What can we learn from other industries?

Riyadh, Saudi Arabia
March 23rd, 2015
Light Tight Oil (LTO) breakeven price have reached majors’ full cycle cost

LTO BREAKEVEN PRICE\(^1\) AND MAJORS FULL CYCLE COST\(^2\)
USD per Barrel of Oil Equivalent, 2009-2013

1: F&D + Lifting costs. Pure unconventional NAM players
2: S&GA + F&D + Total Production + WACC. Majors
Source: Rystad; IHS; Evaluate Energy; Goldman Sachs
What can we learn from other industries?

GROUND BREAKING TRANSFORMATIONS FROM AUTOMOTIVE AND AEROSPACE INDUSTRIES

- **TOYOTA**
  - Efficiency increase +30%
  - Efficiency against US competitors

- **PSA PEUGEOT CITROËN**
  - New Models per year increase
  - New Models per Year

- **AIRBUS**
  - Delay reduction ~4 years
  - Delivery delays

- **BOEING**
  - Development Cost reduction
  - Development Cost

Note: Normalized Values
Source: IMVP World Assembly Plant Survey-1989; NESTA Total Innovation Report; SBC interviews with PSA and Airbus executives, SBC analysis
Are IT systems integrated within and outside companies?

**FUNCTIONALITY**

- **3D Design**
- **3D Digital Mock-up (DMU)**
- **3D Product Lifecycle Management (PLM)**
- **3D Simulation and Interactive Environment**

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Source: Dassault Systems

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Do we take advantage of lean benefits?

LEAN BENEFITS IN THE AUTOMOTIVE AND OIL & GAS INDUSTRY SELECTED EXAMPLES

Note: Normalized values
Source: Toyota Production System, Taiichi Ohno, Productivity Press, p 126-127; Anadarko Petroleum Corporation; SBC analysis
Are our educational and professional backgrounds sufficiently diverse?

AUTOMOTIVE\textsuperscript{1} VS. O&G\textsuperscript{2} EDUCATION BACKGROUNDS

Percentage

<table>
<thead>
<tr>
<th></th>
<th>Automotive</th>
<th>O&amp;G Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA's</td>
<td>16%</td>
<td>15%</td>
</tr>
<tr>
<td>Business school and others</td>
<td>55%</td>
<td>14%</td>
</tr>
<tr>
<td>Engineering</td>
<td>29%</td>
<td>71%</td>
</tr>
</tbody>
</table>

AUTOMOTIVE\textsuperscript{1} VS. O&G\textsuperscript{2} PROFESSIONAL CAREERS

Percentage

<table>
<thead>
<tr>
<th></th>
<th>Automotive</th>
<th>O&amp;G Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other sectors</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Several companies</td>
<td>35%</td>
<td>26%</td>
</tr>
<tr>
<td>One company</td>
<td>39%</td>
<td>76%</td>
</tr>
</tbody>
</table>

1: Based on 15 largest Automotive companies
2: Based on 15 largest Oil and Gas companies
Source: SBC analysis
Are we investing enough in our engineers?

TECHNICAL STAFF TO CAPEX RATIO
Staff members per Billion USD spent, 2013

<table>
<thead>
<tr>
<th>Sector</th>
<th>Technical Staff</th>
<th>Capex Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defence¹</td>
<td>5,090</td>
<td>140</td>
</tr>
<tr>
<td>Automotive¹</td>
<td>4,350</td>
<td>260</td>
</tr>
<tr>
<td>Utilities</td>
<td>2,940</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total E&amp;P²</strong></td>
<td><strong>2,940</strong></td>
<td><strong>140</strong></td>
</tr>
<tr>
<td><strong>Facilities³</strong></td>
<td><strong>260</strong></td>
<td><strong>+35</strong></td>
</tr>
</tbody>
</table>

¹: Based on a sample of representative companies on each sector. Considers industry engineers
²: E&P Capex/(PTPs + Capital Projects Eng. + Maintenance & Inspection Eng.)
³: Facilities Capex/(Capital Projects Eng. + Maintenance & Inspection Eng.)

Note: PTPs include Geologist, Geophysicist, Petrophysicist, Drilling Eng., Completion Eng., Production Eng., Reservoir Eng.
Source: Aviation Week; SBC interviews with Airbus executives; SBC HR Benchmark 2014; IHS Upstream Spend Report; SBC Analysis