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**Real Options - A Tool for Maximizing the Value of PUD Development Programs**

Exploration and production companies make money from the cash flow margin generated by producing a PDP barrel. With increasing volatility of both price and costs, opportunities to maximize cash margins can only be exploited if the true value of PUD assets can be adequately ascertained.

The true value of a PUD is comprised of two basic components: Intrinsic Value - value that is defined by the current NPV of the project - and Time (Option) Value - created by the inherit volatility of underlying commodity price. The tools most commonly utilized to evaluate development drilling opportunities (i.e. NPV) typically neglect the value in waiting due to present value discounting. Comparing the results of Real Option analysis and NPV analysis on historical projects reveals that, in many instances, significant value has been forfeited by drilling prematurely during the lifecycle of field development. In one specific example, more than $180,000 (30%) of additional present value could have been captured from a single PUD location had drilling been deferred 6 months. When this analysis is extrapolated to a typical field with 50 - 100 PUD locations, the additional realized value becomes even more significant.

Real Option analysis is among the most advanced and sophisticated techniques currently available for extracting maximum value from PUD assets. Operating managers that recognize and utilize Real Option tools in the decision making process, closely monitor price and cost volatility, and are proactive in securing profits through market instruments (i.e. hedging) can increase both the efficiency and profitability of their assets.

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