Cool Vendors in Oil and Gas, 2015

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Analyst(s): Rich McAvey, Leif Eriksen, Morgan Eldred

The recent decline of oil prices has amplified the need to rapidly improve efficiency and effectiveness in upstream oil and gas companies. This report highlights selected Cool Vendors that are bringing innovative capabilities to help upstream CIOs and IT leaders accelerate progress.

Key Findings

- Integrated planning solutions are emerging to reduce the customization and integration costs associated with traditional upstream planning deployments.

- Cloud-based solutions can help upstream oil and gas companies manage the complexity of large capital projects requiring coordination of multiple resources and systems.

- As-built 3D models of operational assets can be connected to various sources of asset data to increase productivity, improve training and improve safety.

- The cost of using high-performance computing systems and software will benefit from the emergence of cloud-based technical computing service marketplaces.

Recommendations

Upstream oil and gas CIOs and IT leaders should work with the business to:

- Improve resource deployment, operational effectiveness and business agility by integrating planning across asset and functional siloes.

- Identify opportunities to use digital technology to reduce the cost and complexity of major capital projects.

- Create as-built 3D models of operational assets, and connect the models to sources of asset data (such as EAM systems, training manuals and inspection protocols) to improve asset management effectiveness and efficiency.

- Initiate tactical testing of external high-performance computing (HPC) resources for reservoir modeling.

Analysis

This research does not constitute an exhaustive list of vendors in any given technology area, but rather is designed to highlight interesting, new and innovative vendors, products and services. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

What You Need to Know

Operational excellence is a strategic business priority for the upstream oil and gas industry, and the decline in oil prices in 2014 elevated the need for urgent progress. This has amplified demand for digital technologies capable of:

- Accelerating the completion of major capital projects.

- Improving the efficiency of high-cost, seismic modeling.

- Organizing the information on operating assets.

- Integrating planning and optimizing operations.

This report highlights a selection of creative innovations from emerging vendors that are finding their way into the industry.

3esi

Calgary, Alberta, Canada (3esi.com)

Analysis by Rich McAvey

Why Cool: 3esi is cool because it is bridging the many organizational siloes within upstream oil and gas companies and enabling broad optimization of planning and operations. The decline in oil prices in 2014 has made capital efficiency a top business priority, and current levels of resource productivity are unacceptably low across the industry. To plan operations, most upstream companies currently rely on expensive, custom-coded solutions, which are rigid and inflexible, or on spreadsheets, which are slow, unreliable and resource intensive. Consequently, upstream companies have trouble responding to dynamic market conditions. To address this problem, 3esi provides an integrated planning solution that has been designed specifically for the organizational and operational challenges of global upstream oil and gas companies. 3esi combines configurable business planning software with business consulting expertise to help upstream operating companies establish integrated business planning processes across independent organizational siloes.

3esi was founded in 2005 and is a privately held Canadian corporation headquartered in Calgary. It has regional offices in the U.S., U.K., Spain, Australia, Colombia, Middle East and New Zealand.

3esi offers a set of modular planning solutions. Each module is tailored to the specific needs of one aspect of upstream planning, while all the modules are designed to integrate with one another. The core module provides a foundation for integrated business planning and enables shorter planning

cycles (powered by a single dataset for both short-term and long-term plans), elimination of complex spreadsheets, evergreen project portfolios, comprehensive reporting of progress, forecasting for key variables (such as hydrocarbon production and capital commitment), tools to support trade-off decision making, and scenario planning. A separate module focuses on integrated activity planning and enables activity prioritization based on value metrics, management of backlogs, predictable activity scheduling, change management for high-frequency and high-complexity schedules, and has tools to relieve schedule conflicts and bottlenecks. An additional module addresses the unique scheduling requirements for unconventional upstream assets (e.g., shale, oil sands and heavy oil) that include asset-specific elements, such as type wells, type curves and configurable pad modeling.

Challenges: 3esi will face marketing challenges with upstream customers. Its distinctiveness flows from its ability to span multiple levels of organizational siloes (from high-level portfolio planning to low-level activity planning), and most oil and gas companies do not have an appropriate buyer or procurement governance for this range of activity. In addition, 3esi will face competition from vendors with established positions in one part of an upstream company (such as an individual business unit or functional area) seeking to broaden their positions. While early adoption by newly formed entities, such as joint venture operating companies, might provide a faster path forward, these efforts will be hindered by the slowdown in investment following the oil price declines in 2014.

Who Should Care: CIOs and IT and business leaders that support or manage business or activity planning for upstream companies looking to improve deployment of capital and resources, operational effectiveness, and business agility should consider 3esi.

Coreworx

Toronto, Ontario, Canada (www.coreworx.com)

Analysis by Morgan Eldred

Why Cool: Coreworx, founded in 1997, provides cloud (and on-premises) project information solutions with a strong focus on interface management. This is cool because it promotes efficiency, productivity and simplicity across the large and diverse teams working on complex upstream major capital projects (MCPs). MCPs range from $500 million to more than $40 billion and involve coordination of vast amounts of information between multiple parties. The company's project information solutions deliver standardized work processes that are developed specifically to manage the thousands of complex interfaces, work processes and pieces of information critical to successful project execution.

Specific processes supported are the management of interfaces, contracts, changes, technical queries and communications, and project information control. Coreworx solutions help clients address cost, schedule, compliance, quality, safety and litigation risks in major capital projects. Coreworx has actively been promoting the use of interface management within MCP and participates in the nonprofit consortium Construction Industry Institute (CII), working with CII partners to publish best-practice papers and implement best practices within its solutions.

Challenges: As a smaller vendor, Coreworx faces competition from large-scale ERP or project information management vendors that offer planning solutions or engineering information systems that target major capital projects. With reduced oil prices creating a slowdown in major capital projects in 2015, Coreworx will face increased competition within a slowing market in the near term. However, new projects will eventually start again to ensure that production meets demand, and Coreworx should be well-placed to provide value for firms looking to deliver projects more effectively.

Who Should Care: CIOs and business and IT leaders that support or manage major capital projects who are looking for interface and information management solutions that improve the delivery of major capital projects should consider Coreworx.

INOVx

Irvine, California (www.inovx.com)

Analysis by Leif Eriksen and Morgan Eldred

Why Cool: INOVx provides a solution that integrates current and historical information about operational assets with 3D virtual models of the assets. The solution helps improve the safety and reliability of operations by changing the way users, such as operators, technicians and engineers, visualize and interact with asset information.

Linking 3D models to information about the underlying components or objects allows users to drill down and find information such as inspection history, maintenance history and even maintenance procedures. The 3D model in this scenario becomes the primary tool for accessing asset information, making decisions and managing operational risk. Eventually, the 3D database replaces traditional documentation, such as inspection isometrics or isolation procedures, as it becomes the primary environment for managing and maintaining operational assets. It also can be used as a training tool for operator (inspection) rounds and maintenance procedures, including lock-out and tag-out. INOVx 's solutions enable this by supporting leading computer-aided design (CAD) formats and integrating with enterprise asset management (EAM), asset performance management (APM), engineering information management and other sources of operational data, such as data historians.

INOVx also addresses the perennial issue of keeping 3D models current by employing 3D-laser-scanning technology, which can deliver accurate, as-is models of critical infrastructure within weeks or, even, days. While this capability is not unique, INOVx has demonstrated the capability to create and deliver these models cost-effectively, thereby lowering the barrier to keeping the models "evergreen."

The company was founded in 1999, is privately held, with offices in North America and the Middle East. According to the company, it has experienced annual growth rates of approximately 40% since 2010.

Challenges: INOVx has come up with an innovative way to manage operational assets, yet it could face competition from the larger vendors that provide integrated engineering information and 3D

modeling solutions. These vendors may choose to expand their target market to include using 3D models for managing and maintaining operational assets. INOVx could also face challenges from vendors who provide laser-scanning solutions to other industries, such as those supporting utility transmission and distribution. In addition, there is the ongoing challenge of supporting data integration with a diverse set of data sources.

Who Should Care: CIOs and business and IT leaders that support, maintain and manage operational assets and are looking to improve reliability and reduce operational risk should consider INOVx.

UberCloud

Los Altos, California (www.theubercloud.com)

Analysis by Morgan Eldred

Why Cool: UberCloud, founded in 2012, is a discover, try and buy technical computing service that uses a crowdsourcing marketplace to address HPC requirements for sophisticated engineering and scientific software, such as Ansys. This is done by providing computing power through a seamless migration to the cloud, and containerizing software and making it ready on demand.

The company takes a crowdsourcing and social networking approach. More than 2,500 registered users are partaking in 167 experiments where real data is taken to applications on the cloud, resulting in the publication of 50 case studies and 120 articles. The UberCloud ecosystem consists of three aspects:

- Discover, where tests are conducted

- Try, where solutions are provided for test purposes

- Buy, where full solutions are available through on-demand licensing

The company has agreements with Intel, Nvidia and Microsoft Azure, to name a few.

For now, UberCloud provides on-demand software solutions for Ansys and Autodesk in oil and gas, along with HPC and graphics processing unit (GPU) technology infrastructure. Unlike other providers that offer a single-cloud solution, UberCloud provides customers the freedom to select components that have been tested to ensure efficiency. Another clear differentiator is the discover option, where firms can try for free (or for a minimal cost) experiments for any application that requires either high-end visualization graphics or computing power to run complex simulations.

Challenges: The major challenge UberCloud faces is in creating relationships with oil and gas software providers. The company will crowdsource infrastructure and support users for installing its solutions in the cloud. However, it will only approach a new vendor after an UberCloud customer has requested adding them to the environment. The highest level of service offered by UberCloud is a preconfigured solution that supports on-demand, pay-as-you-go licensing. To achieve this higher level of service, UberCloud needs to have a formal relationship with the software provider.

Who Should Care: CIOs and business and IT leaders that support or use sophisticated engineering or scientific applications and are looking for cloud solutions to offer financial and/or innovation benefits should consider UberCloud.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Planned Research for the Oil and Gas Industry, 2015"

"Roundup of Oil and Gas Research, 2014"

"Hype Cycle for Upstream Oil and Gas Technologies, 2014"