

N510: Mitigating Bias, Blindness and Illusions in E&P Decision Making

Instructor(s): Creties Jenkins / Marc Bond

Format and Duration

Classroom - 2 Days

Virtual - 4 Sessions

Summary

Please note this course is offered in partnership with Rose and Associates. They will deliver and provide all logistics for the course.

Decisions in E&P ventures are affected by cognitive bias, perceptual blindness, and illusions which permeate our analyses, interpretations and decisions. This course examines the influence of these cognitive errors and presents techniques that can be used to mitigate their impact. The course includes awareness exercises, E&P examples, mitigation tools, and (most importantly) mitigation exercises to practice lessening the impact of these errors.

Learning Outcomes

Participants will learn to:

1. Recognize the various types of cognitive errors and be able to distinguish them.
2. Understand how these errors manifest themselves in our daily activities and assessments.
3. Reduce their reliance on intuition, instinct, and “rules-of-thumb” in analysis and decision-making.
4. Apply key steps to mitigate bias, blindness, and illusion in their data analysis, interpretations, and look-backs.
5. Focus on turning “unknown unknowns” into “known unknowns” so that they’re not surprised by the unexpected.
6. Generate lists of assumptions, contrary assumptions, and the impact of the differences between these in order to identify critical project uncertainties.
7. Appreciate that deterministic estimates for the same project made by multiple teams will result in a broad range of outcomes, demonstrating that individual teams need to keep their ranges wide.
8. Recognize motivational bias (a conscious bias) and how it can trigger their own unconscious biases.
9. Appreciate the importance of “following the process” and rewarding this along with the project outcome.
10. Identify, in various case studies, which cognitive errors contributed to erroneous interpretations and decisions.

Training Method

This is a classroom or virtual classroom featuring lectures, discussions, individual and team exercises, videos, and case studies. If desired, the course can be modified to focus more on exploration or production aspects, geoscience or engineering disciplines, and conventional or unconventional reservoirs.

Who Should Attend

Individuals working in geoscience, engineering, management, finance, administrative, or operational roles will all benefit from this course.

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Prerequisites and Linking Courses

There are no prerequisites for this course.

Course Content

Day 1

- Introduction
 - Key elements of rigorous project assessment, how we've performed as an industry, how cognitive errors distort our judgment and reduce our profitability
- Bias
 - Anchoring: Anchoring of an evaluation by attaching it to a reference value
 - Availability: Overestimating the likelihood of events that are more recent or memorable
 - Confirmation: Searching for and interpreting data in a way that confirms our beliefs
 - Framing: Reacting to a particular choice depending upon how it is presented
 - Information: Having a distorted assessment of information and its significance
 - Overconfidence: Overestimating the accuracy of one's own interpretation or ability
 - Motivational: Taking actions or decisions based on a desire for a particular outcome

Day 2

- Perceptual Blindness
 - The failure to see something hiding in plain sight because we're focused on a task
- Illusions
 - Illusion of Potential: The belief that an opportunity is much better or worse than it actually is
 - Illusion of Knowledge: Mistaking our sense of familiarity for real understanding
 - Illusion of Objectivity: Believing we're more open-minded, impartial, and less conforming than we really are
- Case Studies (a relevant subset will be chosen from the following)
 - Plio-Pleistocene Sandstone (Exploration Well)
 - Pliocene Sandstone (Exploration 'Drill or Drop')
 - Jurassic Sandstone (Exploration License Round)
 - Cambro-Ordovician Sandstone (Appraisal)
 - Cretaceous Shale (Appraisal)
 - Miocene Sandstone (Development)
 - Cambrian Sandstone (EOR Implementation)
- Mitigation Toolkit
 - Summary of mitigation techniques and steps
 - Laminated card summarizing key course learnings for handy future reference