



# Big Data and the Future Actuary Report Summary

Simplified Chinese (大数据与精算的未来报告摘要)





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## Big Data and the Future Actuary Report Summary

### (大数据与精算的未来报告摘要)

Access to big, non-traditional data has, is, and will affect every industry in the market, as well as usher in a few new ones. In insurance, access to big data means the relationship between insurers and their customers is increasingly complex and intimate. On the positive side, this encourages insurers to innovate and find ways to deliver value across the customer lifecycle. However, it also invites questions of privacy, transparency, and what constitutes taking data access ‘too far.’

对大型非传统数据的运用已经、正在且即将影响各行各业，并推动产生一些新的行业。在保险业中，使用大数据意味着保险公司与客户之间的关系正变得日益复杂和亲密。从积极的一面来看，这会鼓励保险公司进行创新并为客户持续创造价值。但同时，也引发了隐私、透明度，以及数据使用的尺度界限等问题。

#### 2.1 USING NON-TRADITIONAL DATA IN TRADITIONAL WAYS (以传统方式使用非传统数据)

There’s no shortage of ways that big data influences and encourages innovation in the more traditional insurance processes. New niche products can target small segments of the population for a fraction of the cost. AI can simplify and improve accuracy in underwriting. Drone footage can determine which properties are more at risk in a natural disaster zone. The possibilities across the broader industry are seemingly limitless.

在更传统的保险流程中，大数据可以在各个层面鼓励创新。新的利基产品可以做到用低廉的价格针对一小部分消费者。AI 可以简化承保流程并提高准确度。无人机录像可以判定受自然灾害风险更大的地区。大数据应用的可能性似乎是无限的。

Many forms of data that are not necessarily new to the insurance industry are changing. Whether that refers to the data’s complexity, accessibility, or the way it’s collected and analyzed completely depends on the data and the person/company collecting it. Data that will experience this kind of shift includes **demographic, financial, government, climate, medical, motor vehicle records, public records, and telematics.**

对于保险业的许多既有数据而言，形式正在发生变化。无论是数据的复杂性、可访问性，还是数据的收集和分析方式，完全取决于数据本身以及收集数据的人员以及公司。经历着这种转变的数据包括人口统计、财务、政府、气候、医疗、机动车记录、公共记录和远程信息处理。

The industry will also have access to some relatively new kinds of data, particularly epigenetics data and digital behavioral data. **Epigenetics data** refers to information pertaining to ‘cellular age.’ This can predict how long one is likely to live, whether or not they’re likely to avoid common diseases, etc. **Digital behavioral data** is possibly the most valuable source of big data to insurance and comes in the form of wearables, apps, and online platforms that constantly track behavior, habits, location, and health. This data can be used in everything from risk pricing, fraud prevention, underwriting products, and more.

与此同时，业界还将获得一些相对较新的数据，尤其是表观遗传学数据和数字化行为数据。**表观遗传学数据**是指与“细胞年龄”有关的信息。它可以预测一个人可能活多久，是否有可能避免常见疾病等。对于保险业而言，**数字化行为数据**则可能是最有价值的。这包括可穿戴设备、应用程序，以及不断记录用户行为、习惯、位置和健康状况的网络平台。这些数据可应用于风险定价、预防欺诈、承保等。

With access to big data comes great responsibility. Insurers should be especially wary of predictive algorithms that have the potential to inherit societal discriminatory prejudices through machine learning. While significant advancements have been made, there is no agreed upon way to ensure AI and machine learning operate free of any bias. It is illegal for insurers to discriminate on the basis of race, religion, or national origin in the underwriting, pricing, and claims processes, making integrating these new technologies tricky.

非传统大数据也同时给保险公司带来了巨大的责任。保险公司应该特别警惕某些通过机器学习而继承了带有社会歧视或偏见的预测算法。尽管此方面已有重大进展，但目前仍没有公认的方法来确保 AI 和机器学习在没有任何偏见的情况下运行。在承保、定价和理赔过程中基于种族、宗教或国籍进行歧视是非法的，这使得保险行业整合新技术变得非常棘手。

On the more positive side of this equation, access to these big data sources provides endless opportunities for insurers to meaningfully engage their customers. Companies placing the customer at the center of business decisions regularly outperform those that don’t, and the insurance industry has the tools to enable this. Insurers that recognize this potential and act on it can provide continuous value, helping customers live healthier, happier, and wealthier lives.

从积极的方面来看，大数据为保险公司提供了无尽的与客户互动的机会。以客户需求为中心的企业通常在竞争时处于上风，而保险行业如今拥有工具和技术来支持大数据的发展。意识到大数据的潜力并采取行动的保险公司可以不断创造价值，帮助客户过上更健康、幸福、富有的生活。

## 2.2 USING NON-TRADITIONAL DATA IN NON-TRADITIONAL WAYS (以非传统方式使用非传统数据)

Outside of using non-traditional data to improve and innovate long-standing industry practices and processes, there are plenty of new ways for actuaries and insurers to push traditional boundaries. At the center of this is the idea that the insurance industry is moving away from a ‘detect and repair’ industry towards a more proactive ‘predict and prevent.’ Here are a few ways in which the insurance industry is actively working towards this shift:

除了使用非传统数据来改善与创新既有的行业惯例和流程外，精算师和保险公司还可以利用许多新方式来突破传统界限。其中心思想是，保险业正经历从“发现和补救”至更主动的“预测和预防”模式的变革。保险业可通过以下几种方式积极致力于这一转变：

1. **Risk Management and Wellness Programs:** Perhaps the most intuitive way insurers can drive value for customers is risk management and wellness programs, which provide insights and incentives to help consumers improve their mental and physical well-being.
2. **Patient Management Programs for the Chronically Ill:** Partnerships between healthcare providers and insurers can develop patient management programs for customers suffering from chronic diseases.
3. **Value-Based Payment Models:** These next-generation payment contracts can directly link individual behavior with the management of chronic diseases, providing incentives for customers to improve their lives through lifestyle insights and suggestions.
4. **Pay-as-you-live and usage-based insurance:** These pricing solutions will benefit consumers through seamlessly interconnected insurance products, delivering continuous value through insights on health, wealth, and safety.
5. **Internet of things integration**
6. **Covering new risks**

1. **健康管理计划：**保险公司为客户创造价值的最直观的方法就是健康管理计划，它提供了专业指导和激励措施，可以使消费者的身心健康得到改善。
2. **慢性病患者管理计划：**医疗机构与保险公司可以合作为患有慢性疾病的客户制定管理计划。
3. **互惠式模型：**这种保险形式可以将客户行为与健康管理直接联系起来，通过日常指导和奖励来鼓励客户养成健康的生活方式。
4. **先使用后付费模式：**这种模式通过无缝衔接的保险产品为客户提供有形和无形的价值与保障。
5. **利用物联网互联互通**
6. **承保新的风险**

### 2.3 BECOMING AN ACTUARY OF THE FUTURE (精算师职业的未来)

Access to non-traditional, big data does more than shift the insurance industry, it changes what it means to be an actuary. The actuary of the future will be part mathematician, part data scientist, part digital strategist, part computer programmer, and part design thinker, integrating all these skills to make the most of new technologies and partnerships alike. New data sources will provide a wealth of both structured and unstructured data that will allow actuaries with the right programming skills to develop algorithms capable of efficiently working with massive datasets.

大数据不仅改变保险业，还改变了精算师职业的意义。未来的精算师将是数学家、数据科学家、数字战略家、程序员和设计思想家的结合体，精算师将整合所有这些技能以充分利用新技术和跨行业合作的成果。新的数据源将提供大量的结构化和非结构化数据，具有编程技能的精算师从而可以开发高效处理海量数据的算法。

More than anything, the actuaries of tomorrow will see their role shift towards the customer in ways it never has before. As the insurance industry becomes simultaneously more customer centric and proactive, products, programs, and services will reflect a more engaged customer base, ready to be engaged throughout the duration of their policies through meaningful, value-driven initiatives. Actuaries will be at the center of this shift.

与过去不同，未来的精算师会将客户视为导向。随着保险业更加积极主动地向“以客户为中心”转型，保险产品和项目将与客户在各个层面展开互动，全程以卓越服务为客户创造价值并提升体验。精算师正是推动这一变革的中坚力量。

请点击以下网址查阅完整的研究报告：

The full research report can be found here: <https://www.soa.org/resources/research-reports/2019/big-datafuture-actuary/>.

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## About The Society of Actuaries

With roots dating back to 1889, the [Society of Actuaries](#) (SOA) is the world's largest actuarial professional organization with more than 31,000 members. Through research and education, the SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal challenges. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

**Objectivity:** The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

**Quality:** The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and nonactuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

**Relevance:** The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

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