



A N A L Y S T C O N N E C T I O N



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Asset Management in the Oil and Gas Industry

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Today, oil and gas companies are deploying new technologies that promise greater efficiencies, and management is putting pressure on engineering and maintenance to reduce budget, labor, and operating costs while increasing production levels. There is also a greater exposure to risks in health, safety, and the environment as operators face new challenges in unconventional plays and new geographies. It is more important than ever to establish sound policies and practices to adhere to compliance requirements and manage risk and security violations efficiently and cost effectively — policies and practices that are all critical to good asset management.

The following questions were posed by Infor to Chris Niven, research director of the Oil and Gas practice for IDC Energy Insights, on behalf of Infor's customers.

Q. What trends do you see with regard to asset management in the oil and gas industry?

A. The past 10 years have presented significant changes for oil and gas companies: Global demand for oil is rapidly growing, but oil prices are volatile and had dropped under \$50 a barrel as of the writing of this paper. Because of the dramatic price volatility, companies are looking at their investments and internal operations to see what can be reduced, suspended, or deferred to keep the business running while maximizing asset utilization. Shale oil is an exciting new source of energy in the United States but comes with new challenges to profitably extract and produce oil. Even the supply chain has shifted, with the United States becoming energy independent and expected to become a net exporter of oil and gas in the next few years.

Oil companies realize they must find aggressive new ways to derive maximum business benefits from their physical assets. Asset management is one of the core functions in the oil industry that can dramatically impact operational performance; it can improve operations productivity by optimizing production and making production more predictable.

Q. How have these trends disrupted the oil and gas business?

A. Many companies have invested heavily in large and complicated assets. There is a continued trend toward automation, and real-time information is becoming the standard. To get the most out of its investment, an oil and gas company must have a vision for how enterprise asset management (EAM) impacts life-cycle planning, costing, maintenance, operations, performance, productivity, and more.

There is much uncertainty in the business. When the price of oil is high, the business focus is on getting the oil out of the ground as quickly as possible. Now that the price of oil is lower, the ability to maintain and prolong the life of capital equipment has become more important.

Q. How can a company assess its current position with regard to asset management to help identify gaps in its capabilities?

- A. What is missing for many oil and gas companies is a clear understanding about EAM in order to set realistic expectations for an asset management program based on objectives and capabilities. It is important for team members to understand key components, features, and interdependencies and determine their company's current position.

Once the company's current capabilities with regard to asset management are assessed, team members will identify the gaps and create a plan. It is necessary to analyze the company's performance regarding shutdowns and turnarounds and managing change. Is the team staying within budget and within forecast outage periods? If not, the company needs to consider moving to a better budgeting, planning, and scheduling system. Analyzing the contrast between unplanned downtime and the maintenance strategy will uncover excessive disruptions that indicate the need to move to a more advanced asset management strategy. A company must also have an effective system for managing change (tracking all the tasks, decisions, and documentation updates efficiently) and accessing history.

Conducting a risk analysis will help companies determine the assets most at risk of failure and then rate them in terms of severity and likelihood of occurrence. Next, maintenance programs should be reviewed in light of the analysis. This will allow companies to focus their resources on assets with the most risk, while assets with low risk can have a less stringent maintenance schedule. By tracking critical KPIs, companies can determine the ratio of planned maintenance activity to breakdown maintenance activity. Focusing maintenance resources on high-risk assets and performing reliability-centered maintenance (RCM) studies on them should result in a downward trend of breakdowns.

Q. What are some potential key differentiators to look for in an asset management solution?

- A. Due diligence is required, and it is essential to have a good basic understanding of current EAM capabilities, where the company wants to be in the future, and what to look for to best get there. The value of a good EAM solution is that it will help companies achieve a higher level of asset capacity for production and a reduction in energy consumption when assets are properly maintained. An EAM solution should secure and track all the financial transactions made locally and internationally. Many companies mistakenly believe that using one of the massive EAM solutions can guarantee this control and that a best-of-breed solution may incur problems with integration. One issue that must be considered is the TCO of a solution to ensure the company is getting high value for its investment.

Depending on the supporting IT environment, the EAM solution can and should be constructed with the goal of creating a comprehensive enterprise IT framework designed for asset management. This framework should be based on standards and best practices that allow for the easy addition of new assets and technologies, readily adapt to change, and support compliance requirements. There are many key differentiators that distinguish a well-thought-out asset management solution. The ability to expedite change management, support for industry standards such as ISO 55000, and reliability analysis to show projected life span and failure dates are among the top features. Other important features include the ability to extend the full functionality of applications to mobile devices, flexibility of deployment — SaaS, hybrid, hosted, on-premise — that can reduce system administration complexities and drive out costs, and ease of integration with asset monitoring devices and technologies. Ease of collaboration between all system stakeholders can be facilitated via a centralized application that can also manage several sites to track cost and equipment location and

history and enable work across multiple countries, languages, and currencies. Quick implementation and actionable analytics round out the features of a best-in-class solution.

It is critical to develop a plan and a road map for how the vision will be accomplished. IDC Energy Insights recommends the creation of an architecture that shows how technologies, applications, and processes will work together to achieve the goals determined in the business strategy. The road map should be designed in conjunction with the plan to show which products and services will be implemented over time.

Oil and gas companies need to select vendor(s) with proven industry experience. There are many vendors in the market, and due diligence must be applied to vendors that offer complete asset management solutions and also have the skills and domain knowledge required for successful execution and can provide fast resolution to any issue to minimize system disruptions. Finally, oil and gas companies should select a vendor that can show innovation and leadership by continuously updating its products for robustness and moving toward the 3rd Platform — IDC's term for the next generation of computing built around big data, analytics, social, and mobile technologies.

Q. How will asset management drive value for an oil and gas company in the future?

- A. A good EAM solution is critical to running a successful oil and gas company. Asset management is at the core of this asset-intensive business, and oil and gas companies cannot operate safely and effectively without it. Most asset management environments have grown sporadically over time and have many independent moving parts that have been cobbled together; these systems require an overhaul to ensure the various parts are tightly integrated and to establish good feedback mechanisms for continuously managing change and adding new capabilities. A framework is needed that is strategically designed to maximize the life span and reliability of key assets. This prevents unexpected operating costs and allows strategic maintenance to be done at times when operations will be least disrupted.

An effective asset management solution will help a company manage risk and security issues, as well as enable adherence to compliance requirements. In addition, an asset management solution should be able to perform cost analysis on assets or systems to determine which have better uptime and consume less energy as well as provide a history for FMEA analysis and reliability metrics to focus engineering and maintenance on improving the maintenance programs for critical assets. Decision support and performance management are enabled by capturing data and providing visibility into all areas of the operations. In addition, an EAM system should map all business processes to get full control of transactions. It is also possible to deploy an EAM system that allows companies to manage operations, finance, budget, and investments with one solution, which can then scale to move from exploration (finance and procurement only) to production (addition of inventory and maintenance). Finally, an EAM system should integrate with SAP, Oracle, or other corporate financial solutions in a secure way.

Effective asset management can improve financial performance by optimizing the operations of physical assets and can identify and eliminate the bottlenecks that constrain production levels. The result is asset performance that reaches desired levels in a more consistent and predictable manner. Oil and gas companies face dramatic challenges, and asset management is at the core of business operations, requiring special attention to control costs and improve profits. Oil and gas companies must make investments to integrate all the necessary ingredients to efficiently and effectively run operations with continuous feedback mechanisms for managing and adopting change.

ABOUT THIS ANALYST

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