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Peter Cunningham¹ (1) Decision Frameworks, L.L.C, Houston, TX

Valuing Information in Exploration and Exploitation

Deciding how much information to collect during operations in exploration and exploitation is difficult. Human nature suggests that the more information, the better to help decision-making. However, within tight budget constraints, this desire must balance the cost of information with its future worth.

This presentation describes a pragmatic 13-step approach to valuing information, and demonstrates its ease of use and applicability on two interesting exploration decision problems. The premise of the approach is that the value of information gathered is derived from its ability to facilitate changing a future decision, some of the time. This discussion will illustrate that how valuable information is depends heavily on the interplay of three key things:

- o the extent of the uncertainty involved,
- o the monetary impact of the future decision which may change, and
- o the accuracy of the information collected.

The first example presented will compare the value of a core to the value of logs to identify reservoir properties - the difference founded in the accuracy of the two information alternatives. The second example will value the information collected while drilling a shallow horizon, on the value of a deeper horizon - to facilitate the decision of when to drill to deeper, and allow for better pre-well planning.