
Centre for Operations Excellence

Quantifying, Benchmarking and Predicting Operational Risk for an International Shipping Corporation

Client Profile

The client is a world-leading provider of international crude oil and petroleum product transportation services, transporting more than 10 percent of the world's sea-borne oil. With offices in 12 countries, the client employs more than 4,200 seagoing and shore-based staff around the world. The company has earned a reputation for safety and excellence in providing transportation services to major oil companies, oil traders and government agencies worldwide.



Business Challenge

The client faced the challenge of identifying the latent causes for marine transportation accidents. It approached the Centre for Operations Excellence (COE) to conduct a risk analysis study, and to recommend appropriate tools to determine investment strategy for risk reduction and to monitor its risks.

Value Delivered

The COE team contributed to the client in the following:

1. Evaluated various factors considered to affect accident ratios and quantified the importance of each.
2. Gave suggestions on enhancing the overall data collection system
3. Evaluated the risk level for each vessel.
4. Created an investment decision tool to identify the most promising investment area(s).
5. Developed a continuous monitoring tool for displaying the company's operational risk in different dimensions.
6. Determined the indicators for predicting massive accidents

The COE Approach

The COE team conducted a preliminary statistical analysis on all available accident data and narrowed down to the most productive direction of the research that was in the client's best interest. It determined the proper data collection method for thorough analysis of accidents and their latent causes. Further statistical analyses were then performed, including Multiple Linear Regression, Poisson Regression and Probability based Risk Modeling. The team analyzed the relationship between investment and accident risk, and developed a powerful and easy-to-use tools for the client to monitor its risks continuously and to identify the investment areas for risk mitigation.