indeva
helping you make better decisions

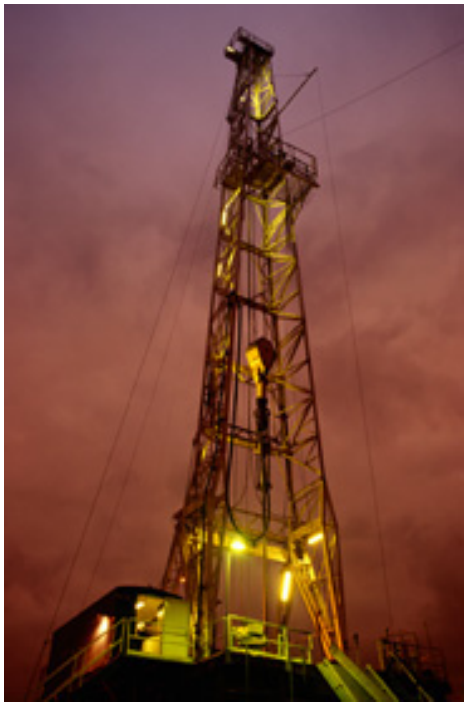
Enhanced Exploration Performance

Effective Decision Management Processes & Adaptive Strategies

The recent trend towards high oil prices has created pressure once again to drill higher risk prospects in more hostile and costly environments. To successfully deliver enhanced performance in this climate, companies must employ effective decision management processes and develop strategies for flexible and dynamic risk management. Indeva has helped oil and gas companies evaluate decision strategies for exploration and appraisal prospects and portfolios worldwide. Our work has included evaluation of individual prospects, complex, multi-prospect blocks and entire portfolios. We aim to not only help our clients make decisions about the current alternatives they are faced with, but also to develop adaptive strategies that are able to adjust to new events and information as exploration and appraisal activities progress.

Our approach is always tailored to the specific needs of the client and their situation. We provide a range of services to our clients to help them achieve enhanced exploration performance including construction of complex, multi-prospect models, facilitation of the implementation of project evaluation processes and optimisation of fiscal structure for license applications by evaluating a range of prospects across various PSC thresholds. Our methods stress the importance of understanding interactions and synergies, leveraging collective knowledge from experts in multiple disciplines, integrated modeling and uncertainty assessment. All of these factors are essential to deliver maximum value through flexible strategies that dynamically adapt as knowledge increases and the environment changes.

Our methods stress the importance of understanding interactions and synergies, leveraging collective knowledge from experts in multiple disciplines, integrated modelling and uncertainty assessment to maximise value through flexible risk management..



The case studies below describe two examples of how we have helped companies achieve enhanced exploration performance by helping them to implement consistent processes and develop adaptive plans.

CASE 1 – MULTI-PROSPECT ASSESSMENT:

A multi-national oil company required an effective model of a 6 prospect block, offshore West Africa with massive potential.

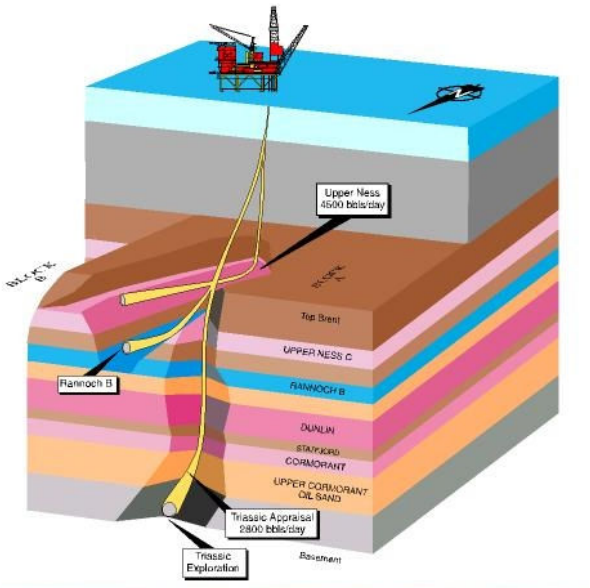
The issues surrounding this particular block included complex fiscal terms and a large aerial extent which made standard assessment techniques inappropriate. The selected development method was floating platform but due to the large aerial extent and uncertainty surrounding which prospects would be successful there was potentially a need for multiple vessels. In addition to the challenges introduced by the physical properties of the block, there was also a need to consider interacting geological risk including several dependent geological risk factors.

Requirements

The client's requirements from the model included determining the optimum order of drilling for the prospects and an accurate valuation of the block. It was also necessary to examine different potential development strategies given different discovery scenarios. A model that combined these considerations was required to determine the best committed drilling program including contingent well plans.

Approach

The approach we used was to develop a custom integrated model of the 6 prospect blocks including a development and cost model and logic for the decision process for exploration drilling, interacting dependent geological risks and uncertainty.



In this case a full probabilistic model was developed to determine the most effective strategy for the block including an initial committed well drilling program and an adaptive contingent well plan. Simulations were tested against policies and the model was reviewed and enhanced by technical experts throughout the process to determine the optimum policy.

Deliverables

The final deliverable to the client in this case included the model described above and a recommended strategy incorporating the initial exploration decision and decision logic for the subsequent policy to ensure appropriate response to the knowledge gained in the initial stages of appraisal.

CASE 2 – UNDERDEVELOPED BASIN ANALYSIS:

Indeva have worked with several different governments and oil companies in assessing exploration portfolios in underdeveloped basins. Such assessments need to integrate uncertain market conditions with models of existing prospects in order to examine the likelihood and timing of prospect development. Infrastructure development timing can be vitally important to decisions about whether to and when to drill existing prospects or bid on new blocks.

In many cases, understanding and developing the market and dealing with political issues can be more important than pursuing aggressive exploration strategies.

Requirements

The governments and oil companies in these cases require effective models that consider the whole basin from a variety of perspectives and incorporate uncertainty around market development and infrastructure.

Approach

Knowledge capture and expertise specific to the basin is essential in these cases. Effective basin development models can identify the most important variables for strategy in an area be it for government or the oil company. Our approach to underdeveloped basin analysis is to ensure the models we build are integrated and capture the full complexity of interacting developments to find the optimal solution under current conditions and the optimal policy for the future.

We have provided basin analysis for both gas and oil prospects in underdeveloped basins for the government of Newfoundland, the Nova Scotia Department of Natural Resources and several independent and multinational oil companies.

For more information on our consulting services and to discuss how we can help your company make better decisions, contact us at decisions@indeva.com