Analytics Applications

The P/C insurance companies interviewed have a range of new business analytical applications being planned for use in the next three years to better support underwriting, agencies, and internal staff:

- The underwriting analytical initiative is scoped to enable the insurer to better understand the external business climate in which it writes business. The clients of this analytics initiative are the insurer's agencies and field management staff. The insurer plans to use predictive analytics against a robust data set that includes information such as agency expertise, agency reach, lists of potential agencies, market penetration, and market quality to determine the firm's best opportunities for quality business. The initiative will integrate maps with the analytical results. The objective is to eventually tie these results into the premium planning process that would be wrapped into the enterprise financial models.

- The agency analytical initiative is an agency portal project with the objective of providing agents with the information they need in a central location. It will include premium, claims, customer experience, and benchmarking information that will be combined to provide agents with trending insights in all of these dimensions.

- The analytical initiative for the insurer's internal staff is a migration to a newer version of the business analytics software currently being used. But more than just a migration, the initiative will deliver new BI capabilities in a single, SOA-based integrated environment. The objective of this upgrade is to provide the users throughout the company with the capability to build their own exhibits based on their own requirements at the time they are doing the analysis. The insurer's internal staff will be able to access the application through the firm's corporate intranet.

All of these insurers are significantly moving beyond the passive review of periodic reports. Moreover, these firms are planning analytics initiatives that will further embed these capabilities into more of their value chains. If the initiatives meet their objectives, the corporate culture will become more comfortable with using business analytics.

CONCLUSION

P/C insurers still have a long way to go before they adapt sufficiently to the changing risk landscape. In Western Europe, insurers have to contend with a plethora of external issues such as a rapidly aging population, EU investigations into perceived lack of transparency of broker commissions, a new environmental liability directive, floods, and soon, Solvency II. In the information space, Western European insurers have to balance the EU's strict privacy regulations against the growing number of clients that prefer to conduct business over the Web.

North American insurers may not have to be concerned with Solvency II (yet), but there is a very real threat of an Optional Federal Charter in the United States, an insurance broker space that is rapidly consolidating, Canadian insurers looking for increased market share in the United States, and shifting demographics evidenced by a more ethnically diverse population accentuated by the rapidly impending retirement of baby boomers (i.e., people born between 1946 and 1964).

An adaptable insurer will have and will continually build on these elements:

- **Pervasive analytical culture.** This addresses the ultimately critical requirement of executive buy-in; acceptance of analytics by staff throughout all of the departments from areas with enterprisewide perspectives to areas with line-of-business perspectives; and the goal of obtaining the thrill of discovery when conducting analysis.

- **Data management.** Data is the lifeblood of insurance companies. From a business analytics perspective, insurers should be considered information factories generating and consuming information, pulling information from external sources, pushing information throughout all of the business value chains, and storing information in a variety of documents and data repositories.

  P/C insurers must continually determine what data sources to use, determine the viability of the data and clean the data as needed, ensure the data they are receiving or sending is as timely as needed, and define the data in consistent ways across the firm.

- **Linkages.** Business analytical applications should be driven by the firm's strategy. This element also addresses the need for management to agree both to goals and to the measures any PM application encompasses. Of course, there is a tacit assumption that the insurer actually has a strategy and that the strategy is well communicated and understood by everyone who works for the firm.

- **Role-based protocol.** P/C insurers should ensure that only the right people are accessing the data, analytical systems, or visualization capabilities they are authorized to use or see.

Are North American and Western European insurers as adaptable as they need to be to compete successfully in the changing risk landscape? Not by a long shot. Are these insurers on the path to adaptability? Yes, but before beginning on the path, insurers must bridge the chasm between wanting to use business analytics and resolving the concerns that stand in the way. The P/C executives stated that the important drivers are market facing and customer facing — supporting the firm's strategy, improving product management, and improving marketing capabilities. The key hurdles they face are both operational (i.e., data management) and cultural (i.e., lack of executive or internal customer support). The bridge to the path of adaptability is constructed by creating a strong, pervasive analytical culture and simultaneously determining the right portfolio of business analytics capabilities for the insurer.

The path to adaptability has many steps. The P/C insurers that are running the same set of reports over and over, albeit with refreshed data, are in trouble regardless of whether they have an enterprisewide or a line-of-business perspective. Insurers that conduct what-if analysis and also develop models to conduct predictive analysis to better support their agencies, clients, product development, or reinsurance financial management initiatives are clearly on the path to adaptability. Insurers will continue on the right path by bringing more departments and functions into the business analytics process.

However, rapid progress along the path to adaptability will mandate tying business analytics to the strategic goals and objectives of the corporation. Only insurers that link outcomes to set goals will have the requisite context that enables accurate measures for success and proper identification of areas requiring attention.

PARTING THOUGHTS

Business analytics is about supporting a firm's competitiveness and long-term profitability. To accomplish those goals, P/C insurers must create a culture that is comfortable with using analytics, develop the requisite skills to use analytics, identify which analytical software and services best fit their firm's needs, and as importantly, resolve all the data management issues. Obviously these are significant investments. The question for insurers is whether they can afford not to invest in their firm's ability to better adapt to ever-changing market conditions.

LEARN MORE

Related Research

- *Using Unstructured Data: Financial Services Firms Should Get Started* (Financial Insights #FIN212599, June 2008)
- *Visualizing Better Decisions Faster: Can You Really See The Answers?* (Financial Insights #FIN212873, June 2008)
- *Worldwide Business Analytics Software 2007 – 2011 Forecast Update and 2006 Vendor Shares: Business Intelligence, Data Warehousing, and Analytics Applications Forecasts Point to Continued Strength* (IDC #208699, September 2007)
- *Being in the Moment: Improving Insurers' Decision Making Through Real-Time Analytics* (Financial Insights #FIN203633, September 2006)