



# Guidewire Predictive Analytics: Commercial Property Underwriting

➤ **Improving Risk Selection, Discretionary Pricing, Retaining Profitable Customers, and Reducing Expenses**

## Creating a Smart Core System

Many insurers have invested in modern core systems that are flexible and robust to drive transformational change through their operations. Compared to prior legacy mainframe environments, the new systems enable employees to work more efficiently and enjoyably, bring focus to the customer relationship and improve the quality of individual interactions, and enforce process consistency and best practice. Such investments have positioned these insurers to pursue new markets and to leverage new technologies more rapidly.

Significant advancements made in predictive analytics for P&C insurance have now created a unique opportunity for insurers with modern core systems to embed analytic scores within the core decision-making workflow, thereby creating a Smart Core system. Successfully leveraging predictive analytics requires a few key ingredients:

- A business problem with a clearly defined target outcome
- A functional design to integrate analytic scores into the core system workflow
- A technical design that includes data acquisition, model building, and core system integration

However, becoming an insurance company that is driven by data and analytics requires much more than data and predictive models. It requires a solution that business users can understand and leverage easily so they can make fact-based decisions. You can maximize your technology investment, speed up implementation, and achieve faster ROI by using the Commercial Property Underwriting solution described in this document—a solution that integrates Guidewire PolicyCenter with Guidewire Predictive Analytics and its award-winning machine learning technology.

## Business Problem

Underwriters today are constantly challenged with making the right risk selection using a scientific data-based approach while confronting the pressures of pricing, retention, competition, and expense management. The process is cumbersome and distracting, with significant time wasted on low-value-add activities.

A Smart Core system helps insurers in the following ways:

- Improves policy submission and renewal outcomes by creating workflow efficiencies and reducing expenses by triaging submissions to the right underwriter with guidance on the most cost-effective inspection methods
- Enables better segmentation and pricing based on individual risk characteristics
- Maximizes customer retention through profiling attrition risk, forecasting customer lifetime value, and enabling service-tier segmentation for the most profitable customers

The result is a more scalable, efficient, and profitable underwriting operation.

## Functional Design

Commercial lines underwriters typically engage with an account at a point of decision—what terms and price to offer a new prospect, whether to accept a quote submitted by an agent or broker, or whether to change terms at renewal. Guidewire Predictive Analytics does not fundamentally change when and how underwriters make these decisions, but it does give them another source of insight and guidance. Whether an underwriter is evaluating a submission or renewal, the PolicyCenter wizard already includes a Risk Analysis page that provides information relevant to the underwriting decision. To existing tabs for underwriting issues, contingencies, and prior policies or losses, we add a new Predictive Analytics tab with the data illustrated in Figure 1.

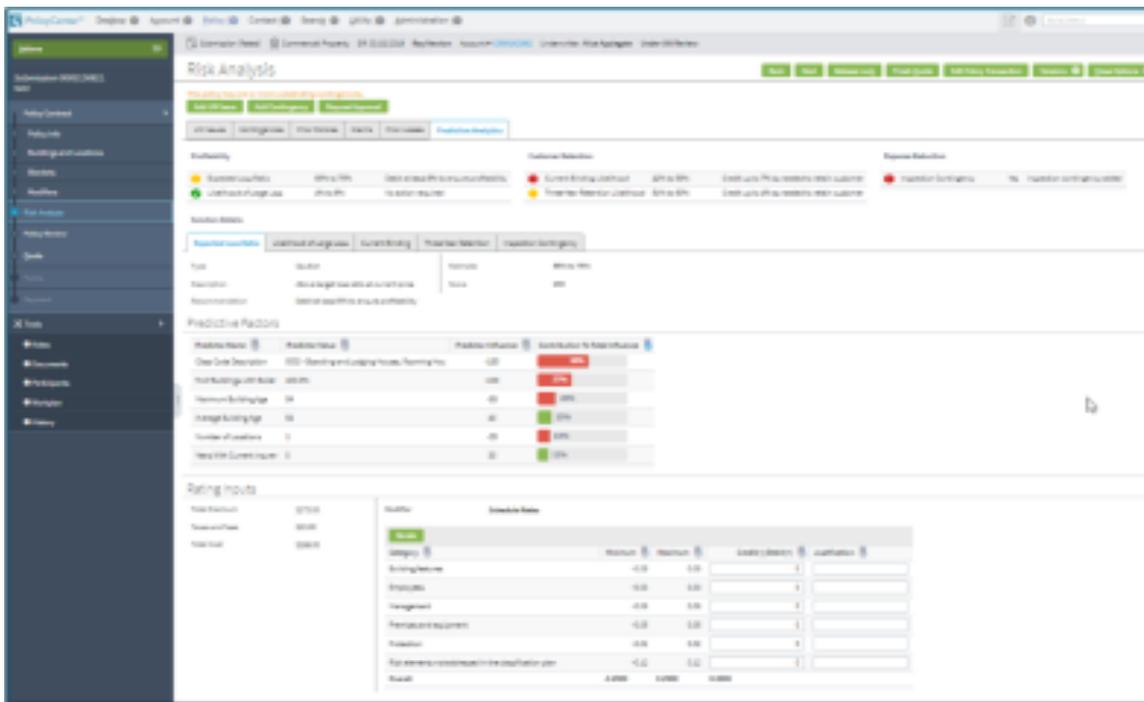


Figure 1: A new Predictive Analytics tab appears on the Risk Analysis page of the submission or renewal wizard in PolicyCenter.

This new tab provides three pieces of information for the underwriter—expected profitability, likelihood of acquiring/retaining the customer, and the expected benefit compared with the cost of additional information—each with a visual icon representing the level of concern. The underwriter can view results from each individual model on a separate subtab with further details such as type, estimate, score, description, recommendation, and the contributing predictive factors.

The solution utilizes standard PolicyCenter methods—issues (concerns that must be resolved) and contingencies (external conditions that must be met or actions that must be taken)—to guarantee appropriate action before accepting the risk. For example, the caution (yellow) flag for Expected Loss Ratio shown in Figure 1 could trigger an underwriting issue for the primary underwriter to resolve, whereas a warning (red) flag might require evaluation by a senior underwriter or manager. Similarly, the Inspection Contingency model in Figure 1 estimates that physical inspection of the applicant’s premises will have benefit for pricing accuracy and loss control that exceeds the cost of performing the inspection. A contingency is therefore created automatically so that an inspection must be completed before the policy is issued. Underwriters (or other users) are automatically notified of these issues or contingencies whenever PolicyCenter provides a quote (see Figure 2). For more information or to resolve the issues, the underwriter returns to the Risk Analysis page and navigates to the UW Issues tab or Contingencies tab.

The rating inputs enable the underwriter to make adjustments and see their effect on the model results in near-real time. These revisions will in-turn add or remove new issues and contingencies, requiring resolution prior to binding the submission.

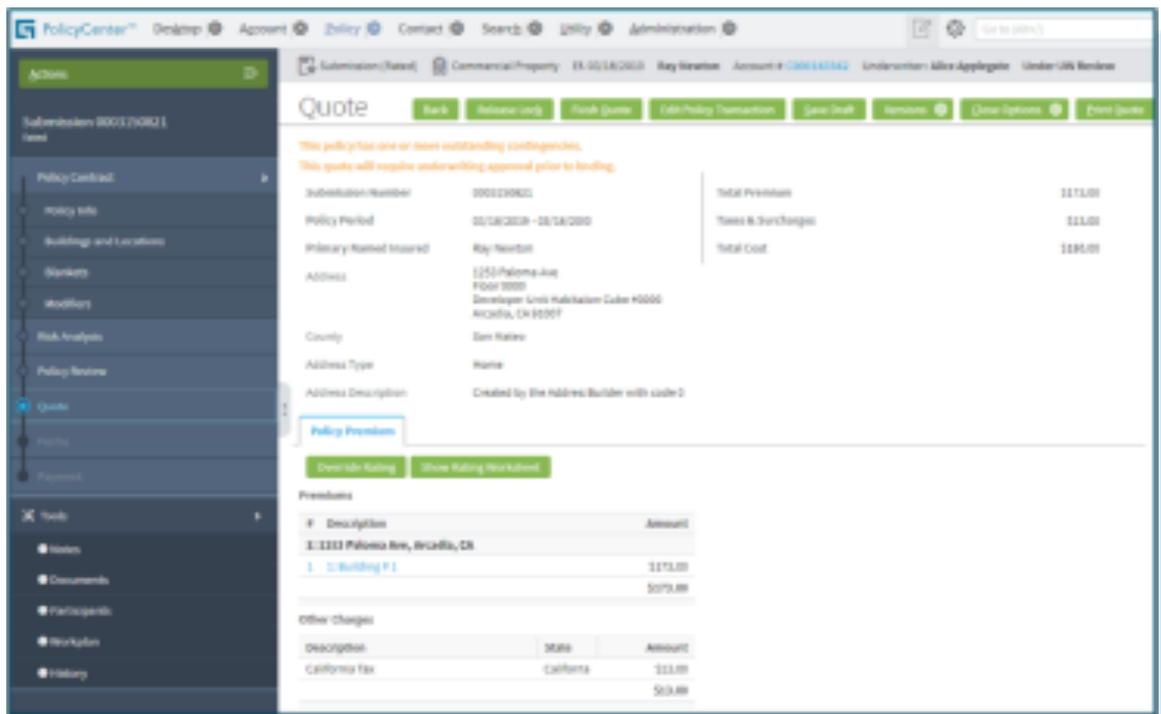


Figure 2: The Quote page highlights any underwriting issues or contingencies created automatically in response to predictive models.

An account overview screen is also included, and it provides a single page to display all predictive analytic model results from all of the policies on the account. This might include predictive modeling results from different policy types on the same account – ex. Workers Comp, Commercial Auto, and Commercial Property.

## Other Functional Considerations

In addition to the Commercial Property Underwriting solution's required fundamental features, insurers can consider supplementary features such as capturing the subjective and objective responses from underwriters for the actions taken. This data can then be used to understand user adoption, improve the calculation of success metrics, and improve modeling accuracy.

Executives, managers, and analysts can choose to be notified of the number and characteristics of submissions and renewals that have been flagged and the actions taken in response to the model scores. Predictive scores and warning levels can also be used as additional dimensions for filtering or slicing business intelligence reports on underwriting department performance in general and outcomes of flagged submissions in particular. Such categorization can add insight and diagnose problems by differentiating KPIs based on predictions and recommendations.

Unlike the ClaimCenter Solution Packs, this solution does not display the history of the scoring calls as this can get quite large as the user navigates around and, in most cases only the current state of the submission would be of interest to the underwriter. However, upon customers' request, Guidewire can easily add this history to another tab on the Risk Analysis screen.

## Technical Design

The functional solution described in the preceding section leverages Guidewire PolicyCenter for core operational workflow and Guidewire Predictive Analytics to build models and deploy them as real-time scores. The technical design must consider three key components—data acquisition and preparation, analysis and modeling, and core system integration.

### Data Acquisition and Preparation

Exact data requirements depend on the modeling targets chosen. An ideal data set should enable analysis and modeling at both coverage and policy levels and typically consists of three to five years of premium and loss information. Premium on-leveling, loss development, trending, and other standard actuarial functions are performed as needed.

### Analysis and Modelling

After data has been prepared, the insurer and Guidewire make selections regarding training vs. validation criteria, model granularity, and target. The best variables (low correlations, high signal, and low noise) are then selected to build and refine customized predictive models. The platform generates and compares a series of models with differing algorithm parameters and credibility thresholds; the winning models are selected based on a combination of model lift and stability.

It is crucial to consider the desired impact of the predictive models on the business process before integration with PolicyCenter. Guidewire can help insurers understand the likely number of issues or contingencies that will result from the chosen thresholds and also help to optimize these thresholds so that underwriters and managers can focus on the submissions where their expertise and intervention are most valuable.

### Integration with Guidewire PolicyCenter

To operationalize the model, Guidewire Predictive Analytics creates an API to score underwriting submissions. PolicyCenter then uses HTTPClient to call a REST service published in Amazon Web Services. Configuration tools define the scheduled times and/or triggering events that initiate these calls. Where necessary, UI screens are created or revised to display model results properly (see "Functional Design"). All processes are designed to safeguard PolicyCenter's performance.

## Solution Delivery and Value Realization

Leveraging Guidewire Predictive Analytics, the Commercial Property Underwriting solution can be delivered in a relatively short time period with the following high-level delivery phases:

- Inception workshop (1–2 days)
- Data acquisition and preparation, followed by model building (1–2 months)
- Core system integration and implementation (1–2 months)

Guidewire can provide customers with consulting services to handle each of these phases, typically requiring only a few hundred hours of work. Customers can also use Guidewire software products independently and self-sufficiently, leverage one of our implementation partners, or use any combination of approaches.

In addition, customers have the option to leverage Guidewire Professional Services to help identify key performance indicators (KPIs) to measure the business benefit and validate ROI. Because predictive models can grow outdated as external business conditions and internal claim processes continue to change, Guidewire can also provide a complete lifecycle service that includes an annual model refresh to review and optimize model performance and then promptly deploy the revised model into production.

Guidewire is the platform P&C insurers trust to engage, innovate, and grow efficiently. We combine digital, core, analytics, and AI to deliver our platform as a cloud service. More than 400 insurers, from new ventures to the largest and most complex in the world, run on Guidewire. For more information, contact us at [info@guidewire.com](mailto:info@guidewire.com).



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