Improving Inventory Management WITH Global Research and Analysis

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Evaluating inventory practices and setting benchmarks for inventory levels and processes can help international oil and gas companies establish a foundation for inventory reduction and better understanding of their position in the global marketplace.

Managing inventory levels is a critical activity for any upstream oil and gas company. The task becomes particularly difficult, though, when an operator has warehouse operations spread around the world.

Benchmarking against industry practice is one commonly used tool for determining optimal inventory levels. Not surprisingly, however, competitors are reticent to share such information. An alternative approach, comparing the practices of other industries, fails to account for a host of external and internal issues unique to the oil and gas business.

As part of a larger effort to reduce inventory and maintain its worldwide competitive position, a global oil and gas company conducted an independent analysis to help it understand the inventory practices of its remote ware-

houses. As one of the world's largest operators, the company has operations and warehouses spread across all inhabited continents. It is engaged in all aspects of the industry, including exploration and production; refining, marketing and transportation; chemical manufacturing and sales.

Leveraging their understanding of the upstream industry's unique pain points, the independent survey helped the company collect data from its various locations and those of as many other companies as possible. The data was then analyzed to help determine its competitive position globally, provide a baseline for improvement and highlight areas of opportunity.

Examing Inventory's Role in Global Competitiveness

The 200-point benchmark survey leveraged supply chain solutions, as well as leading finance and oil and gas methodologies. The approved data sets were then uploaded into an online benchmark tool, which distributed the survey to all identified participants.

The survey was used to poll each of the participating locations to gather detailed information about daily warehouse activities, such as inventory management, replenishment and investment recovery, and operations they support in order to standardize the results. The intent of the survey was to provide quantitative data that could be segmented and normalized for comparison. Questions encompassed business environment, scope, budget, production, process, technology and approach topics.

In just four weeks, the toolset collected 90 percent of the data from the companies' remote upstream locations around the world. To serve as a reference point, additional participants contributed similar data from upstream operations in the United States, as well as from all downstream refineries.

Despite geopolitical unrest, particularly in the Middle East, and dealing with the normal industry issues associated with recent mergers, the survey team collected data from more than 50 warehouses located in 17 countries on all continents. The companies' warehouses, which contained an average of $50 million worth of inventory, supported local activities and were staffed more than 95 percent by the local population. In addition, data was collected from an additional seven other major companies in the industry and related it to $1.41 billion worth of inventory.

To assist in the process of validating and analyzing data and to assist in understanding more about inventory practices within the company's operations, the survey team developed an inventory data analysis software tool. The tool helped the company by providing greater insight into the inventory characteristics within the company's warehouses and presented an additional dimension to the analysis.

Transforming Information into Knowledge

The benchmark study was completed in just four months. The company and the other participating companies have considered it to be the most in-depth and comprehensive analysis of their international upstream warehouse and inventory operations to date.

The key findings of the survey are also relevant to any company that maintains warehouses in remote or "supply chain challenged" locations. A few major findings identified:

- High correlation between production and inventory—for every extra barrel of oil produced per year, the companies had a corresponding increase in inventory in these remote warehouses versus a decrease.
- Warehouse management generally does not follow basic principles for operating a warehouse, such as reviews of inventory turns,

activity-based cost analysis, surplus stock, dead and idle stock, minimum and maximum levels, slow-moving inventory, fill rates, accuracy, and shrinkage.

- Warehouse activities were not integrated with operations, engineering or maintenance.
- Numerous locations focused on their own internal initiatives and metrics and failed to include external influences on inventory.
- Warehouse management had limited knowledge and/or access to basic data, such as size of the warehouse, operating annual budget or inventory turns, and it failed to perform routine analysis.
- Few warehouses resolved issues proactively by working with other departments to reduce SKUs, address slow-moving inventory or review overall levels for targeted critical commodities.

In addition, while maintaining the integrity of each company's response, the resulting reports compared production ratios to inventory and revealed the company's competitive position in the marketplace, contrasting current operations with industry and leading practices.

The company's executives used the reports as a foundation to implement an inventory improvement initiative. Several low-tech recommendations for improving performance included:

- Providing "Warehouse 101" education to respective remote locations so they understand basic warehouse principles.
- To assist in the process of validating and analyzing data, an inventory data analysis tool was developed and used world-class finance methodologies to collect data.
- Creating simple software tools, used in conjunction with a company's enterprise resource planning system, to help warehouse employees perform the data analysis needed to track operations and performance.
- Integrating their maintenance, capital project expenditures and supply chain functions (e.g., sourcing and inventory management) with the operations up-front.
- Leveraging existing inventory and balancing it with a standardization effort that includes key stakeholders, such as suppliers, engineers and warehouse employees.

Based on the information the study provided, the company now has a much better understanding of its competitive upstream position and a more informed perspective of its internal operations. It has been able to leverage the results to more than 12 inventory initiatives in its upstream operations. And it has a powerful tool to evaluate the company's progress toward improved inventory management in the future.

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