



Oil & Gas Modeling Using CrystalBall

2-Day Professional Development Workshop

East Asia Training & Consultancy Pte Ltd invites you to attend a two-day professional development workshop on “**Oil & Gas Modeling Using CrystalBall**”.

Attend a comprehensive two-day training program in Monte Carlo Simulation for Oil & Gas professionals, teaching basic and advanced model building using customized O & G examples and exercises.

Course Programme

Tired of bad earnings and expense forecasts?

**Want to know the probability of
achieving your plan?**

With so many risks and uncertainties associated with production forecasts, drilling costs, reservoir properties, operating expenses, and oil / gas prices, it is extraordinarily difficult to forecast earnings and cash flow for even the simplest prospects.

This two-day course will teach you how to model uncertainty and risk, identify key drivers, and then refine them using an advanced suite of professional modeling tools. The course shows how to evaluate individual prospects, and then how to combine them into a working portfolio optimized on your key business indicators.

Who should attend

This course is intended for Oil & Gas professionals involved in evaluating the economic potential of oil and gas wells, prospects, and portfolios. This audience includes asset team engineers and geoscientists charged with providing inputs and running corporate economic evaluations, as well as supervisors to mid-level management who want a hands-on understanding of modeling uncertainty associated with exploration and production operations.

The Benefits

By the end of this two-day course, you will have learned:

- 1) The Basics of Monte Carlo Simulation using Crystal Ball
- 2) Tornado Charting and Analysis for Discounted Cash Flow Analysis of a Drillable Prospect
- 3) Conversion of Point Estimate Prospect Model to Stochastic Simulation Model Accounting for Uncertainties Including:
 - Dry Hole Risk,
 - Production Uncertainties,
 - Expense Risks, and
 - Price Forecasting Uncertainties
- 4) Incorporating Historical Drilling and Completion Costs and other Historical Data into Simulation
- 5) Correlated / Dependent Assumptions and their Importance to Simulation
- 6) Value of Information Modeling: Shoot seismic or not?
- 7) Monte Carlo Simulation and Analysis of Results, including the Use Of Sensitivity analysis as a Project Management Tool
- 8) Time Series Forecasting
- 9) Portfolio Optimization using Multiple Business Requirements and Constraints Including
 - Markowitz Efficient Frontier and
 - Sharpe's Ratio

“Gain the skills necessary to make you a more confident, efficient, and professional decision-maker.”

The Prerequisites

Attendees for this course must have:

1. An introductory understanding of Excel
2. Competence with Windows operating systems

Experience with Crystal Ball is not a prerequisite, as beginning concepts and techniques are covered (or reviewed depending on the student's experience) in the first 1/2 day of the course.

Participants in Singapore may be eligible for Financial Sector Development Fund (FSDF) support on a case by case basis. Interested applicants should submit their applications to the FSDF Secretariat directly. More details on the FSDF can be found at "<http://www.mas.gov.sg>."

Fee & Registration

Fee includes course materials, data-sets, tutorials, lectures, luncheons, receptions and the opportunity to network with Oil & Gas professionals from various sectors across Asia.

As there are limited seats available, please sign up early.

Please email the completed official registration form to us at training@eastasiatc.com.sg. Confirmation will only be made upon full payment of course fee. Further instructions will be sent to confirmed participants.

The course is "hands-on". Participants are required to bring their own laptops.

Agenda

Day One

Basics of Monte Carlo Simulation Using Crystal Ball

Session 1: Morning (9:00 am to 10:00 am)

1. What is Monte Carlo Simulation, and How does it Differ from Traditional Analyses?
2. Converting Spreadsheet Models to Account for Uncertainty
 - i) Defining Assumptions using Distributions
 - ii) Fitting to Historical Data
 - iii) Correlating Dependent Assumptions
 - iv) Defining Forecasts and Using Them to Predict Outcomes

Break (10:00 am to 10:30am)

Session 2: Morning (10:30 am to 12:00 pm)

3. How to Define Parameters for Running Monte Carlo Simulation
4. Analysis of Monte Carlo Simulation Outcomes
 - i) Sensitivity Analysis
 - ii) Trend Charting
 - iii) Overlay Plots

Lunch (12:00 pm to 13:00 pm)

Session 3: Afternoon (13:00 pm to 15:00 pm)

1. Application of Crystal Ball to Variety of Financial / Business Models
2. Tornado Charting and Analysis for Discounted Cash Flow Analysis of a Drillable Prospect

Break (15:00 pm to 15:30 pm)

Session 4: Afternoon (15:30 pm to 17:00 pm)

3. Conversion of Point Estimate Prospect Model to Stochastic Simulation Model Accounting for Uncertainties Including:

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- i) Dry Hole Risk
 - ii) Production Uncertainties
 - iii) Expense Risks
 - iv) Price Forecasting Uncertainties

Day Two

Advanced Oil & Gas Modeling Using Crystal Ball

Session 1: Morning (9:00 am to 10:00 am)

1. Incorporating Historical Drilling and Completion Costs and other Historical Data Into Simulation
2. Correlated / Dependent Assumptions and their Importance to O&G Simulation

Break (10:00 am to 10:30am)

Session 2: Morning (10:30 am to 12:00 pm)

3. Value of Information Modeling: Shoot seismic or not?
4. Monte Carlo Simulation and Analysis of Drilling Results, including the Use Of Sensitivity analysis as a Project Management Tool
5. Forecasting Oil Prices using Time Series Forecasting: Crystal Ball Predictor

Lunch (12:00 pm to 13:00 pm)

Session 3: Afternoon (13:00 pm to 15:00 pm)

1. Drilling / Prospect Portfolio Optimization using Multiple Business Requirements and Constraints: Optquest
 - i) Markowitz Efficient Frontier
 - ii) Sharpe's Ratio
2. Bootstrapping Analysis: How Good Are Your Models?

Break (15:00 pm to 15:30 pm)

Session 4: Afternoon (15:30 pm to 17:00 pm)

3. 2D Simulation: Isolating Difficult or Unknown Assumptions
4. Capstone Exercise: Bringing it All together