

Technology changes supporting improved performance of E&P industry processes

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The E&P industry falls short of expected profit returns, despite promising the long-lived returns that an oil and gas asset can provide. This industry often has high levels of uncertainty and risk, which oil companies attempt to quantify before embarking on each individual E&P project. However, while the expected return has a typical hurdle rate of 18%, the actual return on investment is usually less than 7% (Brashear *et al.*, 2001). This discrepancy in predicting return has been attributed to systemic limitations in decision analysis processes and frequently used workflows (Brashear *et al.*, 2001), which result in repeated underestimation of risk and overestimation of the predicted production of the project.

Several papers published recently highlight the need for companies to follow well-designed decision analysis processes in association with clearly defined, multi-disciplinary analysis of technical uncertainties (Floris and Peersmann, 2000; Begg *et al.*, 2001). Integrating all of these processes without comprehensive supporting technology is not realistic given the performance and infrastructure limitations of conventional technology and applications. An enormous change is necessary.

Landmark consultants and developers have worked for five years, with more than 20 companies, to map the requirements of new technology that is required to improve uncertainty assessment and decision analysis. Pain points associated with common processes in upstream E&P were studied to provide a comprehensive review of the computing technology issues currently faced by oil companies (Lukats *et al.*, 2003). Landmark then embarked on a plan to create a new generation of technology that eases the pain points while providing for improved understanding of risk. This paper details a new asset-team focused technology system that Landmark has built to improve the value of E&P decision analysis processes.