Sliding Oil Prices: Predicament or Prospect?

Given the steep plunge in crude oil prices and resulting cash crunch, now is the perfect time for oil and gas companies to revisit their value tree and synchronize business and IT strategies.

**Executive Summary**

Crude oil prices have slid over 50% in the last year (see Figure 1), leading to gloom and doom across the energy industry, particularly in the upstream segment. While, most stand-alone upstream operators and service providers focus on their operational costs to deal with plunging oil prices, integrated oil companies tend to look at the downstream value chain to offset the decline in profitability in the upstream segment.

Upstream companies are scrambling to adapt to the fluid situation by applying conventional cost-cutting methods, such as layoffs and deferring capital spending to address the cash inflow squeeze. While many see this as a “crisis,” we see an opportunity for oil and gas companies to invigorate their business by realigning their priorities.

This white paper lays out what the industry can do to not only survive the current conditions but also take advantage of future changes.

**The Decline of Crude Oil Prices**

![Figure 1: CLJ15 - Crude Oil WTI (NY MEX)](image)

*Source: NASDAQ*

**A Blueprint for Change**

In our view, a “return to the basics” approach is the best way to combat the crunch on cash inflows. We suggest that upstream companies revisit their “value tree” to identify areas in which tweaks can lead to performance improvements (see Figure 2, next page).
The value tree analysis will help reinforce areas where costs can be more easily avoided; this can be computed by comparing target value with actual expenditures against each of the corporate KPIs, and then comparing corporate performance with the industry benchmarks relevant to each of these standards to ascertain which problem areas to focus on.

For example, take the case of maintenance expense, which is a key component in upstream operating costs. In the current situation, upstream players look to pass on a portion of the maintenance costs to oil field services companies that are involved in drilling out the product. By closely scrutinizing the cost drivers related to maintenance activities, upstream players can apportion the cost to services companies. Additionally, this approach provides actionable insight to formulate specific cost-centric strategies, in cases where costs are not in line with the established standards.

From there, we suggest the following:

- **Re-prioritize the existing project portfolio.** Existing projects were likely initiated at a time when oil prices were strong, allowing for the luxury of pursuing a spate of operational improvement initiatives. Amid truncated cash flows, it is not uncommon for companies to pause all ongoing initiatives in order to cut costs. While this parochial approach saves money, it can endanger and compromise operational safety. Hence, a more structural approach needs to be taken, meaning that projects should be evaluated using need-of-the-hour critical criteria without losing sight of strategic benefits at a holistic level.

For oil and gas companies, safety in operations and regulatory compliance are two vital operational cornerstones. Since the 2010 British Petroleum Gulf oil spill, oil companies have spent an inordinate amount of time and energy setting up systems and procedures to ensure zero-tolerance when it comes to ensuring operational safety against the backdrop of stricter regulatory requirements. Therefore, it is prudent to evaluate all project initiatives using safety and regulatory compliance as prime factors, while relegating cost-savings to a supplementary factor.

- **Pursue low-cost, quick-win initiatives on IT segments.** Projects that can save significant resource costs but do not require a major effort to implement should be prioritized. For example, swiftly implementing a workflow for an approval process in an upstream environment typically saves a substantial amount of time and cost because such approvals must flow through a plethora of production and operations groups, such as drilling, maintenance, etc.

- **Implement business process optimization to eliminate redundant activities, thereby saving money and resources.** It is an ideal...
time for the business to examine its overall business processes and their relevance to running the business. Agile organizations continually optimize their processes to minimize costs in line with the changing external environment. For example, BP continuously reviews its business processes to ensure their relevance to market conditions. Hence, a cash flow crunch is possibly the best time to evaluate key business enablers such as procurement procedures. Stricter control points can then be enabled in the purchasing processes to lower costs.

- **Effectively manage operating costs by establishing a single source of the truth for information.** In the operational environments of oil and gas companies, especially upstream operations, numerous service providers – such as seismic services, drilling services, site preparation services, completion and fracturing services, EPCs, pipeline and storage services, etc. – are key players in the value chain. Therefore, companies must put in place a robust data governance model, particularly for processes that affect operational cost performance, to contend with constricted cash inflows.

- **Investigate IT and the cloud for mundane and less critical processes to eliminate unnecessary business process management (BPM) costs.** According to a study by SAP, about 20% of a company’s business processes provide competitive advantage. The rest are standard or non-differentiating processes when compared with other industry players. It therefore makes sense for companies to closely monitor business-critical processes and outsource standard processes to third-parties. It is a better option to manage these processes through the cloud so that on-premises cost can be significantly reduced.

- **Categorize supply chain spending to formulate a category strategy for sourcing of critical materials.** Oil companies – especially services companies, which bear the brunt of cost passed over from upstream companies – are moving to micro-level, category-specific strategies to enable better inventory controls. This will vastly help with cutting costs on materials handling, while tightly controlling inventory management (see Figure 4, next page).

**Transform and Perform**

![Diagram showing percentage of standard and differentiating processes](image-url)

Source: Adapted from *Business Process Management: SAP Road Map, 2008*

Figure 3
• **Leverage analytics to improve asset optimization and avert cost.** Upstream operations are capital- and asset-intensive. The challenge that upstream operators face is to minimize the non-production time (NPT) in their operations to maximize production. According to the Athens Group, drilling contractors incur $100 million to $150 million per annum on account of NPT costs. The highest percentage of failures that led to NPT were reported on sub-surface equipment.

Asset analytics provide visibility into the performance of critical assets employed in operations. Such analytics not only help with real-time monitoring of current performance, but they also provide foresights into future performance, including possible downtime, through pattern analysis. This helps companies take preventive maintenance measures for these critical assets so that NPT is minimized (see Figure 5).

**Categorize to Save**

![Risk Aspects](image1)

- **Supply Assurance**
  - Impact on business
  - While sourcing from limited sources

- **Operational**
  - Low cost, high volume
  - High transaction, high risk

- **Strategic**
  - Critical to business outcomes

- **Tactical**
  - High demand, low availability, high cost goods and services

- **Commercials**

![Volume of Spend](image2)

**Analytics on Casing Monitoring**

<table>
<thead>
<tr>
<th>BUSINESS PROCESS</th>
<th>FAILURE SITUATION</th>
<th>BUSINESS IMPACT</th>
<th>PREVENTIVE ACTIVITY</th>
<th>DATA USED FOR ANALYSIS</th>
<th>BENEFITS</th>
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</table>
| Once a well has been drilled, the metal casing is inserted to strengthen the hole left behind. This is called the well bore. | An unexpected increase in friction between the metal casing and well bore may cause:  
  - The casing tube to get stuck  
  - Damaged casing  
  - Improper casing link  
  - Water and crude contamination, etc. | + Huge cost impact  
  - Productivity loss  
  - Valuable time loss  
  - Environmental safety threat  
  - Social and political loss, etc. | The Casing Monitoring Console detects any unexpected increase in friction between the casing and the well bore, and advises the rig crew on what action to take to ensure the casing doesn’t get stuck, which could otherwise cause delays or require another well to be drilled. | Casing number  
  - Hook load  
  - Time  
  - Casing string pressure, etc. | + Less downtime  
  - Reduction in NPT  
  - Higher productivity  
  - Better drilled well  
  - Reduction in drilling cost  
  - Up to 25% better casing quality  
  - Up to $200m cost benefit by reducing NPT, etc. |

**Figure 4**

**Figure 5**
Footnotes


2 Athens Group is a pioneer in offering systems-based rig inspection services. In its first annual benchmarking report, “The State of NPT on High Specification Offshore Rigs,” published in 2010, it provides a detailed analysis on the causes of drilling control systems’ non-productive time and their impact on the financial performance of the drilling. The report is widely referenced by the upstream industry when analyzing drilling operations efficiency.

3 Benefits referenced from BP’s Well Advisor Program; information available at [www.BP.com](http://www.BP.com).

*For more insights, visit our energy and utilities page or e-mail us at inquiry@cognizant.com.*