



Mindtree

Welcome to possible

Improving risk exposure accuracy for a leading property and casualty insurer by 40%

A first-of-its-kind solution that helps accurately assess property risk and price catastrophe bonds, not in months – but weeks. Welcome to possible.

SUCCESS STORY

Client

A Fortune 500 insurer, with a leading property and casualty business

Industry

Insurance and financial services

Offering

Design, application development, consulting, data and analytics, Pega services

Abstract

The increase in catastrophe events, from hurricanes and floods to earthquakes and oil spills, is an area of concern for property and casualty (P&C) insurers. Inaccurate or delayed pricing of property risk for catastrophe (CAT) bonds has the potential to impact profitability, compliance and reputation – well beyond a quarter. Our client, a global leader in P&C insurance, wanted to even the odds.

Mindtree led with its consulting acumen and delivered a first-of-its-kind CAT modeling application by aggregating geo-locations and unique property information. This would fundamentally transform our client's capabilities in risk assessment and pricing for catastrophe insurance, from enabling an underwriting snapshot in just eight hours to improving risk exposure accuracy by 40%.

According to research, global insured catastrophe losses totaled approximately USD13B in the first half of 2013* alone.

*Source: 2014 Insurance Market Outlook, Wells Fargo

Our client placed three objectives before us, all centered on accuracy of information:

- Risk selection and active portfolio diversification to manage global and local exposure to potential catastrophes
- Reduce reinsurance costs
- Improve reporting to regulators and ratings agencies

Business need

Natural disasters, once thought of as infrequent, are now a cause for concern – owing to both increased occurrence and larger impact in a hyper-connected world.

The catastrophe risks of property insurance differ in each region. Insurers assess a property based on the risk in the property's area and alleviate some of the risks by issuing CAT bonds. Typically, insurers take six months after a catastrophe occurs to assess the complete exposure. Accurate pricing of CAT bonds with a timely view of risk exposure is imperative to cover losses in case of catastrophic events.

However, both accuracy and timeliness were difficult to achieve for our client – they were grappling with a system built using several different tools and technologies with multi-regional, multi-currency and localized support. Specifically, their challenges stemmed from three lacunas:

1. **Manual third-party collation of exposure information with hand-off and data re-entry** – As manual processes go, this made pricing a time consuming and expensive process.
2. **Lack of appropriate information, tools and methodologies** – Because centralized and organized exposure information was unavailable, risk officers often dealt with inaccurate exposure calculation. The lack of workflow tools and a scientific method to evaluate risks on insured to value (ITV) impacted premium pricing.
3. **Ineffective risk management strategies** – A single pricing model was being used, which led to incomplete, inaccurate information. The risk modeling was late, not easily available and regulatory compliance was difficult to achieve. Adding to the complexity was unavailability of high-resolution location exposure data, which made it difficult to leverage the complete capabilities of stochastic CAT models. Our client also faced difficulty in quantitative assessment and pricing of risks, leading to adverse selection. This meant they were not able to anticipate and prepare for losses from a catastrophic event.

Given the customer base of over 40 million people in more than 160 countries and jurisdictions, building the desired robust application for CAT modeling wasn't going to be easy. But Mindtree's decade-long relationship with the insurer and well-demonstrated innovative thinking in the property and casualty domain meant we were geared to answer the need.

Our solution

We used our deep insurance and risk management domain knowledge to conceptualize, develop and implement a first-of-its-kind risk assessment and CAT modeling application.

Putting in place an enterprise-wide view

Our consultants conducted comprehensive feasibility and product analysis, complemented by workshops to prioritize requirements from user groups around the world. Based on this, we implemented custom-designed workflows for varied needs. The requirements captured from different users and markets helped us envisage how the risk assessment application would work with other scenarios and solutions.

Our approach was threefold. First, put business needs before technology. Second, design the application to be as contextual and geography-relevant as possible. Third, make it future-ready.

To ensure agile development of the application, we leveraged the Mindtree right-sourcing approach and addressed all of our client's needs with a mix of onsite and offshore delivery solutions.

When location pinpoints risk, you need to think beyond zip codes

Traditionally, property insurance has been based on assigning common risk scores based on zip codes. This approach is fundamentally flawed, as not every property in a zip code has the same exposure to risk. Another flaw is the lack of property-specific information. For example, if a building houses an art collection in its basement, the pricing risk will be based on asset value and if it houses data centers, the pricing risk will be based on business downtime.

It was this real-world thinking that we embedded into our client's CAT modeling application. By doing so, we designed a unique application that underscores a fundamental shift in the way property risk is assessed in the insurance industry. The application we designed goes beyond zip codes by mapping risk to the actual geo-location of the property, and by overlaying this geo-location data with unique property information. These capabilities were delivered by:

1. **A smooth flow of exposure data implemented on Pega PRPC** – operationalized using a business process management solution, with the capability to capture, scrub and cleanse the exposure data
2. **Location data augmentation** – with out-of-the-box toolsets
3. **Validation and augmentation of exposure data** – through data quality tools capable of integrating with additional augmentation tools
4. **Geographic information system (GIS)-based visualization and reporting** – enabled by integrating multiple CAT modeling tools and reporting through the IBM WebSphere Enterprise Service Bus (ESB)
5. **A single source of truth for unique locations** – delivered through a master data management (MDM) framework around location data
6. **An integrated solution that bridges business and technology** – by providing a data analytics solution (DAS)

Designed to scale, ready for the future

Having designed various multi-region solutions for the insurance industry, we were acutely aware of the fact that the success of the CAT modeling application would be underpinned by its capability to scale for future needs. This manifested in an application foundation built on the principles of service-oriented architecture, which facilitates access to other functions like underwriting and enables future integration with other solutions. The architecture of the application also provisions for smooth data exchange among other related systems.

Another facet of the application that will deliver business value is the ability to configure workflows based on user privileges. This is especially useful for business users who model and price risk in different countries, as they need greater flexibility in triggering workflows based on operating models and regulations that are unique to their market.

Our solution goes well beyond reinsurance to deliver top-line benefits as our client can now price better and sell faster.

Business benefits

Technology benefits

With disparate systems combined into one application, data that drives the usage of CAT model analysis scenarios is streamlined. This facilitates on-demand and automated stochastic modeling to price individual risks and specific accumulation scenarios. The application has **improved process efficiency through standardization and automation**, reducing the time taken to produce an underwriting risk snapshot (less than eight hours, compared to one month of manual processing earlier).

Operational benefits

1. Along with a 40% improvement in risk exposure accuracy, our client now has access to enterprise-wide exposure accumulation information so business executives can create **more reliable risk transfer strategies and make informed business decisions**.
2. Our client can now **price better and sell faster**. By geo-coding property and mapping it to the risk that the property location carries, the CAT modeling application has helped our client transform their pricing for catastrophe exposure.
3. Predict risks of potential catastrophes and take remedial action, a capability that is a definitive competitive advantage.

Financial benefits

1. Improve profitability through an expected ROI of around 40% per year.
2. Reduce non-compliance in regulatory reporting to less than three per year from six to eight per year.
3. Lower reinsurance cost by over 5%.

About Mindtree

Mindtree [NSE: MINDTREE] delivers technology services and accelerates growth for Global 1000 companies by solving complex business challenges with breakthrough technical innovations. Mindtree specializes in e-commerce, mobility, cloud enablement, digital transformation, business intelligence, data analytics, testing, infrastructure, EAI and ERP solutions. We are among the fastest growing technology firms globally with more than 200 clients and offices in 14 countries.