Insurers' Reliance on Big Data: What Does It Mean for Insurance Regulation?

by Paul Tetrault

Abstract

While insurers' use of sizable quantities of information is nothing new, insurance regulators have shown increased interest in the ever-expanding use of new kinds and large quantities of data that may be referred to as big data. This article reviews areas of concern surrounding this topic, as noted by some regulators, while also citing potential consumer benefits and the concerns of industry representatives regarding how regulators may address insurers' increased use of information in more complex and sophisticated ways going forward.

Insurers' increasing use of new sources of large quantities of information—sometimes referred to as big data—may require insurance regulators to adopt entirely new thinking and approaches to insurance regulation, including the development of new regulatory standards and model laws and regulations to implement them. On the other hand, it may not. Perhaps, instead, long-standing regulatory and legal standards are more than adequate to protect consumers as insurers innovate while striving to offer the best products and services in a highly competitive and constantly evolving marketplace.

These two perspectives, contrary as they are, have been offered with equal vigor in presentations before the National Association of Insurance Commissioners (NAIC), which created a Big Data Working Group in 2016 and has spent more than two years exploring how insurers use new kinds of information in new ways and the extent to which such activities may warrant changes in how insurance regulators do what they do.

To understand the query presented for insurance regulators, it is necessary to consider both a historical perspective of insurers' use of data and the essential purposes of insurance regulation. Insurance has always been a data-driven enterprise, and the concept of insurers using large quantities of data is not new. For instance, the law of large numbers is one of the fundamental principles that describes how insurance works.

No line of demarcation indicates when insurers are engaged in traditional data use as opposed to use of big data. In fact, it has been observed on more than one occasion that there is no one accepted definition of "big data." And it is important to recognize that big data is not a term of art that is used in the insurance industry to specify a certain kind of activity or practice.

With these points in mind, it can nevertheless be acknowledged that insurers, like many other businesses, today use more data—and more kinds of data— than ever before, and they use it in new and constantly evolving ways. The issue at hand is what, if anything, does that mean for insurance regulation?

Big Data and Market Conduct Regulation

To answer that question, it is helpful to consider the purpose of insurance regulation, which is to ensure consumer protection in two ways: by making certain that insurers remain solvent so that they can pay the claims they are contractually obligated to pay, and by ensuring that insurers treat policyholders and claimants fairly and equitably. Regulatory concerns regarding insurers' use of big data concentrate mostly, and perhaps exclusively, on the second area of market conduct regulation as opposed to the first area of financial regulation. So the basic regulatory issue surrounding big data is whether insurer practices result in fair and appropriate treatment of consumers.

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Given that, it was not surprising that the NAIC, the national organization that develops legislative and regulatory standards in support of state insurance regulation, started getting involved in big data issues under the following charge adopted by the NAIC's Market Regulation and Consumer Affairs (D) Committee in 2016:

> "Explore potential issues of concern with insurers' use of big data for claims, marketing, underwriting and pricing. Explore potential opportunities for regulatory use of big data to improve efficiency and effectiveness of market regulation. If appropriate, make recommendations no later than the Fall National Meeting 2016 for 2017 charges for the D Committee to address specific regulatory issues or opportunities identified by the 2016 exploration."

That charge led to the creation of the NAIC Big Data Working Group early in 2016. Since then, the organization has struggled to determine exactly what it should or should not be doing relative to big data. [See "NAIC Big Data (Executive Committee) Working Group" for its 2018 charges.]

Repeatedly, proposals have been made for extremely expansive and aggressive charges and work plans based on the premise that sweeping regulatory changes are necessary. In response, the National Association of Mutual Insurance Companies (NAMIC) and other industry organizations have suggested that regulatory issues surrounding big data can be ably addressed by applying existing regulatory standards— such as the requirement that rates not be excessive, inadequate, or unfairly discriminatory.

Insurers' Use of Big Data: Potential Regulatory Implications

Apart from the question of the adequacy of regulatory standards, insurance regulation faces an indisputable challenge because of the speed of innovation and a resulting gap in awareness of what is taking place in the market. The objective of filling a knowledge gap among regulators was summed up well by Wisconsin Insurance Commissioner Ted Nickel, who served as 2017 NAIC president, when he said in a speech to insurance company executives, "We're curious, and we don't know. When regulators don't know what's going on, they get suspicious."

Nickel added, "The issue right now is that technology is moving so fast; you're plugging it in, you're building it, and you're using it, and there is this gap between what regulators understand and what's actually going on. And that causes some concern for us and also consumer representatives. We don't always know what's in your new black box of tools…and how you better rate and better underwrite…so that's a concern to us."

Recognizing that its members lacked sufficient awareness of what is happening in the marketplace relative to new uses of new kinds of data, the Big Data Working Group has heard presentations from speakers offering a variety of perspectives.

One such presenter, professor Lawrence Powell of the Alabama Center for Insurance Information and Research, offered a thorough consideration of insurers' use of big data, and the potential regulatory implications of such use, during the NAIC's 2017 Spring National Meeting in Denver, Colorado. Powell's presentation was based on a paper in which he found that no significant changes to the framework and functioning of insurance regulation are necessary to address insurance companies' increasing use of large quantities of data.

"The current regulatory system is well-suited to address issues related to big data," Powell concluded. "Given the potential for big data to benefit consumers and society through its use in insurance markets, and the potential for misplaced regulatory efforts to dampen this effect, new regulation is not warranted at this time. In addition, the market is very competitive, showing many participants, moderate profits, and very few complaints. Therefore, allocating additional resources to regulate big data would be neither appropriate nor efficient."

Powell's conclusion was based in part on potential benefits that would accrue to consumers as a result of insurers' increased use of big data. He listed the following benefits of big data applications:

- They can make insurance pricing more accurate. For example, using

> " ...the potential benefits of insurers' use of big data are considerable "

data from telematics devices, insurers can charge prices that reflect the risk of automobile crashes much more accurately than by using historical loss and demographic data.

- They can improve customer satisfaction. Big data applications can be used to intervene directly in customer interactions to prevent or solve problems and to streamline the claims process and maximize the speed and accuracy of claim payments.

- They can narrow the coverage gap by increasing availability of coverage in areas and exposures that are otherwise difficult to underwrite. Examples include catastrophe models, telematics, and satellite imagery.

- They are effective in identifying and mitigating insurance fraud, presenting opportunities to reduce the estimated $40 billion annual cost of it.

- They can improve insurers' operational efficiency. An example is prefilling insurance applications using public and proprietary data, making it easier for consumers to shop for insurance and bolstering competition.

Concerns and Future Outlook Regarding Regulation of Big Data

But while the potential benefits of insurers' use of big data are considerable, concerns persist among some regulators—again, largely involving questions about whether such use results in consumers being treated fairly and equitably. One concern cited by a few members of the NAIC's Big Data Working Group is that regulators cannot answer consumer inquiries regarding matters such as rating models used by insurance companies. Similarly, some have suggested that understanding complex models may be beyond the capacity of short-staffed insurance departments and that the NAIC may have a role to play in addressing this shortcoming.

To this end, another NAIC committee, the Casualty Actuarial and Statistical Task Force, has undertaken two significant actions. It has begun holding regular closed-door, regulator-only meetings to allow members to share information and discuss issues related to complex models

NAIC Big Data (Executive Committee) Working Group
2018 Charges

A. Review current regulatory frameworks used to oversee insurers' use of consumer and noninsurance data. If appropriate, recommend modifications to model laws and/or regulations regarding marketing, rating, underwriting and claims, regulation of data vendors and brokers, regulatory reporting requirements, and consumer disclosure requirements.

B. Propose a mechanism to provide resources and allow the states to share resources to facilitate their ability to conduct technical analysis of, and data collection related to, the review of complex models used by insurers for underwriting, rating, and claims. Such a mechanism shall respect and in no way limit the states' regulatory authority.

C. Assess data needs and required tools for state insurance regulators to appropriately monitor the marketplace and evaluate underwriting, rating, claims, and marketing practices. This assessment shall include gaining a better understanding of currently available data and tools, as well as recommendations for additional data and tools, as appropriate. Based on this assessment, propose a means to collect, house, and analyze needed data.

that have been filed in the states. And it has hosted training and education sessions to help state insurance department staff better understand the complex models that insurers are using in insurance processes.

More recently, the Big Data Working Group has taken an initial step toward expanding the role of the NAIC in the regulation of big data. During its spring national meeting in Milwaukee, Wisconsin, the working group approved a motion to ask the organization's Executive Committee to direct NAIC management to conduct research into the skills and resources needed to assist NAIC members in conducting reviews of predictive models and to make "appropriate recommendations" regarding what is found. This action followed discussion of a proposal raised within the working group to create a predictive analytics team of experts at the NAIC to which states could refer filed models that they believe exceed their ability to understand.

NAMIC and other industry groups voiced serious concerns with that proposal, asserting that it could place the NAIC in an unprecedented regulatory role. Both the activities of the Casualty Actuarial and Statistical Task Force and the course of action proposed by the Big Data Working Group raise a fundamental question about the role of the NAIC in the regulation of big data: whether it should perform regulatory tasks for state insurance departments or whether its role should be limited to supporting state insurance departments so that they can ably carry out regulatory functions.

Time will tell how that question, which has significant implications for the state regulatory system, is resolved. Likewise, the discussion about whether and how insurance regulation should address insurers' expanding use of data has only just begun. ◼

Endnotes

1. See, for instance, Gil Press, "12 Big Data Definitions: What's Yours?" *Forbes*, September 3, 2014, and "The Big Data Conundrum: How to Define It?" *MIT Technology Review*, October 3, 2013.

2. "State Insurance Regulation," National Association of Insurance Commissioners, 2011, www.naic.org/documents/topics_white_paper_hist_ins_reg.pdf (accessed April 24, 2018). The paper notes that "All regulatory functions will fall under either solvency regulation or market regulation to meet these two objectives."

3. Andrew G. Simpson, "Super Regional Carriers Urged to Educate 'Suspicious' Regulators on Big Data Use," *Insurance Journal*, July 24, 2017, www.insurancejournal.com/news/national/2017/07/24/458586.htm (accessed April 26, 2018).

4. Simpson, "Super Regional Carriers Urged to Educate 'Suspicious' Regulators on Big Data Use."

5. Lawrence Powell, "Big Data and Regulation in the Insurance Industry," April 14, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2951306 (accessed April 24, 2018).

6. Powell, p. 4.

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