

Four ways digital infrastructure investments can energize an oil and gas business

By Benjamin Beberness

During a week dominated by news of a resurgent U.S. oil and gas sector disrupting the world's oil production hierarchy, it would have been easy to overlook a visit to New York in January by a contingent of Danish trade officials to talk with their American counterparts about developing wind farms off U.S. shores.

But for energy companies whose goal is sustained relevance and profitability, both developments should have resonated. Make no mistake, the recent surge in oil prices, along with forecasts from the International Energy Agency that in 2018 U.S. oil production would hit its highest level since 1970 – surpassing output from Saudi Arabia and rivalling that of Russia – is positive news for the industry and for global energy security. But that should not obscure developments such as the U.S. - Danish offshore wind power partnership, or the big plans for offshore wind projects along the East Coast, from North Carolina to Massachusetts – plans that involve the likes of Norway's Statoil.

Indeed, the current U.S. oil and gas resurgence, fueled largely by a sustained shale extraction boom, represents a massive opportunity for energy companies to invest more broadly in themselves. They are positioned from an infrastructure standpoint to thrive in a marketplace where agility is king, and where strategy is dictated less by swings in the commodity pendulum and more by consumer preference, relevant real-time data and the ability to mobilize and monetize across a portfolio of products and services.

A Prime Example

Statoil is a prime example. Besides holding a significant development stake in U.S. offshore wind power projects, it also is an active player in the mainland U.S. shale oil boom. Statoil is one of many energy companies that have begun to see the wisdom in investing in the “and”: onshore and offshore, carbon-based sources and renewable sources, barrels of oil and megawatts of power.

What's more, these companies are investing to add physical capacity – pipelines, export terminals, etc. – and digital capacity. ExxonMobil is a case in point: Its CEO, Darren Woods, recently announced the company intends to spend more than \$50 billion over the next five years to expand business in the United States. Although a chunk of that money is earmarked for physical infrastructure, ExxonMobil also is making a sizable investment in digital technology to scale up its capital expansion projects more efficiently and profitably.

Several lean years forced energy companies of all sizes to invest in systems to help them do business more efficiently and stay profitable when commodity prices are constrained. Now that those lean years are apparently over, where exactly should oil and gas enterprises target their tech investments to maintain that forward momentum, so they continue to capture efficiency gains, while also being nimble

enough to seize on growth opportunities? There are four areas where tech investments can make a significant and lasting impact.

1. Exploring new business models. A new wave of data-powered digital tools, many of them cloud-based, is expanding the meaning of the term “exploration company,” giving oil and gas concerns the agility to test, roll out and scale up new business models. Differentiation is no easy task in a highly commoditized business such as energy. By investing in platforms that incorporate automation, artificial intelligence and machine learning, companies gain the ability to use comprehensive, real time planning, forecasting and modeling to explore the new business models that can differentiate a company from the crowd.

Say, for example, XYZ Oil & Gas Co. wants to do more “fix and flip” business, where it purchases oil fields relatively inexpensively, takes steps to rebuild the value of those fields, then looks to resell them for a profit. A robust cloud-based platform-as-a-service gives the company the ability to bifurcate and analyze data collected from an individual field, so it can identify ways to build the value of that field before putting it up for resale.

Some of the same digital tools are helping companies such as Shell explore and integrate new business models. Late in 2017 Royal Dutch Shell announced plans to develop electric vehicle fast recharging outlets at traditional gasoline/diesel filling stations in Europe. Having a platform capable of sourcing and modelling data from other industries can help Shell and its partners develop a customer retail experience around these new EV charging outlets.

Digital platforms also can serve as the infrastructural foundation on which to build broader ecosystems to deliver energy products and services. These “network of networks” seamlessly connect stakeholders – workers, operators, suppliers, customers and assets – around a specific function or initiative, be it hydrocarbon logistics, for example, or a capital project. The digital solution provides a collaboration platform for data and information to flow seamlessly among all involved parties.

Having a platform with blockchain capabilities also can be valuable in the context of such an energy ecosystem, where transactions involve multiple parties, internal and external, providing a secure, distributed system of record to aggregate, publish and share transactions.

Whatever business model a company chooses to explore, the digital platform becomes a single source of organizational truth for the company, providing standard tools, processes and data structures. It becomes the structure within which to rapidly develop new services and experiences to provide consumers with convenient energy outcomes. Because, in the outcome-driven energy world that we’re seeing take shape, access to information trumps access to capital and reserves as the key competitive differentiator.

2. Untethering from the traditional demand and price curves. Oil and gas companies learned to manage their costs and their resources more efficiently

during the recent price downturn. Now that commodity prices have rebounded, it's a matter of companies continuing to apply those strategies so they no longer are as susceptible to the boom-bust cycles that have long plagued the oil and gas market.

The right digital tools can help energy companies escape the volatile swings of the supply and cost pendulum by allowing them to focus on increasing returns from their assets. These tools give companies the ability to granularly identify their most profitable assets and activities, then back them with appropriate resources while also using data to pinpoint operational areas where a targeted investment can significantly improve efficiency. The goal is to thrive whatever the commodity price environment with a disciplined approach to investment.

Oil and gas companies have spent the past several years focusing on extracting as much value as they can from incremental process improvements, workforce reductions and supplier cost reductions. Now that conditions have improved, the next step is to invest in Industry 4.0 digital systems that enable them to focus their energies on value enhancement and growth.

3. Responding to government policies. When ExxonMobil's Woods announced the company's plans to boost investment in U.S. oil and gas production, he made clear the reduced corporate tax rate that was part of the recent federal tax overhaul factored heavily into the decision. That came within weeks of the Trump Administration loosening offshore exploration restrictions.

"The recent changes to the U.S. corporate tax rate coupled with smarter regulation create an environment for future capital investments," Woods wrote in a blog post on the ExxonMobil website. The ability to mobilize on opportunities generated by government policies comes in large part from having a strong digitally enabled infrastructure in place.

4. Maximizing asset value. The name of the game in the energy business is still getting the most out of assets, whether it's traditional oil and gas production properties, offshore wind farms or an electric vehicle charging network. Digital asset lifecycle management – the ability to deploy resources based on a transparent, multi-point, real-time view into any asset at any time – is vital to success for energy companies large, small and in between.

Some of the strongest solutions available today give companies an integrated data infrastructure and interoperability across multiple data platforms. In that context, they can integrate operational data gathered from equipment and assets in the field into their enterprise system quickly and seamlessly, without the headaches that often accompany data migration. They can then use that data in concert with predictive maintenance data and other key inputs such as procurement cycle plans to inform operational and capital investment decisions.

Having a digital platform in place gives oil and gas companies the means to create an infinite loop of innovation and differentiation, positioning them to thrive even when the commodity price pendulum swings again, as it inevitably will.

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