Quantitative Risk Analysis in Oil and Gas Project using Monte Carlo Simulation

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Abstract

In today's oil and gas projects with their multiple interfaces, inherent risks and increased complexity; a thorough risk analysis is required to ensure delivering the project with the targeted objectives. However, unfortunately the common practice followed in managing projects always tends to use a qualitative method which does not reflect the real life. The objective of this paper is to demonstrate the added value of using quantitative approach for risk analysis (particularly through the use of Monte Carlo simulation) and apply it for an oil and gas project. The methodology discussed transforms a deterministic risk assessment model into a statistical model through the use of RiskyProject Professional™ software. The results of the model have predicted the causes for delay of the project, exceeding the total cost of the budget, identified the critical risks that would delay the project, and also the critical risks that will increase the project cost.

Keywords
Quantitative Risk Analysis, Monte Carlo Simulation, Oil and Gas Project