

Deep Water Oil Sequential Exploration Executive Summary

Problem

An oil company was considering the optimal strategy for exploring several geologically related sites for oil. Their initial strategy ignored this information, resulting in a negative NPV for the project. However, the company had partial information about the relationships between candidate wells, in the form of the probability that oil would be found in a particular well if it was found in a different location. A complex spreadsheet was built to model this problem, indicating that even the optimal drilling strategy was of marginal positive value.

Solution

Provisdom was able to replicate the spreadsheet results in about 2 hours, leveraging our advances in information theory. The model was then extended to add realism in the form of uncertainty in the future price of oil as well as in the total amount of oil in each well. This information was available to the company, but not used in the original analyses as it was deemed too difficult. The additional strategic flexibility significantly increased the project value, such that it would no longer be viewed as marginal.

Time Required: 3 hours

Tangible Increase in Shareholder Value: \$40M (original NPV was negative)