

*The Norwegian Petroleum Directorate reports that projects with huge time and cost overruns also suffered from major shortcomings in the early design work*

# The Hidden Risks of Development Decisions



The pre-decision process is increasingly important as production risks and costs escalate for both large and small plays, says Hiren Sanghrajka of Upstream Advisors.

The commercial landscape for oil and gas production has never been straightforward. Early stage planning has always been of paramount importance but today it has become increasingly vital to get it right as a range of factors continually transform the risk picture.

A study into project execution and budget overruns, published last October by the Norwegian Petroleum Directorate (NPD), pinpointed insufficient planning at the front-end engineering and design (FEED) stage as one of the most critical failings of projects that had seen their schedules and budgets balloon.

All projects reviewed that had huge time and cost overruns, had major shortcomings in the early design

work, said NPD's Evaluation of Implemented Projects on the Norwegian Shelf report, referring to all engineering work before delivery of the proposed development option (PDO) and before procurement and construction starts.

## Flaws Propagate

Flaws and faults in the early planning will propagate further in the project. Time spent early in a project's life is crucial to the success of completing the project within time and cost estimate and according to quality standards, the report added.

So how and why does this happen?

One of the key reasons is pressure from shareholders. Many companies tend to rush into projects in

order to demonstrate value creation to their investors. This in turn puts heat on project managers to make rapid progress and shorten project cycles because their reputations are at stake.

Furthermore, it's easy to underestimate the number of preliminary decisions that have to be made during the evaluation of a project and, as a result, get lost in the 'decision jungle'. As soon as that happens, the risk of a poor outcome obviously increases.

## Pre-Decision Process

Effective pre-decision management is really about orchestration and leadership: knowing all the players, everything that is involved in making the best decision possible. It demands a properly structured pre-decision process, based on a lot of detailed experience.

There is always a way to make good early stage decisions, no matter how small or big you are, which fully takes into account all these developing risk factors and any others than may come down the track. At Upstream Advisors, we have collaborated with many clients in this field and have helped them through a management process that ensures that every option is considered in an equal and balanced way.

As advisors, we are driven by process, industry knowledge, understanding of current issues and perspective. What militates against these are things like gut

instinct, bias, hunches and overly compressed timetables, all which tend to precipitate bad decisions.

Even the most scrupulous companies with the most sophisticated processes and systems in place can benefit from having an external eye. At Upstream Advisors, we have heard the majors saying they could have done with an outside view on things earlier.

## Attention to Detail

Of course, attention to detail is key; it's so often the small things you don't think about that come back to bite you. But knowing what those small things might be comes with experience of many different early stage projects. Unfortunately, there is no one universal project tick list.

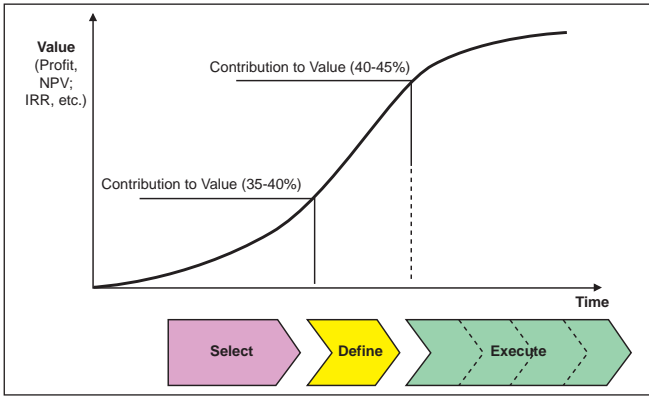
Given the sums involved in many major projects and the substantial knock-on costs and effects of a bad decision, an external audit can add significant risk management value for a relatively tiny cost.

There are many issues in play at the early stage decision-making stage and subsequently many instances of where things can go wrong.

The increasing complexity of exploration as frontiers are extended into ever more challenging environments and depths and a background of a chronic skills shortage and tight supply markets, are all very real factors in today's market.

The following summarises common examples of shortcomings arising from the early field development-planning phase:

- **Inadequate number of exploration and development wells to delineate the reserves.** This can lead to overly optimistic forecasts on reserves and production rates. Best practice is to drill several more wells before forecasting reserves, or perform thorough reservoir engineering studies and proceed with caution.
- **Little or no flowing well data, fluid sampling or analysis.** Fluid analysis provides vital information for activities such as reservoir management and facilities design. Well flow data is essential for assessing potential production rates, while fluid analysis is necessary to ascertain whether there is a need for special materials in order to combat corrosive fluid properties. Such materials can be costly.
- **Incomplete cost analysis for operating facilities, and failure to establish attractive commercial agreements on tariffs.** Operating facilities and the transportation of saleable products to the market often prove more costly than initial quotes from suppliers. Such investigations and agreements need to be concluded, and the fine print scrutinised before project sanction.
- **Failure to perform a full inspection of low-cost facilities being offered for lease or purchase.** This is more an issue for tier two or tier three players, and risks either curtailed production or high costs on conversion of facilities to suit the need of a particular field. Choose the facilities to suit the proposed development, not the other way round.
- **Lack of adequate resources of all types to execute the project.** This is often assumed to be manageable by award of turnkey contracts to large international contractors, or a belief that money can overcome shortcomings. This is not the case due to the high cost of market entry.



**Project value gained (or lost) in early definition work phases (source: Adept Knowledge Management)**

**Increase Efficiency**

These factors are pushing for new technology not only to tackle the new scenarios but to increase efficiency, particularly in production drilling, well completion, and floating production facilities with subsea wells. The implementation of this new technology has introduced significant new

uncertainties that are not adequately considered in the budgeting and execution of projects.

Throw in the changing face of regulations to the equation and early stage decision-making suddenly looks a lot more challenging than it was in years gone by.

This is especially true for the growing number of national oil companies and small and medium enterprises entering the scene, which, unlike super majors, simply don't have the experience or permanent in-house capabilities.

Unpicking a decision and building the case for pursuing another option should never be seen as anything other than a major 'win' saving an organisation from sometimes inestimable financial and reputational costs of going down the wrong road.

The truth is that in most cases, in order to speed up, you need to slow down. ■

Upstream Advisors is a niche, independent consultancy serving the exploration and productions sector of the oil and gas industry. [www.upstream-advisors.com](http://www.upstream-advisors.com)

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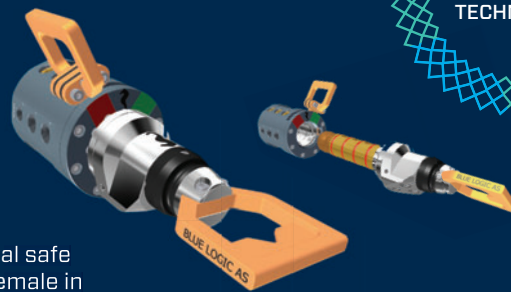


Hiren Sanghrajka, Director/Development Planning at Upstream Advisors, has

30 years' experience in oil and gas industry gained in Oil Companies as well as Services companies performing senior advisory roles. International oil companies advised include Shell, BP, ExxonMobil, BG, Total, Chevron; national oil companies advised include Korea National Oil Co., PetroVietnam and Petronas. Accomplished in development of large projects from early stage assessment to execution stage including strategic planning, project management, commercial and advanced technical management. Mr Sanghrajka has an acute awareness of cultural issues in an international business environment, with first-hand experience of developing and managing complex business relationships.

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