

# Late Life Field Development

## Case Study



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# Endeavor

# Late Life Field Development: Case Study

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### **Situation**

A shallow water asset off West Africa, already in production from multiple reservoirs with an FPSO and production platforms, needed a plan for its late-life development. Production was declining. Oil prices were falling. Declining production needed to be replaced and operating expense needed to be reduced to extend the life of the field. The partners were feuding and saw the potential solutions very differently. In short, they needed to develop and align behind a plan for the late life of the asset.

### **Alternatives Considered**

The partners commissioned a Concept Selection study for a late life field development plan. This started with a framing process to agree upon a structure for the problem. The key was to get the partners to voice, and listen to, each other's ideas. Some were interesting, but some were wild. The only way we could sort them and get the bad ones off the table was to carefully define each idea and evaluate it.

For opex reduction we considered several alternatives, e.g. demanning, centralizing power, and reducing the fixed opex for the FPSO (like a pipeline to a shore facility). Some of these might have made sense for a new field or with higher oil prices. When we analyzed these alternatives, all required more investment than the remaining production of the field could justify in a low oil-price environment and were therefore killed.

The plan further considered opportunities to increase production and add reserves, e.g. field extensions with new platforms and potential exploration plays. These potential new wells had significant risks of not being successful and required investment in new platforms and pipelines. With higher oil prices, some of these ideas would have been attractive, but with low oil prices they all required too much investment to be economical.

The one alternative for new wells and production that was economically viable involved just drilling more wells in existing reservoirs with existing platforms (infill drilling). This worked in a low oil price environment because the only investment needed was relatively modest drilling costs. As we started to define this alternative, we found there was significant potential for new production and reserves that could greatly extend asset life. The focus then shifted to identifying which wells to drill in existing reservoirs, how many, and in what sequence. We needed to define a clear plan to determine whether further development made economic sense.

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Not surprisingly, infill drilling was not anybody's leading alternative. By generating and evaluating a broad range of alternatives, we avoided failure (none of the original favored alternatives were economically viable) and found a plan that made economic sense even with low oil prices.

## Process

Endeavor Management supported the Concept Selection study by providing Framing and Decision Analysis (economic analysis) support plus facilitation of contentious partner dynamics. Having a defined process and skilled facilitation enabled the feuding partners to work through their problem constructively.

We encouraged them to hear out even seemingly wild ideas from partners and help to critique and improve them, thus better defining them for fair evaluation. The key was that they did not need to agree with the ideas, but just be willing to work them and then accept the outcome of the economic analysis. By getting everyone's proposals into the process and fairly evaluated, the partners could eliminate bad ideas and align on promising ideas, getting us past the feuding and non-productive bickering to reach alignment.

## Solution

The key contribution in Framing was to help partners generate and evaluate a broad range of alternative approaches under uncertainty. Once most alternatives failed to be economic in a low oil-price environment, we were left with a set of alternatives around how best to drill more infill wells. These alternatives included different drilling sequences, whether and when to drill pilot wells, pace of drilling, and which potential wells to not include. Major uncertainties beyond oil price included individual well performance, learning during drilling, and particularly the learning value of certain pilot wells.

We learned which wells contributed positive economic value, that the pilot wells needed to be drilled early to have their learning reduce dry-hole risks going forward, that sequencing wells based on well dependencies was critical to enable learnings that would optimize the drilling program, and that as rapid a drilling pace as feasible, maximized economic value.

## Value & Results

Ultimately, all partners aligned around a common and very profitable field development plan focused on drilling more wells. They stopped arguing about the failed ideas.

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The Framing process and Decision Analysis style economic model provided a common process to surface and define feuding partner views and resolve disputes based on facts. The Endeavor facilitation maintained a constructive dialogue and kept the process moving forward.

The resulting field development plan created large economic value, generated substantial new reserves, maintained production at high levels, and greatly extended field life despite low oil prices. It was a clear win despite low oil prices because it generated lots of new production and revenue with only relatively modest drilling costs. All partners accepted the results as their plan forward.

## Key Learnings and Take Aways

### Key Learnings:

- The only investment that made sense with low oil prices was one that required little investment for increased production – just the cost of drilling the wells.
- Drill wells rapidly enough to maintain production and revenue at high levels without new well investment exceeding cash flow or production capacity.
- Exploiting the well performance and pilot well uncertainties was critical for success.

### Take Aways:

- Decision Analysis is well suited for major decisions under uncertainty. Use it!
- Having a well-defined process can help a poorly functioning team experiencing conflict work constructively through a project.
- A skilled facilitator can greatly enhance success.
- An alternatives generation process that considers a broad range of alternatives, including participant favorites, which get refined and well described during the process, enables a fact-based evaluation. This is critical to getting bad ideas killed and reaching alignment around good ideas.
- Exploiting key uncertainties, designing a solution around minimizing downsides and maximizing upsides, was critical to generating economic value.

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## About Endeavor Management

Endeavor Management is a management consulting firm that leads clients to achieve real value from their strategic transformational initiatives. We serve as a catalyst by providing the energy to maintain the dual perspective of running the business while changing the business through the application of key leadership principles and business strategy.

In 2012, Gelb Consulting became an Endeavor Management Company. Our combined experience (Gelb founded in 1965) offers clients unique capabilities to focus their strategic initiatives with a thorough understanding of customer needs to drive marketing strategies, build trusted brands, deliver exceptional customer experiences and launch new products. Our experienced consultants and analysts use advanced marketing research techniques to identify customer needs and spot high potential market opportunities.

The firm's 40 year heritage has produced a substantial portfolio of proven methodologies, enabling Endeavor consultants to deliver top-tier transformational strategies, operational excellence, organizational change management, leadership development and decision support. Endeavor's deep operational insight and broad industry experience enables our team to quickly understand the dynamics of client companies and markets.

Endeavor strives to collaborate effectively at all levels of the client organization to deliver targeted outcomes and achieve real results. Our collaborative approach also enables clients to build capabilities within their own organizations to sustain enduring relationships.