

# Optimizing upstream oil and gas production

Accenture's Production Management Solutions  
for High Performance

A large, thick orange chevron pointing to the right, positioned behind the text "High performance. Delivered."

High performance. Delivered.



# Introduction

The energy industry is under constant pressure in all production environments: conventional or unconventional; onshore or offshore; oil or gas. In the face of rising costs and recent widespread production target misses, exploration and production (E&P) companies are looking to grow reserves and maximize production—while ensuring safe operations and avoiding environmental impact. But imprecise or redundant decisions often result in unnecessary downtime, suboptimal production rates, and increased maintenance and safety issues. This is why 'production management' has become a crucial step on an oil and gas company's journey to high performance.

Accenture's production management offerings address issues faced by many operators in delivering production results to their stakeholders—be they management, partners or contractors—by taking a holistic and end-to-end view of the processes and tools needed to deliver high-performing production results. To do this, we focus on six critical steps: model the asset, forecast production, measure production, analyze results, act on insights and monitor the impact of those actions.

This type of enhanced capability ultimately optimizes the whole asset life cycle. Whether your production managers are trying to bring an oil field up to a plateau rate or to extend a field's life, Accenture can help.

## Did you know?

Accenture's Energy industry group serves more than 150 oil and gas clients globally many of which are in the Oil & Gas Journal 100.

## Unconventional gas

Unconventional gas—such as coal-bed methane, shale gas and tight gas—is expected to account for almost half of the increase in global gas production by 2035<sup>1</sup>, with most of the increase coming from the United States, Australia and China. The companies that are leading the way with unconventional assets are not the traditional players, but rather the independent oil companies who saw the opportunities before the supermajors were able to act.

Many of these unconventional gas developments are found in unusual locations, including Australia, Argentina, China and the Ukraine. These locations are posing significant new challenges to the industry especially with regard to logistics, modeling of the asset to derive reliable forecasts and water management. Accenture is actively developing solutions and insights to help E&P companies address these challenges and more.



<sup>1</sup> IEA World Energy Outlook 2012, IEA, [www.worldenergyoutlook.org](http://www.worldenergyoutlook.org).



# Benefits of production management

## Improve information quality

- Improve accuracy of forecasts
- Measure production more effectively

## Decide quicker

- Reduce the cycle time for making decisions
- Boost production with optimization
- Improve risk management

## Focus on value-added processes

- Transform the way field operators execute their jobs
- Focus on analysis, optimization and maintenance
- Use tools and technology to predict problems

## Improve decisions

- Develop consistent, reliable production forecasts
- Increase collaboration with the workforce by sharing information
- Develop a core operating group of specialists in a decision support center

## Did you know?

Accenture releases a quarterly Energy Industry Trends Review. The publication is available on [Accenture.com](http://Accenture.com) and reviews the last quarter's industry outlook, including economics, oil, gas, refining and rig activity.

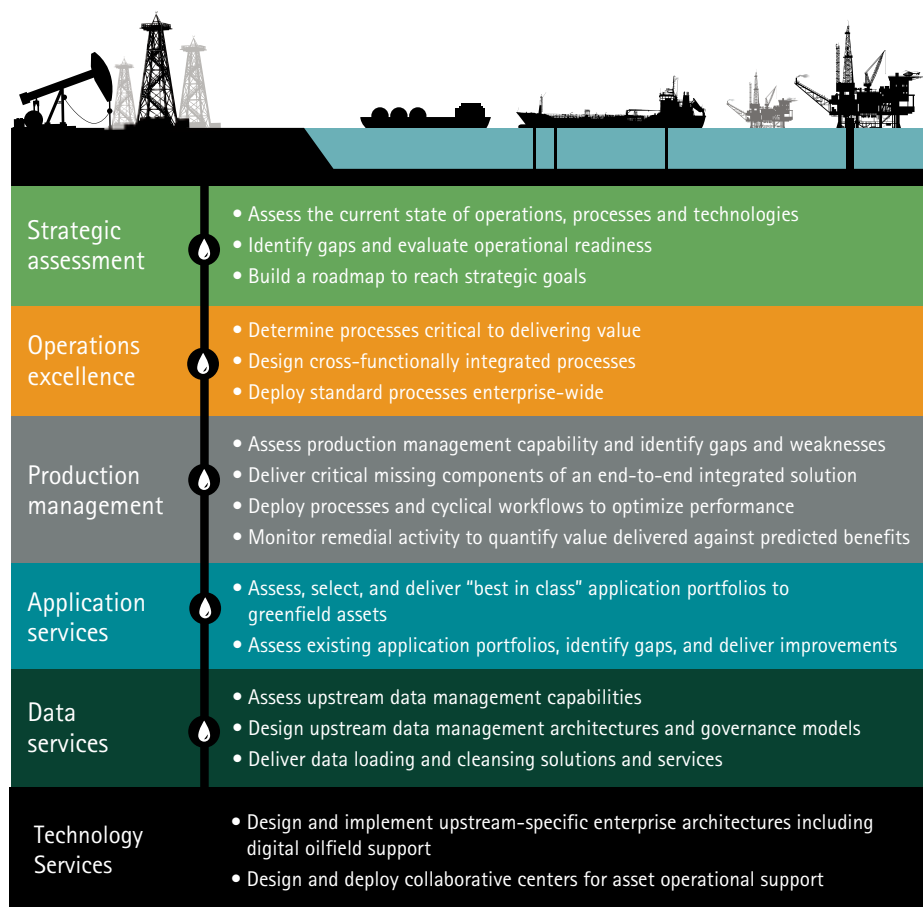


# Production management services

Based on decades of oil field operational experience, Accenture has developed a full suite of production management services that can be combined, or used on a standalone basis to target specific challenges (see Figure 1).

Our solutions support safe, reliable and sustainable operations; reduce costs; and increase operating excellence at the primary production bottlenecks. Accenture can define the scope and objectives to align with a company's business strategy, setting up definable metrics to measure progress.

Figure 1. Transform upstream production.



## Strategic assessment

Before embarking on any optimization journey, an assessment of the current state of operations typically provides a strong foundation for change. Drawing on interviews with key stakeholders, we combine company insights with our knowledge of leading practices from across the industry. Whether challenges are known or there is a need to identify gaps, our assessment of the company's capabilities will result in a roadmap to help reach strategic goals.

We look at process excellence, technology readiness, skill levels and delivery capability— from a single asset all the way through to a complete asset portfolio. A strategic assessment brings structure, external analysis, alignment and business justification to upstream operators, and provides confidence around investing in appropriate solutions.

## Operational excellence

Operational excellence is a state in which an upstream company achieves targeted business performance from world-class operations. Ideally, this performance is achieved within a continuous improvement environment based on the foundation of a clearly defined operating model.

At the core of Accenture's operational excellence services are our business process libraries, leading practice benchmarks and key performance indicators. Our global team of experienced practitioners in upstream operations uses this toolset to define gaps in our clients' process performance, and develop programs to close gaps effectively and sustainably.

## Production management

Accenture works with upstream companies to define the scope, objectives and metrics for the company's production management processes aligned with the business strategy. We develop innovative solutions that enable high-performing production management and support operational excellence efforts—thereby reducing operating costs and increasing production while improving safety standards.

Our suite of integrated upstream solutions includes production forecasting, hydrocarbon accounting, asset surveillance and optimization, loss management, and much more. Our solutions are based on more than 12 years of oil field operations experience, including the design and deployment of digital oil field and integrated operations programs.

The solution also covers the full range of solution development services— from a proven delivery methodology; to process and technology design, build and implementation; to software selection and procurement; to change management services.

## Data services

Our upstream data management solution is designed to help companies achieve more order and reliability in managing the increasingly complex upstream data environment, and then to transform the data into timely and valuable information. This service is based on the Accenture data management and architecture framework, and leverages the upstream high performance business process model.

We work with companies to assess critical data gaps, design programs and develop a systematic implementation. Our approach is aligned with the organization, workflows and technical landscape. Upstream data types include both structured (seismic, well, production, spatial, land and asset) and unstructured (well/log files, images, records, sensors and contracts).

## Application services

Accenture has a broad range of offerings for the development and support of applications:

- Application development
- Application maintenance
- Application outsourcing.

This technology consulting offering is based on our deep understanding of the applications landscape for the upstream industry. The offering includes assets we have developed from our years of experience helping companies with their application portfolios.

Among our application offerings is the innovative greenfield platform. This fast-track program uses Accenture's extensive software tools to quickly work through the 'assess and select' phases of introducing an application portfolio for a new upstream asset, and deploying the core applications in an accelerated timeframe.

## Technology services

Making sure that upstream E&P assets operate as efficiently and effectively as possible is crucial to driving superior business performance. Accenture can help upstream companies improve operational performance by providing a new approach to technology architecture. This approach sweeps away the traditional barriers between siloed vertical disciplines working in isolation from one another. The fragmented structure is replaced with an integrated and holistic approach to enterprise architecture based on IT solutions that facilitate common data, standards and processes, and real-time information flows.

Important offerings include an approach to enterprise architecture designed specifically for upstream companies—the Accenture integrated oil and gas solutions platform which is based on a Microsoft Upstream Reference Architecture (MURA)-compliant technology platform, originally designed for digital oil field and integrated operations deployments.







# Energy industry experience

The Accenture energy industry group serves a wide range of companies in the oil and gas industry, including international oil companies (IOCs), national oil companies (NOCs), independent oil companies and oil field service companies. We collaborate with our clients to help them meet competitive challenges and shape solutions to support high performance. With experience spanning the entire energy value chain, including upstream, downstream, oil field services and pipelines, we work in more than 20 countries and serve more than 150 clients.

Accenture also has created energy hubs located in energy-centric locations around the world (see Figure 2). The purpose of the hubs is to serve as a network to quickly respond to account team needs, package local thought leadership, to highlight emerging trends and test Accenture's industry assets for client relevance.

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Figure 2. Accenture Energy Hub Network.



# Case study: Optimizing production

A North American oil and gas company operates thousands of wells in a mature, onshore field. The company also has an active drilling program in mature fields and develops several unconventional fields.

The company's onshore US business unit was a key contributor to the company's overall growth strategy. But it had several challenges in the areas of wells and facilities; environment, health and safety (EH&S) risks; information delivery; workforce; and unconventional well development.

Accenture helped the company implement predictive analytics to move toward a more proactive state, optimize business processes, and manage communications among stakeholders and the workforce to enable change.

The oil and gas company's transformation has been a success. Based on Accenture's services and solutions, the company realized the following benefits:

- A five percent increase in production
- A transformed workforce operating with a different mindset
- The ability to handle attrition due to aging demographics
- Significantly reduced EH&S risks.

## Did you know?

Accenture's Energy industry group is investing extensively in Accenture's business process initiative. This initiative focuses on leading industry processes and a comprehensive model for the energy industry across all segments, including industry-specific business processes, process flowcharts, key performance indicator (KPI) frameworks and capability assessment models. The logical operating model has been developed not only for oil and gas, but also biofuels, oilfield services, oil sands and capital projects.

# Optimizing production for high performance

Many companies are finding it challenging to meet production targets in their base business. Accenture is helping oil and gas clients all over the world to improve their ability to model, forecast, and deliver on their targets by building a faster, coordinated response—across people, processes and technology—and to facilitate optimal production for high performance.





## Contact us

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## About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 261,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$27.9 billion for the fiscal year ended Aug. 31, 2012. Its home page is [www.accenture.com](http://www.accenture.com).