snowflake®

INSURANCE DATA TRENDS

How data and analytics continue to transform the insurance industry

EBOOK

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A RAPIDLY EVOLVING INSURANCE LANDSCAPE

Insurance companies that want to thrive in today's aggressive global business landscape need to leverage data and analytics better than ever before. Insurance providers must know more about the marketplace than their competitors, have the ability to share and leverage information internally and externally with simplicity and ease, and integrate analytics insights into every step of the decision-making lifecycle.

The good news is that insurance firms don't have to go it alone. Today, there are cloud data platforms that enable insurance organizations of any size to build foundational data and analytics capabilities so they can confidently and profitably move forward and prepare for whatever is next.

IDENTIFYING THE BIGGEST EXTERNAL CHALLENGES FOR INSURERS

The insurance industry as a whole has been impacted by enormous challenges on a global scale over the past few years—a global pandemic, inflation, and labor challenges, not to mention political and civil unrest—and they affect everything from fuel costs to global supply chains.

CLIMATE CHANGE

Climate-related issues pose a particular uncertainty for insurers. According to estimates from Swiss Re, the industry realized $35 billion in losses related to natural catastrophes in the first half of 2022, which is 22% above the 10-year average.[1]

Its research highlights an increasing frequency and severity of natural disasters, particularly in secondary perils such as wildfires, drought, hail, and flash floods.

In light of the scale of devastation caused by these secondary perils, it is clear that insurers must apply the same disciplined risk assessment as to primary perils such as earthquakes and hurricanes. Given the dynamic nature of these risks, data-driven models with long-term scenario analyses, stress tests, and reporting requirements for climate risk management will become essential tools in properly estimating the scale of potential losses.

ECONOMIC INFLATION

The property and casualty sector continues to be under significant performance constraints driven, in large part, by several factors putting pressure on loss costs.

In particular, economic inflation continues to have a significant impact on replacement and repair costs for both auto and property lines of insurance.

In auto, for example, prices for motor vehicle parts and equipment rose 22.8% between June 2021 and June 2022, while the cost of used cars and trucks rose 14%.[2]

At the same time, supply chain disruptions have led to delayed parts delivery, longer repair times, increased duration for vehicle rentals, etc. In this same period, the average duration of a rental vehicle associated with an auto claim increased from ~13.2 days to ~17.7 days due to time-to-repair challenges, further exacerbating the loss-cost impact of inflation.[3]

SOCIAL INFLATION

The term *social inflation* refers to the legislative and litigation-driven increases in the legal liabilities and claims costs of insurers above and beyond those driven by economic inflation. Social inflation continues to have a significant impact on the costs for insurance companies, particularly with respect to auto and liability product lines, as litigation duration and settlement costs have increased significantly over the last 10 years. For example, the median personal injury award settlement amount increased from $33,249 in 2010 to $125,366 in 2020, according to data from the Insurance Information Institute.[4]

POST-PANDEMIC CONSUMER BEHAVIOR

In addition to the impacts of economic and social inflation, auto lines are under significant pressure due to what appears to be a post-pandemic change in driving behavior, leading to increases in the frequency and severity of private passenger collisions and bodily injury claims.

As miles driven on U.S. highways dramatically decreased during the peak of the pandemic, the Insurance Institute of Highway Safety analyzed data from more than 500 Virginia Department of Transportation speed counters and compared the proportion of vehicles exceeding the speed limit by 10 mph from March through June 2020 with the same period in 2019.[5]

They noted a 50% greater likelihood that a driver was traveling 10 or more miles per hour above the speed limit in 2020 than in the same period in 2019.

As motorists returned to the roads and the number of miles driven approached pre-pandemic levels, it would appear that driving behavior has NOT returned to pre-pandemic norms. In a report issued by telematics service provider Cambridge Mobile Telematics, they noted that distracted driving behaviors have intensified at an alarming rate over the last two years.[6]

This riskier driving behavior is manifesting in increased claims severity, with private passenger collision severity increasing 36.5% in 2021 vs. the same period in 2020, and average bodily injury severity up 24.2% over that same period.[7]

REGULATORY PRESSURES

Insurers will also face increasing headwinds from ever-evolving regulations. In the United States, insurers need to comply with regulations such as the California Consumer Privacy Act (CCPA) and the California Privacy Rights Act (CPRA). Similar legislation is making its way through a large number of U.S. state legislatures, each with subtle differences, complicating insurers' responses. The E.U.'s General Data Protection Regulation (GDPR) similarly outlines various consumer data privacy rights.

Additionally, other types of regulatory reporting demands are soon to be law. International Financial Reporting Standards 17 (IFRS 17) will come into force next year. The act brings a single accounting model for insurance contracts across several major jurisdictions to provide more transparent access to information and data around industry profitability. The transition is expected to cost global insurers between $15 to $20 billion.[8]

In the U.S., the Financial Accounting Standards Board has proposed an accounting standards update designed to address issues with transparency and timeliness of life and retirement financials. Life and annuities providers will need to comply with the proposed long duration Targeted improvements (LTDI) standard, and global insurers will need to comply with both LTDI and IFRS. Each of these standards introduces new reporting complexities and will require more collaboration between finance and actuarial teams across processes and systems.

Preparing for these new regulations will cause insurers to implement controlling mechanisms and new business processes that will ultimately increase their general and administrative expenses.

COMPETETIVE CHALLENGES FROM INSURETECH STARTUPS

Yet another significant and somewhat unpredictable challenge emerging across the insurance landscape is from industry upstarts. Unburdened by legacy technology and infrastructure, these companies are able to offer customers an improved and fully digital experience. Through reliance on emerging technologies and third-party data providers, these new companies are pioneers in creating a streamlined and differentiated customer experience and better, more fluid relationships with their growing customer base.

Global investment in the InsurTech space set numerous records in 2021 according to Gallagher Re's inaugural Global InsurTech Report. Funds invested totaled $15.8 billion across 2,249 deals, accounting for the largest number of deals and more funding than was invested in 2019 and 2020 combined.[9]

As these companies gain traction and market share, business strategies for established players must incorporate the innovations these InsurTech players have brought to the market.

USING A MODERN DATA PLATFORM TO GAIN "INSIGHT ADVANTAGE"

This unprecedented set of market conditions requires insurers to react with informed speed. Firms that can react most quickly will have critical advantages over their competitors.

A significant component of an insurer's ability to meet these challenges is leveraging a modern data cloud platform designed to meet the evolving analytical needs of an organization and create a competitive "insight advantage." Insight advantage should be used to inform strategic considerations of the enterprise, evaluate opportunities for market expansion, drive increases in top-line growth, improve cost competitiveness, and positively impact customer experience.

Legacy data platforms—frequently built on premises—are hindered in many ways from delivering on the promise of their original business cases, let alone the expanded appetite for additional analytics-driven use cases. As insurance organizations look to solve "the data problem," they should consider the following characteristics of a modern data platform designed to support insight advantage.

PRACTICAL USE CASES FOR A MODERN DATA PLATFORM

The consumer/commercial business 360 relationship

Policy and product tend to be at the core of the data model that policy administration systems use to execute key business functions such as rating, quoting, binding, and renewing a policy. As a result, many organizations create their analytical data assets centered around policy or product at the expense of creating a true enterprise view of their customer. An enterprise view would integrate all of the products that a customer has with the organization, irrespective of the policy administration system they are stored in, and would capture and integrate all of the service interactions with the customer, irrespective of the channel of interaction. That would form the basis for a consumer or commercial business 360-degree view based on first-party data.

Given the vast availability of third-party data, that first-party representation of a customer would be augmented by a broad set of demographic data (in the case of individuals) or firmographic data (in the case of commercial businesses). This broad view of a consumer or commercial business would be further augmented by the integration of unstructured data, such as property aerial imagery or claim case notes.

This 360-degree view enables insights for risk selection, prospecting, underwriting, onboarding, servicing, claim triage, fraud detection, customer journey building, and more.

Enterprise data domains

Many large insurers have created overlapping or competing data assets and pipelines to support the independent operations of business segments and functional areas within an organization. But this creates cost inefficiencies due to the necessary management of overlapping assets as well as the data versioning challenges associated with multiple and, oftentimes, competing data repositories.

This has led insurers to consider a domain-centric data architecture, where the accountability for creating enterprise domains is decentralized and given to a team of experts in a particular domain (e.g., Account, Customer, Loss, Location, etc.). Modern cloud data platforms that support the separation of compute and storage facilitate the creation of enterprise domains that can be built once but are consumed by any functional department or business unit for their specific needs.

Several insurers are adopting data mesh, a set of domain-oriented, decentralized data ownership and architecture principles as an approach to creating enterprise data domains.

Third-party data availability

A modern data platform provides access to numerous third-party data sets to a variety of users across the enterprise and can simplify the connection of first-party data to third-party data. This allows data science and analytics organizations to quickly evaluate new third-party data attributes to determine if they create "lift" to any of their models. This permits quick economic assessment of model lift versus the cost of a new third-party subscription license, which helps sustain insight advantage.

Insurers leveraging this kind of data ecosystem would need robust metadata for third-party data, describing characteristics of the data set to analytics consumers. That metadata should include certain characteristics, such as attributes, valid values, and quality metrics, as well as unique attributes about the data set, such as usage rights restrictions, names of internal experts on the third-party data source, the business owner, and so on.

Data services and applications

With the growing collection of third-party data in cloud-based data marketplaces, interesting third-party data services will begin to emerge and should play an important role in a data ecosystem and in creating insight advantage.

For example, a Verisk study encompassing small commercial policy classifications over five years found that industry misclassification by SIC/NAICS code was 52%, leading to an estimated $6.5B in premium leakage in the first year.[10] Misclassification is rampant in the industry for numerous reasons, including unreliable data sources, simple human error in data entry, and faulty information received from agents, brokers, or property owners, all leading to the potential for significant premium leakage.

Given the enormity and variety of third-party data sources in data marketplaces, it would be easy to imagine a service designed to improve classification and reduce premium leakage or that could alert an insurer of changes in a business classification altering the risk profile of the business or identifying a cross-sell opportunity.

These kinds of services will become more prevalent with the growing availability of robust third-party data in data marketplaces.

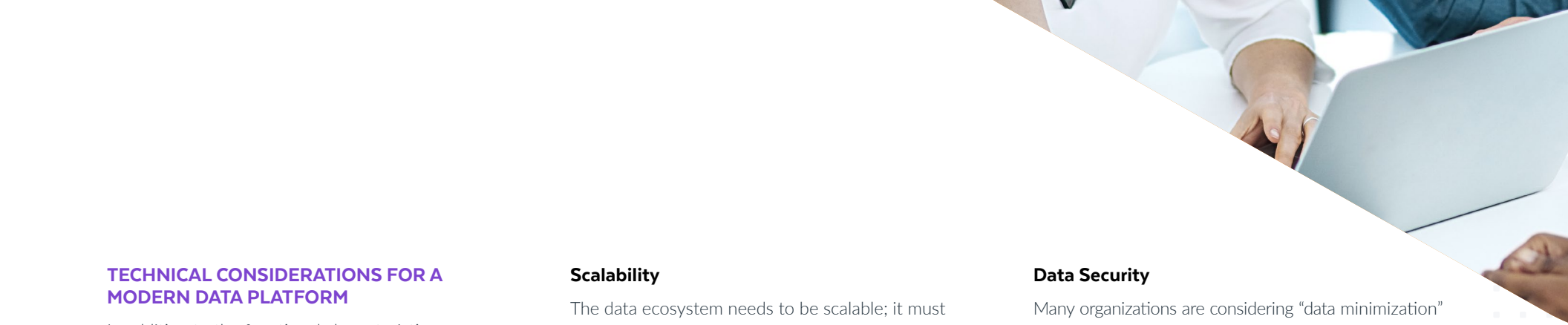
As more of these services proliferate, organizations will be able to leverage them and their analytic models along with first- and third-party data, assembling them into analytical applications that are quick to build and deploy, furthering their information advantage.

Sharing data with ease

Enterprises should be able to share data across multiple segments and functions—both internally and externally—with ease, efficiency, and security. This should not require resources to build and manage large amounts of data, nor should it require significant transformation, burdensome workloads, or scheduling and maintenance. And the process ought to be enabled without significant charges for accessing data or moving it between an insurer and its partners.

Ability to operationalize insights

Successful organizations must be able to operationalize insights derived from their data ecosystems and embed those insights into business processes to help underwriters, claim handlers, and others achieve better business outcomes and improve customer experience. An effective data ecosystem needs to simplify the process of injecting data and insights into the transactional systems at the point of interaction.



TECHNICAL CONSIDERATIONS FOR A MODERN DATA PLATFORM

In addition to the functional characteristics we have already covered, there are also technical characteristics of a contemporary ecosystem that the chief data officer (CDO) and/or the IT organization must consider.

Scalability

The data ecosystem needs to be scalable; it must meet exponential growth in demand for data and analytics across all business segments and functional areas of an enterprise. It must also support workload isolation to allow multiple workloads to be run concurrently without competing for the same set of limited machine resources.

Cost-effectiveness

The data ecosystem must also be cost-effective. In a cloud-based data platform that allows the separation of compute from storage, it is possible to run independent workloads against the same set of domain data. That provides complete cost transparency of each independent workload; an organization can evaluate the true net economic benefit of each analytic activity/workload within their organization. In an industry that is seeing exponential increases in demand for analytics, it is critical to evaluate the cost and value of each of these analytic activities to control costs and deliver ROI on analytic activities.

Data Security

Many organizations are considering "data minimization" strategies at the behest of their legal and compliance functions to mitigate the risks brought on by rapidly evolving data privacy regulation that varies from state to state. Insurers will also have to walk a fine line between supporting this legislation and meeting the needs of their analytics communities in maximizing the amount of data they can acquire and utilize. A contemporary data ecosystem should be able to support the broad and deep data needs of the analytics community while complying with evolving privacy legislation.

Resiliency

Finally, modern data platforms must support a high level of business resiliency. Data ecosystems are leveraged beyond the traditional data warehouse, business intelligence, and reporting workloads and become more integrated into critical business processes.

HOW INSURANCE COMPANIES CAN BENEFIT FROM DATA

There is a growing recognition that insurers can introduce data and analytics into virtually all of the important insurance functions and workflows, including product development, pricing and risk selection, underwriting, claims management, contact center optimization, and understanding and shaping customer journeys.

Following are some of the exciting ways that insurance companies can put data to work.

UNDERWRITING, PRICING, AND RISK SELECTION

For personal and small commercial lines, best-in-class insurers are connecting their first-party data, including IoT data, such as telematics and wearables, to a growing collection of third-party demographic and firmographic data to create a more comprehensive profile of a person or commercial business. These broad customer profiles are being used as inputs to machine learning models to better inform pricing and risk selection. Coupled with robotic process automation, organizations are driving toward a more automated, standardized, and objective underwriting process while improving pricing accuracy and loss ratios, cutting costs, and shortening quote-to-bind times.

In addition, these broad profiles can also be used as data prefill to streamline an organization's quote process, reducing the number of questions the agent or customer needs to respond to, and creating an exceptional customer experience.

CapSpecialty®

Keeping pace with demand for underwriting analytics and insights

CapSpecialty helps small and mid-sized businesses manage risk. To support underwriting and enable data-driven decision-making, CapSpecialty partnered with Snowflake to streamline how they ingest and analyze large amounts of premium, policy, and customer data. Previously, CapSpecialty's underwriting team spent time and resources performing manual tasks and managing data in spreadsheets that created operational inefficiencies. Re-architecting on Snowflake provided a single source of truth to power CapSpecialty's data analytics and underwriting workflows. Insurance premium visualizations delivered fresh insights to users within six minutes of the data becoming available—a 20x improvement over its legacy environment.

Learn More

CLAIMS TRIAGE

Advancements in AI, ML, and natural language processing (NLP) have enabled more sophisticated claim triage models. These can be designed with information culled from the vast availability of notes in claims files. Once built, these models can continuously evaluate new claim information as it becomes available after the first notice of loss. These triage models can identify low-cost claims to be auto-adjudicated and fast-tracked to resolution, allowing the insurer to allocate their resources more efficiently and lower claims costs.

CLAIMS OUTLIER DETECTION

Predictive models can attempt to identify less obvious high-cost claims early in the process, alerting claims professionals to the potential need to direct the claim to appropriately skilled resources. Identifying these hard-to-detect claims early in the process can help lower claim severity through early intervention.

FRAUD DETECTION

Insurance fraud detection is a challenging analytical problem given the relatively small ratio of known fraud cases in typical data samples. ML techniques can improve predictive accuracy, which means loss control units can be much more efficient at identifying fraud while also reducing false positives. There are advantages for any investigative unit as well;a contemporary ecosystem that leverages a marketplace 360 process for entity resolution and relationship detection can help expose connections between involved parties.

CUSTOMER EXPERIENCE

Many insurers consider each customer touchpoint—from visiting the website to calling an agent, or from quote submission through a claimant experience—as a set of discrete events. But customers experience those events as part of a journey. To improve the customer experience, insurers must create a data ecosystem that allows them to understand and analyze this customer journey. Once the data is connected in a way that helps illustrate these journeys, organizations can modify systems and processes to shape streamlined and exceptional customer journeys.

SECRETS TO SUCCESS

For insurance companies that want to stay competitive and meet the moment, managing internal data, leveraging external data, and developing advanced analytics are essential business practices but are not enough to build insight advantage. Moving forward, insurance organizations must also:

- Know more about the insurance industry marketplace than their competitors
- Know more about their customers (consumers or commercial businesses) than their competitors
- Be able to share and leverage information across internal and external organizational boundaries with simplicity and ease
- Manage volatile analytics workloads under increasing demand from all segments of their business
- Respond quickly to evolving and restrictive privacy legislation
- Integrate analytic insights into every point in the insurance decision-making lifecycle: pricing, risk selection, underwriting, claim interactions, and the full end-to-end customer experience

The good news is that insurance companies don't need to go it alone. The right solution can help you build the necessary foundational data and analytics capabilities so you can confidently—and profitably—meet the future head-on.

To learn more about how Snowflake can help, please visit **snowflake.com/financial-services**.

ABOUT SNOWFLAKE

Snowflake enables every organization to mobilize their data with Snowflake's Data Cloud. Customers use the Data Cloud to unite siloed data, discover and securely share data, and execute diverse analytic workloads. Wherever data or users live, Snowflake delivers a single data experience that spans multiple clouds and geographies. Thousands of customers across many industries, including 510 of the 2022 Forbes Global 2000 (G2K) as of July 31, 2022, use Snowflake Data Cloud to power their businesses. Learn more at snowflake.com.

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