

Oil and Gas Investor

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Wattenberg drillers spy new potential on the horizon.

CUSTOMER-ANCHORED SUPPLY CHAINS

The downturn is a good time to take a new look at the intricacies of the supply chain and to invest for competitive advantage.

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Oil and gas company asset managers and procurement teams, oil service company field personnel and supply chain organizations, and all their vendors, are part of a single chain of processes. These link together, within companies and between companies, and are purposed to create value by extracting hydrocarbons from reservoirs and delivering products to the end consumers. In total, the processes and the companies comprise the hydrocarbon supply chain.

Supply chain performance is critical to the economic health of the industry, and sustainable improvement in finding and development costs depends on tight coordination between every member of the supply chain. But, we believe the hydrocarbon supply chain lags its peers in other sectors. Wise and targeted investment in the supply chain can be a source of competitive advantage.

An overlooked opportunity

Unfortunately, the oil and gas industry has under-invested in the supply chain area, and it is an often-overlooked discipline in both good

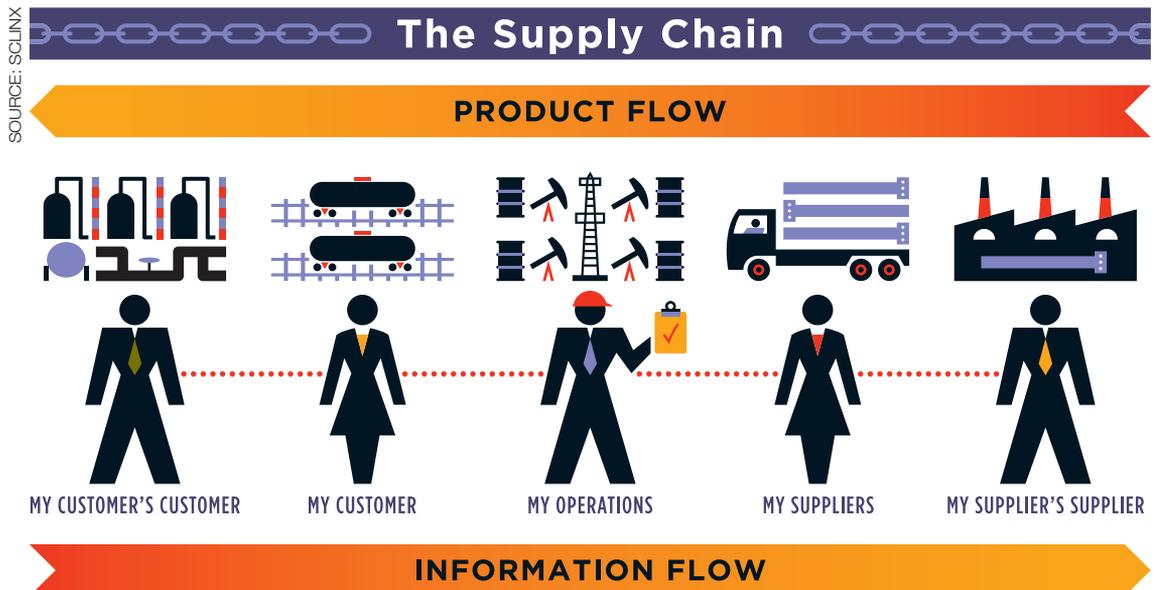


times and bad. Consider what typically happens when the industry is booming, energy prices are high and money is available to solve almost any problem. The industry can afford more people. High salaries can attract more highly skilled workers. Service companies can develop more advanced technology, and operators can afford to put it to work in their wells.

The downside of a period of high profits is that many executives are lured into tolerating inefficient and outdated business processes. Managers directly responsible for the supply chain focus more on expediting past-due orders and expanding capacity to stay ahead of expected demand growth, than on creating sustainable competitive advantage.

Inventory accumulates all along the hydrocarbon energy chain to compensate for unreliable and long lead times, tying up cash that could be used more productively elsewhere. Management rationalizes that high inventories are acceptable as long as the company meets its profit objectives.

In the downturn, the industry follows a standard playbook based on actions taken during



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prior cycles. E&P companies lower the price deck they use to evaluate projects, they high-grade their prospects and approve only those with the best return. Lower activity levels quickly impact service company revenue and profit, so they trim discretionary spending and cut employment to try to protect margins.

Procurement teams at both E&Ps and service companies work to hold the line on their margins by demanding price concessions—so profits are reduced throughout the supply chain. Spending priorities shift. R&D spending is often given priority as an investment in the future while funding for most other functions is cut.

Supply chain managers focus on cutting costs to compensate for lower fixed-cost overhead absorption. Instead of investing to improve core processes, companies reduce supply chain staff, yet expect the smaller team to improve the bottom line using the same inefficient and outdated procedures.

While companies should not pay more than the market rate for any product or service, and should not employ more people than they need, squeezing vendors and cutting staff alone will not build sustainable competitive advantage. Investing in improved supply chain operations can help build competitive advantage and have a dramatic impact on performance by improving lead time reliability, shortening lead time, reducing inventory and freeing up stranded capital. Oilfield companies can create competitive advantage in their supply chains by taking six important steps.

Think holistically

The hydrocarbon supply chain is badly fragmented. Each member in it tries to do its best, but often in isolation. The supply chain extends from the reservoir to the gasoline pump, and from the iron mines to the producing wellbore. Unfortunately, many participants recognize only a narrow portion of the supply chain and don't appreciate the impact their roles have on the broader supply chain. In the narrowest cases, service company managers see three entities—the customer, “us,” and “them.” You might overhear them saying, “I know what my customers want and no longer need to ask them. I (“us”) am doing everything I can do to deliver the product on time but my supply chain (“them”) is not supporting me.”

It is not necessary to understand what every member in the hydrocarbon supply chain does, but a company must understand what its *suppliers' suppliers* need to be successful, and what its *customer's customers* need to achieve their business objectives. A company must be able to articulate, as well as its customers can, what its customer's customers require from the supply chain. Similarly, they must be able to articulate what their supplier's suppliers need to be able to service them.

Taking ownership of the supply chain across

this spectrum drives each company to understand and align its operations with the needs of the broader hydrocarbon supply chain.

Segment by customer-applications

Companies providing multiple products, to multiple customers, in multiple applications and multiple geographies, can face considerable challenges in understanding the end customer's needs. We believe the concept of a *customer-application* can simplify the task of identifying end customer requirements in these complex markets.

A customer-application is a group of customers with similar buying behavior participating in an application with similar requirements. “Majors in deepwater” and “independents in oil shales” are examples. Customer-applications organize the market into segments with similar requirements and help set the foundation of the customer-anchored supply chain.

When a company segments its markets only by product line, geography, or manufacturing and procurement resources, it is impossible to have a clear picture of each end customer's needs. Instead of strategically focusing on customer priorities, the company may measure supply chain performance based on production volume quotas or unit cost—instead of what the end customer actually values.

Segmenting by customer-application simplifies and focuses the company's supply chain strategy with insights into the types and combinations of products, their technical specifications, and required lead times, which the E&P customer needs to successfully develop its asset. Without this segmentation and simplification, the company cannot hear the voice of its customers, a necessary prerequisite for supply chain strategies that can create competitive advantage.

Incorporate the customer's voice

The third step is to listen to the voice of the customers' customers. Executives and managers must overcome the assumption that they already know what end customers want. Supply chain managers should engage with their customers' customers to understand what they value in enough detail to design a supply chain with the right strategy, organization, values and KPIs to deliver what they need. The *customer-anchored supply chain* can articulate what it believes its customers value and expect from their suppliers, and it documents its performance and the performance of its competitors.

Every supply chain strategy must include goals in three areas. First, excellence in health, safety and environment (HS&E) and quality is a baseline requirement. Second, a set of internal goals is needed to drive efficiency and to be good stewards of the shareholder's investment. And third, a set of external goals will anchor the supply chain to the customer and build competitive advantage. Too often, the external

goals are poorly articulated or missing completely from the supply chain's strategic goals.

Sales and operations planning

Sales and operations planning (S&OP) is the fourth critical supply chain process for delivering competitive advantage. S&OP integrates the business's strategic plans and supply chain's strategic plan, demand plans, inventory plans, and supply or resource plans into a single, unified business plan. The oil and gas industry has struggled to implement effective S&OP processes.

The traditional approach to S&OP is to gather sales forecasts by geography and to balance supply and demand in a series of product line-oriented executive S&OP meetings. A clear voice of the customer is never presented because each meeting deals with a single product line rather than the strategic needs of customer applications. Taking this approach, the executive S&OP meetings are dominated by supply chain issues; executives from other disciplines in the company soon perceive the S&OP process as the supply chain's planning process rather than the pinnacle of the business's planning process.

An alternative approach is to organize the S&OP process by customer-application. Sales and field operations develop their forecasts including detail by geography, product line and customer-application. The supply chain looks at the same data, focusing on supplying the manufacturing and vendor resources required to meet the demand plan. Gaps are identified, and solutions are explored and addressed in the executive S&OP meeting. The voice of the customer is now clear, and the S&OP process can focus on the customer deep into the supply chain. Senior executives are more likely to engage now that real customer issues are being discussed instead of arcane supply chain issues.

Embrace complexity

Effectively managing complexity and customization is critical for the hydrocarbon supply chain. With too much customization, product configurations proliferate, adding cost and making it impossible to forecast demand. Many supply chain managers advocate standardization to reduce cost by limiting engineering support and by manufacturing larger lot sizes.

Standardization is a good idea, up to a point. If customers do not perceive a value associated with customization, suppliers should work to eliminate it.

The problem is that customization matters. A small increase in ultimate recovery of the hydrocarbons in place can make a huge difference in reservoir economics. Reservoirs have unique physical properties, and competing teams of oil company and service company engineers work hard to provide unique, creative, and technologically advanced solutions to deliver better performance based on each reservoir's

characteristics.

Given that customers can gain real value from customization, it is incumbent on the supply chain to embrace complexity. Advanced planning techniques such as providing for features and options on standard base products enable the supply chain to manufacture parts to forecast. The parts can then be configured and assembled-to-order, providing customization at lower prices and in short, reliable lead times. Forecasting can be simplified through the use of planning bills that can be used to calculate the requirements for wellbores or groups of wellbores in a customer-application.

Managing the links

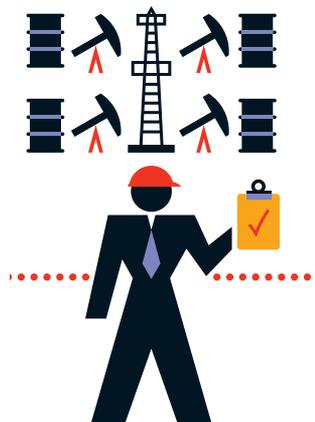
We described the energy supply chain as a chain of processes, linked together, within and between companies, with a single objective of extracting hydrocarbons from the reservoir and delivering products to the end consumer. Taking a holistic approach to the supply chain enables us to understand better what it does and helps us align our processes with it. The sixth step in improvement is to manage the links between the processes, because the output of one process becomes the input to the next process.

These links can be described as either *tight* or *loose*. Tight links occur when the processes are well understood, their output is of high quality, and their performance is reliable. To deliver the same service level the chain of loosely linked processes will require higher inventory, longer lead times, more information and increased cost. The industry must manage all the links in the hydrocarbon supply chain to make them as tight as possible to lower costs, reduce lead time and free up capital stranded in inventory.

The payoff

In this downturn, all members of the hydrocarbon supply chain could benefit from making wise investments to anchor each step of the supply chain in their customers' customers. Concepts like customer-applications help focus strategic goal setting and sales and operations planning on achieving results valued by customers. The potential rewards from investing in the supply chain are substantial in terms of shorter and more reliable lead times, lower inventory and ultimately lower finding and development costs. □

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