

Development as the continuation of appraisal by other means

"War is the continuation of policy by other means."
- Carl von Clausewitz in "On War" (1832)

"All diplomacy is a continuation of war by other means."
- Chou En Lai (1954)

This paper is part of an overall programme to investigate how to distill the massive amounts of technical information that are generated in the analysis of any upstream petroleum asset into suitable formats for use in "complete" decision tree analyses of the design, management and value of that asset. A complete decision tree analyses future flexibility in response to all dynamic uncertain variables, including prices, throughout the life cycle of the asset.

The first part of the paper explains how and why we have set up this programme.

The second part of the paper begins an examination of a particular issue where we need to distill technical detail for use in a complete decision tree.

The upstream petroleum asset life cycle is usually divided into discrete phases. However, the actual situation is more fluid. For example, information arrives, and can be collected, throughout the life of the asset. In this sense, appraisal never stops, and, in principle, development and production activities should be tuned to take into account the value of the information that can be collected as a result of these activities.

We begin to explore this by examining, in an integrated fashion, the appraisal and development phases of the asset life cycle, using a model of an offshore oil-field development lease as an example.

We presume that drilling and facilities construction are the only two activities during this part of the life cycle.

Drilling can give information about the asset ("appraisal drilling") or provide production capability ("production drilling") or both.

Investment in production facilities begins at sanction, which can occur in any year until the end of the lease.

In our initial exploration of this issue, we have found situations where the option to have mixed drilling programmes, before and after sanction, adds value.