Driving Performance in the Oil & Gas Supply Chain

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SCC launched a unique study to understand the supply chain performance of O&G Infrastructure companies

Survey participants: Reached out to over 380 O&G Infrastructure companies, 25 signed up, and 13 submitted their response

13 participants who provide equipment to the Oil & Gas Industry

- Down-hole Motor Equipment
- Oilfield Rental Tools
- Oilfield Thread Compounds
- Drilling Bits
- Flow Control Equipment
- Seismic Equipment
- Well Equipment
- Exploration Solutions
- Subsea Equipment
- Drilling Equipment
- Surface Products
For context, we compared the performance of O&G Infrastructure companies to a subset of Industrials.

We looked for a subset of companies making complex, engineered equipment in 23 companies in a number of markets.
It’s a healthy market for Oil & Gas Infrastructure companies...

Infrastructure companies are just as **profitable** as the Industrial benchmark companies...  ...but **growing** much faster!
However, it’s likely that improving supply chain and operations performance will lower COGS and increase profitability.

Infrastructure companies are spending more on Cost of Goods Sold (COGS):

- Raw material costs and freight
- Manufacturing conversion costs
- Warehousing costs
- Shipping costs to customer

Supply chain & operations practices can drive lower COGS:
- Forecasting
- Inventory Management
- Supply Planning
- Transportation Optimization
- Warehouse Management
What are O&G Infrastructure priorities?

- Industry-wide, companies have distilled their focus areas for supply chain on five key attributes
- The priority of these features, in performance relation to competition, establishes strategic priorities
- O&G have special emphasis on a few key areas

<table>
<thead>
<tr>
<th>Reliability</th>
<th>On time? Complete? Undamaged?</th>
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<tbody>
<tr>
<td>Responsiveness</td>
<td>From Customer Request to final acceptance</td>
</tr>
<tr>
<td>Flexibility</td>
<td>How long to scale up? How expensive to scale down?</td>
</tr>
<tr>
<td>Cost</td>
<td>Cost of Processes? Cost of Goods Sold?</td>
</tr>
<tr>
<td>Assets</td>
<td>Working Capital? Return on Investments?</td>
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Your customers are emphasizing supply chain and operations performance as a requirement

O&G Infrastructure customers prioritize quality, on-time delivery, and order fulfillment lead time as the most critical performance metrics

Ranking of metrics that O&G Infrastructure companies feel customers focus on:

1. Quality
2. On-Time Delivery
3. Order Fulfillment Lead Time
4. Capacity
5. Total Delivered Price

With most Infrastructure companies believing quality is their competitive advantage, supply chain performance becomes the real differentiator!
Delivery Performance should be a top improvement priority

On-time delivery performance is a top customer priority
Lead time reduction is also a priority, though it often requires rethinking operational structure and practices.

Faster Order Fulfillment Lead Time is considered a major advantage – an opportunity to differentiate and take market share.

![Bar charts showing lead times for different order types.](chart.png)
How Do You Eat an Elephant? The SCOR® System

- SCOR is a supply chain process reference model containing over 200 process elements, 550 metrics, and 150 best practices including risk and environmental management.
- Organized around the five primary management processes of Plan, Source, Make, Deliver and Return.
- Developed by the industry for use as an industry open standard - Any interested organization can use as well as participate in its continual development.

Diagram:
- Supply Chain
- Supplier processes
- Customer processes
- Plan
- Source
- Make
- Deliver
- Return
- Process, arrow indicates material flow direction
- Process, no material flow
- Information flow
Where are the Problems?

C.O. = Customer Order, Inv. = Inventory, P.O. = Purchase Order, Prod. = Product
Lean, Six-Sigma, Constraints
All Techniques combined

<table>
<thead>
<tr>
<th></th>
<th>Transact Time</th>
<th>Idle Time</th>
<th>Transact per Hour</th>
<th>FTE</th>
<th>Rework/Day</th>
<th>PCE</th>
<th>Yield</th>
<th>Waste</th>
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<tr>
<td>sS1.1</td>
<td>Sched Delivery</td>
<td>5</td>
<td>5</td>
<td>3</td>
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<td>50.00%</td>
<td>79.17%</td>
<td>20.83%</td>
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<td>sS1.2</td>
<td>Receive Product</td>
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<td>1</td>
<td>5</td>
<td>0.5</td>
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<td>92.50%</td>
<td>7.50%</td>
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<td>sS1.3</td>
<td>Verify Product</td>
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<td>5</td>
<td>5</td>
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<td>16.67%</td>
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<td>sS1.4</td>
<td>Transfer Product</td>
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<td>2</td>
<td>5</td>
<td>0.25</td>
<td>33.33%</td>
<td>97.50%</td>
<td>2.50%</td>
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Forecasting is one of the biggest challenges among the O&G Infrastructure companies

Demand visibility is poor, which leads to below average forecast accuracy

- Less than 30% of Infrastructure customers provide demand forecasts
- Average operational planning horizon for Infrastructure companies is 6-months or less

31% of O&G Infrastructure companies reported measurements for forecast accuracy

Those Infrastructure companies who do measure forecast accuracy report 68% vs. 77% for Industrial benchmark companies

There is value in better forecasting...
Within the Industrial population, the top 50% in forecast accuracy saw a 62% improvement in on-time delivery performance*

* Based on Industrial Benchmark performance
Summary...

- O&G Infrastructure companies are poised to capitalize on rapid growth and strong profitability

- Customers are demanding better reliability and responsiveness from your supply chains

- Rather than scaling up the old ways… there’s an opportunity to leverage best practices from other industries – forecasting and sales & operations planning are likely first steps
About Supply Chain Council

- SCC is an independent, **not-for-profit, trade** association
- **Membership** open to all **companies** and **organizations**
- Founded in 1996
- **Regional** representation (chapters) **worldwide**: North America, Europe, Japan, Southern Africa, Latin America, Australia/New Zealand, Southeast Asia, Greater China, and Middle East
- **Focus on research, application and advancement and advancing state-of-the-art** supply chain management systems and practices
- **Developer** and **endorser** of the Supply Chain Operations Reference (SCOR®) as a cross-industry standard for supply chain management
- Offers **Training, Certification**, Benchmarking, Research, Team Development, Coaching, and Cross-standard Integration focused on the SCOR® framework
- Approaching 1000 Association Members within global chapters