

TRANSFORMING THE SUPPLY CHAIN WILL DEFINE SUCCESS IN UPSTREAM

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Excess fast production from oil shales and slowing demand growth because of mobility transition from internal combustion engines to electric vehicles is leaving the oil and gas market in a difficult economic position.

Meanwhile, share prices of exploration and production oil companies are slipping as industry revenue declined 8.1 percent on an annualized basis over the past five years to \$3.3 trillion. Major international producers have seen their valuations drop an average of 35 percent per month over the past year.

The market has now shifted into using capital efficiency, as opposed to changes in production, as an indicator of value, making the focus on efficiency of upstream a more meaningful indicator of future success more than ever before.

Other industries that have gone through similar challenges moved to more sophisticated supply chain practices through the use of digitalization, dramatically reducing cost and improving service levels. Upstream operators that take on the challenge to transform their supply chain practices will be in a better competitive position going forward.

Oliver Wyman estimates that through a rigorous redesign, oil companies could cut existing supply chain operating costs by 20 to 30 percent.

In a recent supply chain transformation program in deep water Gulf of Mexico, the producer was able to reduce total spend by nearly 25 percent, while improving their on-time and in full-service levels.

How do producers achieve these kinds of reductions? This level of performance improvement is driven by multi-lever programs that bring latest practices from other industries to upstream oil and gas companies. Putting together a team that represents internal customers (drilling, projects, production and maintenance) and delivery support (planning, sourcing, procurement, logistics, and digital), along with practice experts to co-design, test, and roll out a new way of working to enable a competitive supply chain.

Oliver Wyman has identified five key levers and two enablers to build a more competitive upstream supply chain

TRANSFORMATION OBJECTIVES



Improve Service to Facilities and Ensure Availability

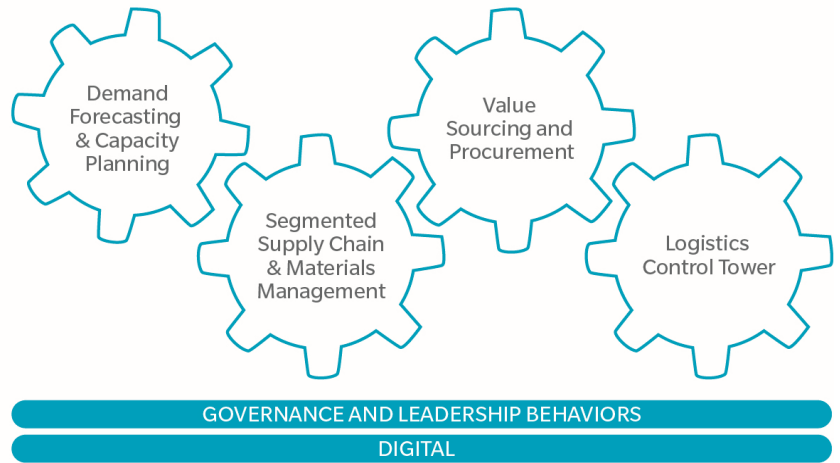


Reduce Cost and Optimize Supply Base



Enhance Capabilities and Manage Performance

LEVERS AND ENABLERS



Implement demand capacity-optimized plans

Demand capacity-optimized planning integrates plans from projects, drilling, production and maintenance for materials, services, and personnel requirements at field locations. It then evaluates the capacity required to deliver the demand needs and generates optimization scenarios to meet the demand at the lowest possible cost and highest productivity. This means walking away from a “delivery mindset” to implement “collaborative structures to optimize plans for lowest total cost while adhering to schedule.” This requires teams collaborating to develop integrated medium-term, short-term, and near-term demand as well as capacity plans. This kind of structured, cross-disciplinary approach to planning and projects provides an operational overview of supply chain needs and is more likely to produce stable and executable schedules, higher crew productivity, reduced logistics costs, and fewer self-generated emergencies caused by lack of coordination or resources.

Segment the supply chain

Most upstream operators take a one-size-fits-all approach to fulfilling supply chain needs, despite the fact that some deliveries to a platform are urgent, such as a replacement component for a failed pump, while others are more predictable. As a result, companies often spend too much time processing predictable items for which delivery could be easily automated, which would allow for more time and attention to be allocated towards critical high-ticket services and materials with higher demand variability.

The potential for disruption often leads to hoarding of some essentials, such as certain chemicals, even though their use is predictable and could easily be automated. A smarter approach is to split supply chain needs into several segments, based on the variability of demand (how frequently they need to be taken to the platform) and the magnitude of spend. **Lower variability / higher spend** items like chemicals, fuel, catering (also known as the **Efficient Segment**) can be streamlined by working directly with vendors and providing transparency of inventory and consumption rates. Similarly, **higher variability / lower spend** items like nuts, bolts, gaskets (also known as the **Value Segment**) can be automated through a virtual two-bin Kanban system connecting inventory information between vendors, local distribution centers, and field facilities. This allows for more time to be dedicated to **higher variability / higher spend** items and services (also known as the **Planned Segment**).

SUPPLY CHAIN POLICIES AND PRACTICES FROM SEGMENTED SUPPLY CHAINS

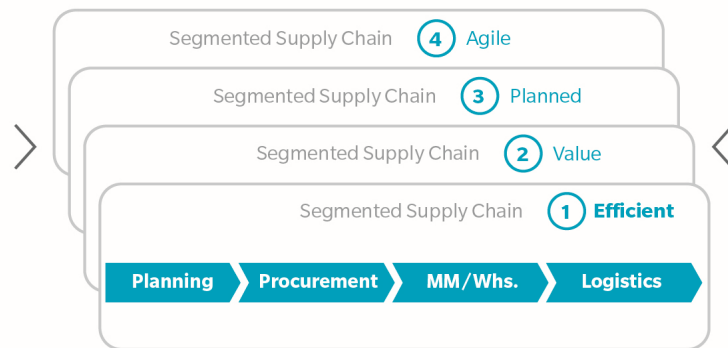
SEGMENTED PRODUCT AND SUPPLY CHARACTERISTICS



Differences by:

- Supply responsiveness
- Product Characteristics

"SEGMENTED SUPPLY CHAINS" (SSC) OPTIMIZING ACROSS SUPPLY CHAIN FUNCTIONS



DIFFERENTIATED BUSINESS REQUIREMENTS



Differences by:

- Demand patterns
- Asset type – Production Asset, Production Asset + Drilling, MODU

CROSS FUNCTIONAL ALIGNMENT AND DIFFERENTIATED DESIGNS FOR SUPPLY CHAINS

In a recent transformation, Oliver Wyman found that 80 percent of transactions and 95 percent of SKUs corresponded to Efficient and Value segments that can be streamlined and automated to significantly reduce supply chain churn and free up management time for the more important, planned segment.

Improve commerciality of sourcing and procurement

Currently, the contracting and procurement functions are in the development process in upstream. A large focus has been correctly placed in areas where the greatest spend is allocated, such as mega projects and drilling, however significant work remains particularly in production and maintenance.

Identifying key attributes by category spend, understanding supplier utilization, using outside in cost analysis, and appropriately managing demand, and supplier performance are powerful levers to improve. However, aligning contracting strategies with the business can unlock a significant portion of the value. Enabling a shift from Time and Materials (T&M) to performance- and outcome-based contracting can drive significant competitive advantage. In a recent program, Oliver Wyman found that nearly 90 percent of spend in services and materials for Production and Maintenance were on a T&M basis. A shift to outcome-based contracts can produce better results and reduce costs.

Establish a logistics control tower

Using material and service flows to serve oil and gas assets requires complex coordination across material suppliers, service companies, land logistics, warehousing, marine vessel operators, and facility teams. Frequent problems in upstream oil and gas operations are generated by ad-hoc requests, the absence of reliable ground delivery, flights and boat schedules, and uncoordinated planning. The control tower enables the alignment of short-term planning and near-term scheduling to ensure logistics coordination, higher utilization of logistics resources, and meeting facility service requirements.

A systematic review of land, air and sea schedules, visibility of wait times and turn-around times, as well as validation and coordination of urgent requests are some of the functions the control tower executes at regional and field levels. Feedback from the Control Tower is incredibly valuable to help change demand behaviors in misuse of logistics resources. In a recent project, Oliver Wyman identified potential reduction of nearly 38 percent of total logistics cost by managing demand to level load, optimizing shipping schedules and routes, and reducing wait and turn-around times.

Create a materials management office

Upstream operators can easily manage separate inventories by business (projects, drilling, production, maintenance) across locations by using different systems. Furthermore, the lack of a returns process and trust in delivery times builds unnecessary levels of inventory throughout the chain. In a recent program, Oliver Wyman helped to create a central material management office to drive visibility under a single system, connect its warehouses, and maintain governance over inventory. This enabled validation of new orders as opposed to drawing from inventory, reduced lead times with higher visibility of material across warehouses, and a reduction of over \$280 million in inventory stock. Additionally, feedback from the materials management office is key to meeting industry standards for materials used and driving proper use of segments in supply chain.

**There are two important enablers of such transformations:
change management and digital enablement**

Change management

Changes in leadership behavior, active governance, and humble engagement with front line operations will define success or failure. This requires leaders of structural silos to come together and move from a business that shares responsibility to one that works together to optimize solutions. This generally requires significant work to establish trust and align.

Digital enablement

Digital enablement in upstream supply chains has meant significant ground work being done in parallel to implementing newer solutions. We found that unifying planning and inventory systems, establishing credible and accurate digital Bills of Materials, standardizing denominations for materials and SKUs, and establishing signals for inventory levels help to establish a framework for more advanced applications. Similarly, enabling newer, more efficient channels like supply portals formalizes approved materials, codification, and control over spend – as opposed to back channel ordering and refunding through expense reports. More advanced applications on logistics optimization of routes and schedules can significantly reduce fleet size and increase overall utilization.

Upstream operators - particularly in offshore and unconventional - should think of supply chain as one of the most important elements of their competitive advantage. We can take you from solution design to implementation and value capture.

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation.

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