We describe an integrated framework for exploration risk management, driven by business reserves and production requirements. A structured approach to play fairway evaluation should underpin strategies to manage exploration risk. Sub-optimal decision-making results through failure to articulate geoscience risks. Managing exploration integrates technical evaluation and business needs.

We describe the exploration decision-making framework. The company’s reserves and production growth requirements should drive all exploration investment decisions. The exploration funnel (basin entry through to production) should be managed so that there are enough high quality opportunities to meet current and future demand.

Exploration is a risk business and the ability to predict outcomes at portfolio basis is fundamental to exploration success. We present examples of how a company’s risk and volume estimates should be continually calibrated against past performance. Management must believe in the cost/volume projections provided by the explorers!

Most companies start a portfolio review exercise by mapping current assets against business demands. It is vital to take a hard look at the existing portfolio and test its ability to deliver. If it can’t, it will need reshaping.

Geoscience understanding, and the ability to de-risk plays underpin the whole business of exploration. In most companies staff are the critical resource that needs rationing, not capital. We describe a structured approach to play fairway evaluation in which we use this as a tool for de-risking plays and planning investments in time and capital.

We have suggested that the business requirements be presented in terms of a production profile. This means that exploration outcomes should also be modelled in this way. The classic way of modelling an outcome of an exploration portfolio is through presenting the risked weighted sum of the production profiles arising out of the given drilling campaign. However we find that this does not adequately represent the likely outcomes. Most companies have some high volume wells in their portfolio (perhaps associated with high risk). Success in these would transform the shape of a company as happens in most successful exploration companies. We therefore prefer the scenario modelling approach in which we model success/failure in certain wells.

The story outlined above shows how a structured approach to geoscience enables informed business decision making.
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