

OVERVIEW

This workshop presents the key tools necessary for today's business analyst to model complex scenarios and optimize for the best outcomes. This hands-on training will present case studies, practical theory, and real-life examples on how to implement advanced decision modeling techniques as well as simulation and optimization into your models.

TARGET AUDIENCE

People who have previous experience with simulation and Excel modeling, including: Business Analysts, Managers, Executives and Consultants.

WORKSHOP CONTENT

MODULE 1 – OPTIMIZATION AND SCENARIO MODELING

Review of key concepts

- Simulation Concepts
- Statistics and Probability Math
- Excel Modeling Best Practices
- Simulation Models vs. Optimization Models

Simulation Optimization

- Introduction to Simulation- Optimization with Crystal Ball
- Everyday Optimization applications and examples
- How does Simulation Optimization Work

Portfolio Optimization Techniques : With the help of several integrated financial models, this workshop will provide financial analysts with a complete understanding of why, where and how to apply spreadsheet forecasting, simulation, real options and optimization within their analyses.

- *Project Portfolio Selection*: Use OptQuest to pick the best projects based on Organizational Budget Constraints
- *Portfolio & Resource Allocation Optimization*: Allocate resources or budgets among various investments to maximize NPV or ROI or minimize risk or expense.
- *Modeling Efficient Frontier* Analysis to optimize risk against benefit for projects and investments. (Portfolio Allocation)

Decision Tables to compare complex 2 dimensional problems

- *Workshop*: Inventory Options
- Creating 3D solution plots

MODULE 2 – ADVANCED DECISION MODELING TECHNIQUES

Decisions under uncertainty:

- Overview of Bayes' Theorem and its analytical applications
- Bayes applied to medical testing
- Workshop: How to improve profitability with additional information
- Bayes applied to Quality Control

Value of Information

- How much should you invest to collect additional information using Hubbard's VOI approach with a UNIFORM rule.
- Perfect versus imperfect information
- Using VOI to constrain or optimize portfolios

Decision Trees

- Overview of decisions trees
- Methodology for documenting strategic options using decision trees
- Conventional NPV versus Expanded NPV
- Workshop: Using Bayes Theorem and Decision Trees to decide whether to hire a reserves expert (oil and gas / mining) or not and the decision's impact on NPV

Real Options Analysis

- Overview or Real Options Theory
- Discounting Assets over time using lattices
- Workshop: Integrated DCF and valuation using a 2 Phased Sequential Real Option

BENEFITS

At the end of this 1 day workshop, participants will be able to: Make better and more informed decisions using scenario analysis and simulation

- Compare simulated projects to select the best alternative
- Use Bayesian techniques and leverage the value of information
- Discuss the use of Real Options and Expanded NPV's impact on project selection
- Quickly build effective optimization models or customize existing ones
- Pick and manage project more effectively
- Use a portfolio optimization model where the efficient allocation of resources is analyzed to improve the quality of your business decisions.

SUPPORTED PACKAGES

