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Digital disruption

Bold times for the oil
and gas industry

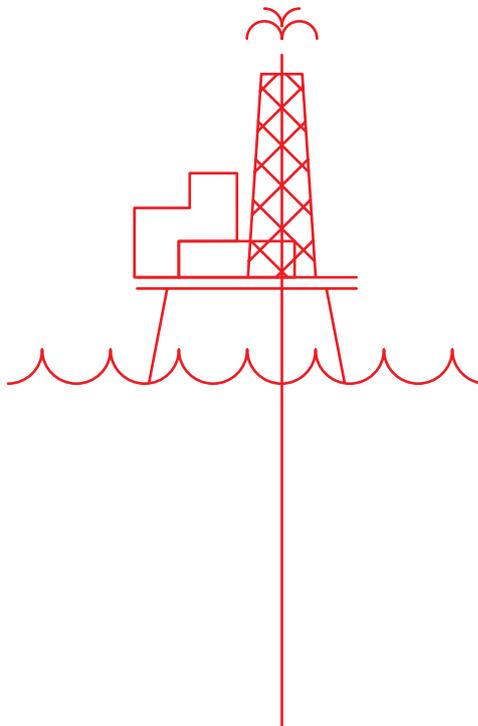
By Richard Kho

Riding volatility

The time is ripe for digital disruption in the oil and gas industry.

Low prices and a volatile market have resulted in a typical response—cut costs (both in terms of headcount and wage freezes), renegotiate supplier agreements and reduce capital expenditure. These actions may be effective in delivering immediate financial performance, but a constant expectation to do more with less makes managing volatility harder. Over the long term, these measures can create operating model rigidity and risk hampering performance and growth. To survive, progressive oil and gas companies must be bold and recognize that digital strategy is not merely IT strategy. Digital presents an opportunity to disrupt the industry, not only by driving the next wave of cost efficiency, but also by securing operational agility to better manage volatility and position for growth.

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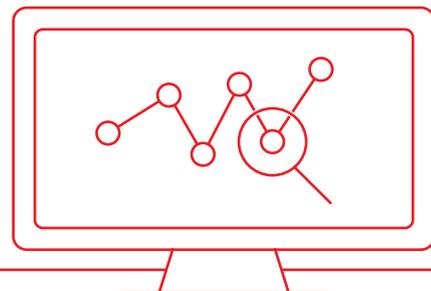
Disrupt to progress

In an Accenture survey¹ of oil and gas industry professionals, the majority recognize the need to invest in digital technologies—62 percent said they plan to invest more or significantly more in digital technologies in the next three to five years.

Yet oil and gas leaders need to not only invest in, but also better understand how to grasp the opportunities from digital. Pockets of progress are being made:

- Advanced analytics is being used to monitor network-wide pipeline operations. According to Woodside's Senior Vice President Strategy, Science and Technology, Shaun Gregory: "By harnessing more than 30 years of leading liquefied natural gas (LNG) operational experience through predictive analytics we are enabling our people to access extensive analytical insights that are expanding our decision-making capabilities and enhancing our ability to be predictive in our LNG operations."²
- A pipeline data capture app for iPads is being used to improve accuracy of field data capture, resulting in significantly reduced costs and a scheduled maintenance program.
- Digital operations centers, such as Chevron's Machinery Support Center³, are monitoring critical equipment in real time and across global operations to identify equipment faults before they lead to unplanned deferment.
- Real-time decision engines are being used to promote optimized offers to relevant customers across retail sites—at a time to suit the customer, not the oil and gas company.
- Companies such as RunTitle⁴ offer energy companies a platform for the sale and purchase of mineral rights, streamlining the land assessment and acquisition processes.

These examples realize returns, but lone digital tactics are no longer enough. Recent cross-industry Accenture Strategy research shows that less than half of companies currently have a digital strategy implemented across the organization.⁵ Without an overarching digital strategy that sets the vision or ambition for digital and defines where and how to take advantage of it, the oil and gas industry is unlikely to reap the full rewards.



¹ Accenture Oil and Gas Digital and Technology Survey, April 2015, <https://www.accenture.com/us-en/insight-digital-energy-survey-2015-accenture-microsoft>

² News release, <https://newsroom.accenture.com/news/woodside-teams-with-accenture-to-implement-predictive-analytics-for-lng-operations.htm>

³ Chevron website, <http://www.chevron.com/next/digitizingoilfields>

⁴ RunTitle website, <https://www.runtitle.com>

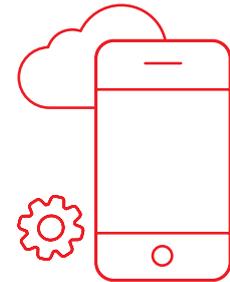
⁵ Accenture Strategy Executive Research 2015, <https://www.accenture.com/us-en/insight-being-digital>

Exploring digital

Leading oil and gas companies are using digital technologies—such as data, analytics and artificial intelligence—in three ways to:

1 Create new business models and enhance channels to market to engage customers and drive revenue

New **business models** are already opening new revenue streams. Eni has entered the car rental business in a mobile app partnership with Vodafone and Fiat that provides flexible drop-off and pick-up anywhere in selected cities, with Eni taking care of the fueling.⁶ Another supermajor's marketing operation has created a cloud-based customer data lake and is using sophisticated loyalty analytics and algorithms to understand changing customer behaviors, enhancing the **channel to market**. The result is more compelling marketing offers, increased customer frequency and basket size. Rapid evolution in digital capabilities across analytics, robotics and digital marketing will continue to offer opportunities for new revenue models which industry leaders can capture.



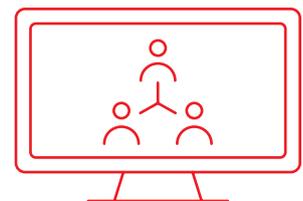
2 Improve operations to increase agility and better manage volatility

Using the Internet of Things can drive automation and improve upstream and downstream operational efficiencies. In a trends survey, 29 percent of oil executives felt their company was unprepared to deal with the current levels of uncertainty and volatility and more than 22 percent felt their company was not agile enough to adapt.⁷ In today's environment, oil and gas companies must seek out more efficient ways of operating. For example, an international oil company is using digital inventory management to improve inventory content, stock levels and warehouse practices. Statistical modeling has identified savings of 15 to 20 percent of working capital tied up in active inventory.



3 Enhance the back office to realize productivity gains

New collaboration technologies and artificial intelligence can improve productivity and safety across the enterprise. The digital field plant worker is the first manifestation of the many opportunities that will ultimately become available to transform the industry. Field workers are expected to gain 1.5 hours per day in work time using electronic work packages, potentially boosting productivity by up to 25 percent.⁸ Workflow and workforce collaboration and automation can have a dramatic impact on back office operations. For example, pilots are being undertaken by oil services group Baker Hughes to apply artificial intelligence software to do the work of back office accountants and call center workers.⁹



⁶ Enjoy website, https://enjoy.eni.com/en/milano/come_funziona

⁷ Accenture Oil & Gas Digital & Technology Survey, April 2015, <https://www.accenture.com/us-en/insight-digital-energy-survey-2015-accenture-microsoft>

⁸ Accenture analysis

⁹ News release,

<https://newsroom.accenture.com/industries/systems-integration-technology/accenture-and-ipsoft-expand-relationship-to-focus-on-amelia-artificial-intelligence-platform.htm>

Executing a digital strategy relies on having the right team with the right skills. In a recent cross-industry Accenture Strategy survey, 92 percent of executives said it was critical or important to take actions now to transition their workforce to succeed in the digital economy.¹⁰ Advances in wearable devices, more natural human interfaces, and smart machines are extending intelligent technology to interact as a “team member” and augment the workforce of the future. For example, Statoil and its license partners have selected an unmanned wellhead platform as the concept for a future development phase in the North Sea, with operations run by remote control from the shore.¹¹

Where next?

Oil and gas leaders need to ask themselves five key questions to drive digital transformation in their businesses:

1 What is the level of ambition for digital?

A low and volatile price environment is forcing the industry to consider digital solutions. Deciding whether to defend, differentiate or disrupt through digital is the starting point for any digital transformation and determines which strategy to follow.

2 What is the intent and remit of digital?

Leading oil and gas organizations that have embraced digital have clearly defined and prioritized the challenges they face. Downstream organizations tend to focus on improving customer experience through digital, while upstream businesses focus on using digital to drive operational efficiency.

3 How is digital governed across the organization?

Even with absolute clarity on the problem digital is trying to solve there are many competing functions within the organization that can claim ownership of digital. Being clear on how digital is governed, where new digital capabilities sit, and which new partners are required to make digital work are fundamental to successful digital transformation.

4 What changes are required to deliver digital?

Digital requires new ways of working and new capabilities. Digital services can be scaled up and down in a matter of days, prompting an “innovate and fail fast” mentality—a different mind-set for an industry where the adoption of new technologies can take many years.

5 What untapped value resides in the organization's data?

The starting point for any digital transformation is data. The oil and gas industry generates high volumes of data every day, yet much of the value that resides within this is either lost or untapped. Data can be used to better understand and predict the pain points where value is created and lost. Broad digital services can then be evaluated on a return on investment basis to determine where and how to apply new capabilities quickly to produce the greatest impact.

By achieving digital maturity across channels, operations and the enterprise, oil and gas companies can gain the agility to transform and counteract the impact of volatile times.

¹⁰ Accenture Strategy Executive Research 2015, <https://www.accenture.com/us-en/insight-being-digital>

¹¹ Accenture Technology Vision 2015—An Energy Perspective, <https://www.accenture.com/us-en/insight-technology-vision-2015-energy-perspective>

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