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## UNIFIED DATA

### Big Data & the Insurance Industry



**John Edwards**, Technology Journalist & Author  
4/8/2013  
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It's hard to think of any companies more data driven than insurance firms.

Just about every business decision an insurance company makes is based on information. To make sure that they aren't guessing wrong on things like rates, timeframes, and other policy terms, insurance firms maintain massive staffs of **actuaries**, experts whose sole job is to analyze the financial impact of risk and uncertainty.

Actuaries have long relied on mathematics, statistics, and financial theory to calculate probabilities and develop measures to minimize risk. Now, big data has arrived to give actuaries faster and easier access to deeper and wider pools of information.

#### Making the job easier

With the help of big data analytics, more precise predictions can be made on a greater number of topics. Simply put, big data analytics is making actuaries' jobs much easier, since the technology allows large amounts of data to be analyzed more quickly. Actuaries can now also incorporate data elements that were previously unavailable, or were considered irrelevant, into their risk assessments.

Virtually all insurance companies issuing all types of consumer and business policies are now aggressively adopting big data analytics for use in a variety of areas, particularly marketing and claims. Fueling the transition are falling hardware and software costs, the arrival of more powerful and standardized tools -- such as Hadoop -- a greater awareness among insurance executives of big data's benefits, and a growing desire to keep pace with industry leaders that are already using big data to gain a market edge.

#### Facing Priorities

Insurance companies face two major priorities every day: identifying the right customer for the right product at the right price at the lowest risk, and reducing claims costs and revenue leakage by providing efficient means of processing and detecting fraud sooner. Big data analytics help insurance providers address both of these challenges with greater vision.

By drawing insight from social media, market surveys, sales demographics, and many other data pools, big data analytics helps insurance companies more accurately identify consumer behaviors and expectations. This knowledge can then be used to fine-tune marketing programs to match potential customers to products designed to meet their unique needs.

Using visualization tools, automobile insurers, for example, can rapidly pinpoint issues that resonate with applicants in various age, income, and geographical groups. **Vehicle telematics** data, meanwhile, enables auto insurers to analyze the demographics and vehicle preferences of lower mileage and more conservative drivers, enabling enhanced product development and pricing.



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### Looking Ahead

In the years ahead, big data analytics is destined to play an even more prominent role for all types of insurers. The danger, however, is that actuaries may become too reliant on the technology and forgo their own judgments. That would be a big mistake, since big data predictive models aren't perfect. Human judgment will continue to be needed to interpret analytics and apply the results to real world situations that remain far too nuanced to be addressed by even the best big data analytical tools.

### Related posts:

- [Are You Being Judged Without Your Knowledge?](#)
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— John Edwards, *Technology Journalist*

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PAGE 1 / 2 > >>



MDMConsult, User Rank: Exabyte Executive  
6/6/2013 | 8:19:18 AM

#### Re: Miles to go...

Automotive companies have the opportunity to leverage new sources of Big Data to accelerate product design, improve vehicle performance and enhance the driver experience. Advanced analytics and new data preparation and enrichment capabilities, can yield new insights on some of the automotive industry's traditional business areas.

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Mithun Sridharan, User Rank: Blogger  
5/13/2013 | 8:24:41 PM

#### Re: Miles to go...

Hi Saul,

There's another angle to Big Data and automobiles beyond the insurance sector.

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With data that's aggregated, it is possible to predict the health of the automobile and suggest preventive maintenance. A well maintained automobile could attract mark downs in insurance premia.

Furthermore, with location based services, a retailer could also channel targeted offerings based on an automobile's location. For example, the location of an automobile near a shopping mall on a weekend has a high probability of a shopping transaction happening that day. With this correlation, the retailer could offer discounts by using both mobile data and data aggregated from the automobile.

To re-visit your point, an experienced driver could be incentivized to share some part of data. Why? Normalcy attracts little attention from insurance companies, while outliers a great deal. If good drivers don't opt in, they continue to pay higher premia, which benefits the insurance companies. This is one reason why those who decide not to 'opt in' might (or should) not benefit from reduced insurance premiums.

On the other hand, an experienced driver, who decides not to 'opt in' might not get to enjoy the benefits of such reductions. Following this logic, a good driver, experienced or not, would tend to opt in for a such deals.

Regardless, an interesting thought would be to understand why insurance companies would want to leverage Big Data. Over the course of time, insurance companies would lose out a large piece of cake through reduced premia they could collect. It's interesting to think of a business case why insurance companies should do so. Any thoughts on that? John?

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Saul Sherry, User Rank: Blogger  
4/10/2013 | 11:18:51 AM

#### Re: Miles to go...

And risk will keep redefining itself too, meaning we have to keep going back to examine if the models still apply/appear profitable.

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mharden, User Rank: Exabyte Executive  
4/9/2013 | 9:34:52 PM

**Re: Miles to go...**

@Saul - Yes, since the business of insurance is based on analyzing data to understand and evaluate risks I think there will always be a need to data scientists in the industry.

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Saul Sherry, User Rank: Blogger  
4/9/2013 | 8:04:21 AM

**Re: Miles to go...**

So where does this point in the future mharden? We're uncovering newer forms and bigger streams of data all the time - so these insurers will have a need to constantly redefine the boundaries of these sophisticated models. Is this why we are all nervous that we won't have enough data scientists?

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Saul Sherry, User Rank: Blogger  
4/9/2013 | 8:02:52 AM

**Re: Miles to go...**

Opening up new opportunities again legalcio? How about combining weather patterns etc with driver behaviour... could premiums be reduced if drivers pay when GPS tracked into an area with severe weather warnings?

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Saul Sherry, User Rank: Blogger  
4/9/2013 | 8:01:15 AM

**Re: Miles to go...**

Thanks for the link Justin, it reminded me of the figures you showed in that article, enough to make the head spin! Talk about a data stream, insurance driver analytics are spewing out some seriously huge data sets!

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Saul Sherry, User Rank: Blogger  
4/9/2013 | 7:59:40 AM

**Re: Miles to go...**

Mithun, I think those with the least to barter with are most likely to opt in at this stage... younger drivers, who suffer under huge premiums, will opt in because they will do anything to reduce costs (normally not a lot of money to play with at that age anyway).

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Whereas an experienced driver with few claims already has the insurers attention, so why compromise on privacy data?

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mharden, User Rank: Exabyte Executive  
4/8/2013 | 10:30:55 PM

**Re: Miles to go...**

I agree with legalcio. With the amount of data insurance companies have big data analytics can help analyze the sophisticated statistical models which insurance company use to determine individual loss exposures.

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legalcio, User Rank: Exabyte Executive  
4/8/2013 | 2:27:43 PM

**Re: Miles to go...**

Spot on @John, insurance companies are a captive audience for Big Data. I can see analysis on ancillary information being combined with the trove of data insurance companies already have. For example, weather patterns can be examined for hurricane and flood trends and applied to coverage areas.

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