



Using digital
to lubricate
the oil and gas
business

energy



The Oil & Gas (O&G) industry is at a crossroads. Geopolitical risks and compliance requirements are mounting, renewables are rocking the supply and demand equation, nimble competition and new business models are adding to the pressure. This adds uncertainty to capital allocation decisions and long-term ROI from new project investments. In addition, skills are becoming scarce while exploration is moving to remote and complex environments putting an extraordinary burden on optimizing supply and distribution. The industry, never built for agility and speed, is waking up to a new reality: what got it here will not take it much further. Can digital be the revitalizing force?

Consider just five recent developments in the industry. One, while aviation and marine demand may not fall in the foreseeable future, electric car sales are on the rise (74% increase in electric car sales in the US in 2017 over 2016ⁱ). Electricity and solar are eating into the O&G pie. Two, the response to ridesharing companies like Uber has been explosive. They are already impacting private car ownership and sales. This in turn will have a domino effect, hurting fuel demand. Three, traditional big-box retailers have set up fuel forecourts at their store locations and offer fuel savings through discounts to their retail customers. Four, traditional fuel retail is facing highly disruptive competition from start-up companies that offer convenient fill-where-you're-parked services. And finally, it is not getting any easier for the oil industry to attract the kind of talent that it needs. More Americans are now employed by the solar power industry than in oil drilling and productionⁱⁱ.

These disruptions are driving oil companies to redesign their operations and rethink the future of their business. That's where digital capabilities and reimaged processes present exciting transformation potential. They will enable

executives to address the thorny questions oil companies are faced with:

- How will fuel forecourts retain their relevance in an uncertain future?
- If consumer goods, banking and travel industries are changing customer experience and raising the bar for customer expectations, what can energy companies learn from those industries?
- How can upstream operations and supply chains be made more agile and responsive to price volatility and market disruptions?
- How will oil companies elevate collaboration across diverse and sprawling teams to make the best of their global skills base and expertise?
- How will oil companies identify and exploit new business models and revenue streams?

Key areas of maximum digital ROI

The truth is that the O&G business is not a new comer to technology and data. It has developed and deployed extraordinary technology required for complex geophysical surveys, resource extraction and product transportation. It has decades of meticulously accumulated operational and market data that can be used to make accurate forecasts. It has remarkably resilient and rugged systems and processes. If anything, the industry is ready for digital.

What is urgently required is the ability to prioritize high-impact and high-return applications of digital capabilities. Wipro's energy industry expertise and global partnerships with O&G companies tell us that the top digital priorities should include:

Customer experience: The bland customer experience in retail forecourts has never helped build loyalty. It is time to change the flat mass market, fuel-and-service-centric approach. The key is to personalize the consumer experience and

ⁱ<https://cleantechnica.com/2017/04/06/74-increase-electric-car-sales-us-march-q1-2017-electric-car-sales-report/>

ⁱⁱ<https://electrek.co/2016/05/26/work-solar-power-extraction-oil-gas-or-coal/>

adapting products and services to customer lifestyles. Leisure and travel operators, traditional and online retailers and financial companies have made tremendous progress in this direction and offer crossover learning that can be successfully adapted to the fuel retail and B2B context.

Supply chain: In getting the right type of crude, in the right quantities, at the right time to the right places, and getting the various types of finished products from the refinery to where they are required, oil companies face the most challenging supply and distribution optimization problems. Prevailing solutions and practices are often inefficient, inflexible and expensive. Thanks to the capabilities offered by cognitive automation, analytics and blockchains, these processes can now be optimized to become more efficient and agile.

Asset management and operations:

The O&G industry is asset and operations heavy. Surveillance, inspection and maintenance processes are predominantly manual and offer great potential for efficiency gains using remote monitoring and augmented reality capabilities. Traditional spares and inventory management can be partly replaced by on-demand and on-site production of spares using 3D printing. And schedule-based maintenance can be substantially replaced by analytics-driven predictive interventions that reduce downtime, save maintenance cost and improve customer satisfaction.

Intellectual capital: The oil industry thrives on sophisticated engineering competencies and knowledge. These are becoming scarce as an entire generation of O&G workers head for retirement. However, using digital collaboration technologies, crowd-sourcing models and machine learning capabilities, it is now possible to make expertise more broad-based and accessible instantaneously.

Decision making: For an industry where plans take years to become operational, siloed ways of working within disciplines hasn't helped oil companies achieve effective and agile decision-making. This needs to change. Thanks to the vast amounts of data that oil companies have amassed over the years the industry can now use analytics and automation-assistance to make decision-making more agile and insight-driven.

On the digital path

The goal of the oil company's digital strategy should be to use reimagined processes, new technologies and data-driven insights to amplify the outcomes of cost-management initiatives, improvement in customer experience, and the launch of new products and services backed by new business models and extended partner networks.

These are very accessible goals. Adjacent industries such as manufacturing and utilities are already adopting digital technologies for similar outcomes. They are successfully altering their processes. The good news is that they can meet the changing needs of their customer and the challenges thrown up by aggressive new competition. The oil industry should be no different.

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