

## **Demand-Driven Practices to Combat Today's Complexity and Risk in the Oil and Gas Industry**

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The oil and gas industry consists of operators supported by a complex network of equipment, materials and service suppliers. Increased volatility and risk present challenges that require the capabilities of a demand-driven value network to deliver balanced and sustainable performance.

## ANALYSIS

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As an asset-intensive industry driven by decades of innovation and advanced engineering, the oil and gas industry is expected to deliver safe, efficient and reliable supply. Yet its short-term focus on functional execution and efficiencies in an environment of wildly fluctuating commodity prices and cash flow promotes reactive behavior. When prices and margins are healthy, maximizing supply is the top priority; during leaner times, cost control takes precedence. This research analyzes the industry's drivers and identifies research on three demand-driven practices that oil and gas operators must adopt to manage trade-offs and mitigate risk through market cycles.

### **No. 1 — Rethink Supplier Management**

The global oil and gas industry has become increasingly fragmented and complex. Although ExxonMobil and Shell are the world's top-two petroleum refiners, they rank 17th and 22nd, respectively, in proven reserves among all oil and gas companies worldwide. According to the Oil & Gas Journal, 16 national oil companies (NOCs) in developed regions control 90% of the worldwide energy reserves, yet their operating practices aren't well advanced and their production lags its potential. As a result, NOCs often rely on partnerships with the integrated super majors and others like BP, Chevron and ConocoPhillips.

Upstream exploration and production projects have become larger, more complex and increasingly dependent on close working relationships with suppliers and service providers. Although the integrated oilfield service industry has consolidated, led by Baker Hughes, Halliburton, National Oilwell Varco and Schlumberger, globally scattered reserves have led to a patchwork of local requirements that constrain efforts to maximize value and rationalize while collaborating with suppliers.

Companies in other industries have successfully dealt with similar supply network challenges by re-evaluating existing relationships. Outsourcing strategies deliver benefits like high resource utilization and development of specialized capabilities, but they require a new approach to procurement in an industry sector that's still pursuing a model of excellence centered on commodity and category management. Although there's recognition of strategic suppliers based on spend and evidence of plans for collaboration with some of them, many of the practices are still transactional (see "Not Every Supplier Collaboration Is Created Equal: Focus on Long Term Relationships and Avoid Transactional Practices" for more on this). Some critical capabilities required to build collaborative relationships include supplier sensing, performance management, segmentation and development.

"Successful Supply Management: It's How the Relationship Is Defined" is an excellent case study on the topic. It chronicles the development of Honda of America's sourcing organization over a four-year period, which involved extensive training of a new organization across the entire end-to-end process, including engineering, procurement, costing and quality. The company's top 100 suppliers were evaluated across 12 attributes (for example, management attitude, willingness and the ability to operate in the spirit of a Honda business partner).

### **No. 2 — Analyze and Manage Risk**

The downstream sector — that is, refining and petrochemical manufacturing — also discovered the risks posed by complexity during the recent economic downturn (see "Findings: Risk Caused by Complexity Emerges as Top Concern for Chemical Manufacturers"). Gartner investigated the challenges of manufacturing in a complex, multisite environment and defined the need for an information architecture that translates manufacturing data into business visibility of performance and availability.

Visibility is a key strategy for mitigating risk and complexity. "From EMI to Operations Intelligence, Part 1: Business Leaders Seek Key Performance Drivers" describes the approach, highlighting the near-instant benefits in quality, capacity and efficiency possible, while also providing the visibility that reduces risk and increases operability.

Another strategic risk within the oil and gas sector is its aging workforce, which challenges the need to maintain key knowledge and thus the pool of sufficiently skilled labor necessary for safe plant operation. For more on this, see "Unleashing the Next-Generation Plant Workforce with Manufacturing 2.0."

As the facts related to this year's catastrophic explosion of the Deepwater Horizon are still being gathered, the event cannot immediately be dismissed as an isolated instance. EnergyPoint Research, an independent firm that tracks customer satisfaction in the oil and gas industry, reports in its MarketPartners Update, "Customer Satisfaction — 2nd Qtr 2010," that since 2005 "subsea suppliers and their products have fallen short of customers' expectations virtually across the board, compared to their surface-based peers." EnergyPoint's analysis attributes this shortfall, at least partially, to "significant growth in the sub-sea sector, which has caused some suppliers to spread thin their organizations as they attempt to service greater numbers of projects globally."

Risk management includes more than mitigation. Gartner's research on supply chain failure across industries highlights similar trends and opportunities (see "The Toyota Recall: Lessons on Product Innovation and Global Supply Chain Risk" and "Two Major Supply Chain Failures Highlight the Need for Three Risk Management Best Practices"). Risk management also requires planning. Gartner's participation in the Supply Chain Risk Leadership Council (SCRLC) is summarized in "The Supply Chain Risk Leadership Council: Growing Influence, Growing Pains," which reveals that most companies are still in the early stages of developing effective risk management practices.

### **No. 3 — Think "Value Networks"**

A traditional approach to supply chain — that is, one focused on functional excellence in procurement and asset management, with limited integration — leaves oil and gas companies vulnerable to events beyond its control. Increased complexity requires a new approach that involves building and operating demand-driven value networks. Transformation from a traditional supply chain to a demand-driven value network requires the progressive maturation through a series of stages (see "Aligning AMR's DDVN and Gartner's Chaos-Tolerant Supply Chain Maturity Frameworks"). This transformation is centered on organization and talent development strategies, which are described in "The Expected and the Unexpected: Up Close With Supply Chain Centers of Excellence" and "Four Talent Development Milestones Build Better Supply Chains."

#### **RECOMMENDED READING**

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"Successful Supply Management: It's How the Relationship is Defined"

"Not Every Supply Chain Collaboration Is Created Equal: Focus on Long-Term Relationships and Avoid Transactional Practices"

"Traditional Lean Techniques Sacrifice Value Networks"

"Enterprise Manufacturing Intelligence: The Missing Link Between Product Supply and Demand Fulfillment"

"SABIC Makes Real-Time, Profit-based Production Decisions"

"From 'Drill, Baby, Drill' to 'Spill, Baby, Spill': Reinventing Risk and Passing the Billion-Dollar Environmental Threshold"

"Findings: Risk Caused by Complexity Emerges As Top Concern for Chemical Manufacturers"

"From EMI to Operations Intelligence, Part 1: Business Leaders Seek Key Performance Drivers"

"The Toyota Recall: Lessons on Product Innovation and Global Supply Chain Risk"

"Two Major Supply Chain Failures Highlight the Need for Three Risk Management Best Practices"

"Unleashing the Next-Generation Plant Workforce with Manufacturing 2.0"

"Four Talent Development Milestones Build Better Supply Chains"

"The Expected and the Unexpected: Up Close With Supply Chain Centers of Excellence"

"Aligning AMR's DDVN and Gartner's Chaos-Tolerant Supply Chain Maturity Frameworks"

"The Supply Chain Risk Leadership Council: Growing Influence, Growing Pains"

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