

Technology - bringing stability to the oil industry

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The oil industry has witnessed extreme crude price volatility in recent years. The dominant causes besides political factors include price speculation, the strengthening of US markets due to their 'shale revolution', and the increasing interest to leverage greener energy sources at a global scale.



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The trend is likely to continue in the short term, driving oil companies to respond by prioritising their production investments in accordance with demand, and saving costs where they can.

What are the challenges?

Whenever the oil price drops, oil companies respond by delaying production investments, and when prices rise they increase investments. This volatility poses huge pressure on them as they need to respond quickly, or risk having surplus

stock and an overabundance of resources in times of low demand, and too little stock and resources in times of high demand.

Investment prioritisation is critical at both low and peak points in the oil market. Oil companies need to weigh the costs of oil extraction in areas where drilling or accessing oil is extra resource intensive. It often makes sense to shut these sites down during periods of low demand, and only keep them operational when demand is high.

Technology plays a vital role in giving oil companies the insights they need to plan better and execute in this volatile market.

How does technology help?

Oil companies have been using technology, such as sensors and automation for a long time now. They now need to invest in 'new age' technology that offers more. With real-time data collection and leading-edge analytics, the advancements made in digital technology will help oil companies act faster and avoid the costs of delayed reactions.

Data, and the value thereof, continues to be a much-discussed topic across all industries, and oil companies are quickly catching on to the benefits offered by real-time data analytics, and subsequent automation and optimisation opportunities.

Additionally, the oil industry can leverage data insights to give companies better visibility into customer preferences, and its impact on product requirements for e.g: changing customer preferences for greener products lowering plastics demand. Market planning and forecasting will improve and lower inventory carrying costs.

All of these help oil companies to strike an almost real-time balance of costs versus demand.

What technology should they focus on?

An obvious choice is the cloud. The cloud offers the speed and agility that oil companies need to respond to a fast-changing market. It also gives them a chance to offload expensive, rigid systems that weigh heavily on their balance sheet, enabling them to move to a more on-demand platform, where they can leverage systems on an as-a-service model, using only what they need when they need it.

In the downstream side of the oil and gas business, like business-to-business and retail marketing, there is high value for solutions that can be consumed 'as a service' in a volatile price market with frequent customer preference changes and social media impact. Acquiring data ahead of the trends and preferences can ensure oil companies get better prices and profits.

The cloud also provides oil companies with increased centralisation, enabling single views which is a valuable benefit for an industry that typically has operations worldwide and a largely distributed workforce.

Artificial Intelligence (AI) is another technology that oil companies can tap into. Seen as a game changer, AI has particular

benefits for the enterprise side of oil - especially in forecasting, optimisation of supply chain and automation of routine tasks.

Coupled with machine learning, AI can do causation analyses to provide predictive outcomes. An example of this is progressive cavity pump failure, a common occurrence within upstream oil and gas production – and its failure can be expensive and time consuming with considerable downtime in production. Although failure is known to happen, predicting when it happens is next to impossible, until now, with real-time sensors feeding data to AI systems, creating alerts and enabling maintenance before any failures can take place.

How can the oil industry use technology to its advantage?

Unfortunately, AI adoption may be on the rise, but it is a long-term process, requiring extensive training and exposure to data, access to quality data repositories, effective writing of algorithms and a number of other dynamic requirements.

With the rapid enhancement of these technologies, it is beneficial to partner with service providers who understand both the industry demand and technology trends in order to effectively bring them to solve the business ask and mitigate potential implementation problems.

There are scores of use cases and case studies that prove the effectiveness of technology within the oil and gas industries, however, it needs to be coupled with experience, knowledge and an acumen for avoiding errors that past projects have encountered.

Oil and gas businesses that leverage a knowledgeable and experienced partner can extract the benefits of technology while foregoing the risk and concern, helping to engender more stability in an increasingly volatile market.

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