



GLEAN

Achieve clarity and confidence in model assumptions

Actuarial modeling results are crucially dependent upon the input data and the assumptions that underpin the models. Small changes in longevity rates, lapse rates or different choices of economic scenario can produce very different results, even if the model remains the same. To get a clear picture of the risks facing an organization, it is essential have confidence in the assumptions used. Regulators across the globe emphasize the need for clearly documented and well understood assumptions, as evidenced by the stress testing requirements of Solvency II in Europe.

FIS™ Glean is an experience analysis tool that:

- Provides evidence to support and justify the choice of modeling basis.
- Identifies and investigates features observed within sets of experience data.
- Compares company experience against industry standards.
- Predicts the outcome for a given level of risk factors or risk factor proxies.

Analyze Past Experience

Glean performs four types of calculations. The first summarizes experience data into groups and sub-groups; for example, the number of policyholders aged between 40 and 50 at the valuation date, paying premiums of more than a specific amount per year.

The second calculates ratios within those groups; for example, the number of policyholders aged between 40 and 50 who surrendered their policies the year before the valuation date (the “event occurrence measure”) divided by the number of policyholders aged between 40 and 50 at the valuation date (the “exposure measure”), to give surrender rates by an attained age group.

The third extends the second by comparing the observed rates with another set of rates, typically a

table published by an industry or national organization; for example, your policyholders’ mortality rates compared to tables produced by such organization.

The fourth lets users define a relationship (strictly a generalized linear model) between the levels of various factors and the expected magnitude of a related event. Glean computes the mathematical dependency of the event on different levels of exposure from a set of observed values. An example of this is specifying that surrender rates vary by attained age band. Glean would report that either there is insufficient statistical evidence in your experience data to support such a hypothesis, or the best estimate of the parameter in the specified relationship formula is a particular value.

In this way, Glean can often help users identify relationships in their data that would not normally be detected with simple inspection.

Gain confidence in the results

Glean does not stop at just calculating the observed rates or parameter values. It also reports on the mean, standard deviation, skewness, confidence interval and chi-squared values, as appropriate, based on the evidence analyzed.

In addition to the one-way breakdown of lapse rates by age bands, Glean performs one-way breakdowns by many different analysis factors, such as age, sex, smoker status and policy year. In the interests of speed, users can also control the number of combinations of factors – two-way, three-way or all possible multi-dimensional analyses can be calculated, and readied for reporting. Alternatively, users can explicitly define the analysis required; for example, product group by age group, by sex, and by premium frequency.

Tight integration with Prophet

Glean is able to read the same tables read by Prophet, making it easier to compare observed experience against the valuation basis coded into your product models. Prophet's powerful yet intuitive Data Conversion System (DCS) performs the preparation of the input files for Glean, which reduces the need for training on a new data manipulation tool.

Wide application

Many areas of an insurance business can benefit from a robust experience analysis tool. Example include:

- **Life assurance** – analyzing mortality and lapse assumptions and inception rates, or performing recovery studies.
- **General insurance** – verifying claims frequency, surrender or renewal rates, and performing sensitivity analysis. Glean can also be used for multiplicative pricing models.
- **Pensions** – checking assumptions, but also analyzing retirement and withdrawal behaviors.
- **Marketing** – analyzing response and conversion rates, or sales channel performance.
- **Reinsurance** – analyzing experience at the treaty level and comparing it to the corresponding pricing basis.

Benefits of Glean

Like Prophet, Glean provides an optimal user experience, tailor made to empower you to do exactly what you want to do. Once set up, all the hard work of manipulating policy extracts and movements reports, calculating the observed rates, comparing them against industry standards, and fitting your generalized linear models are removed – allowing you to focus on the results.

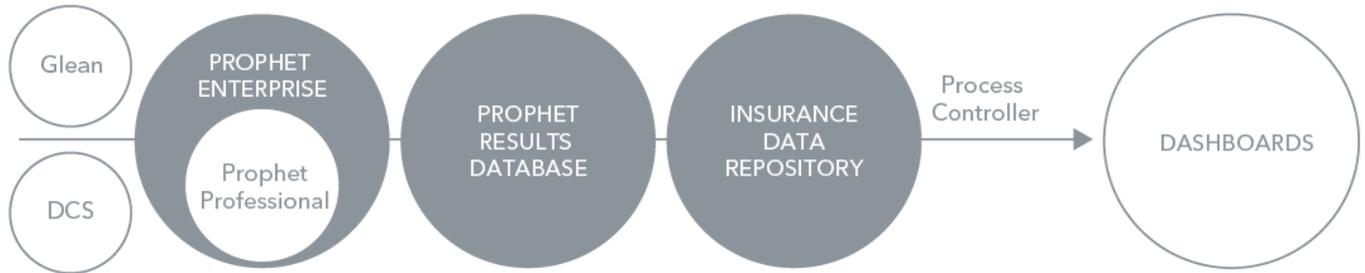
This analytic power of Glean provides you with:

- Evidence that supports choice of assumptions for review by senior management, auditors and regulators.
- Early identification of emerging trends, allowing actuaries to take immediate, appropriate action to manage risk and/or profitability.
- A better understanding of the business and how it is changing.
- The ability to identify discrepancies by comparing the business with an average – for example, underwriting selection.
- Higher-quality analyses and improved efficiency.

Part of the Prophet Data Management Platform

Glean is one component of the Prophet Data Management Platform, which links together FIS' risk management solutions. Using proven technology, the platform provides a complete solution for insurance risk measurement, risk management and corporate governance, enforcing control of insurers' risk data from source to report. Prophet Data Management Platform provides process management tools to help orchestrate and automate processes while maintaining an audit trail, giving executives the confidence they need to ensure their decisions are accurate, timely and communicated throughout the enterprise.

Prophet Data Management Platform



About FIS' Prophet Solution

FIS' Prophet solution is a leading enterprise-wide actuarial modeling system that helps insurance and financial services companies meet reporting responsibilities, improve risk management, and develop more profitable products faster. Prophet uses customizable actuarial libraries for all major product types, including regional variations. It provides the transparency, performance and control required by today's actuaries and risk managers through integrated financial modeling and data management capabilities. Prophet is used by more than 9,000 users at over 730 customer sites in more than 65 countries.

About FIS

Sitting at the intersection of technology and finance, FIS is focused on delivering fresh ideas and inventive solutions to help our customers adapt and thrive in an ever changing environment. With a blend of software solutions, cloud infrastructure, global service capabilities and deep domain expertise, FIS is capable of supporting virtually every type of financial organization, including the largest and most complex institutions in the world. For more information, please visit www.fisglobal.com