Risk Management
Shifting Demands in a Dynamic Market

Jim Brittain

ECRI Meeting
June 2016 | Houston
One of the world’s largest engineering, procurement, fabrication, construction, and maintenance companies

Designs, builds, and maintains capital-efficient facilities for clients on six continents

Delivers integrated solutions for clients in the energy, chemicals, government, industrial, infrastructure, mining and metals, and power market sectors

Serving more than 4,000 clients in over 100 different countries

#136 on the FORTUNE® 500 list with revenue $18.1 billion in 2015

59,000 employees executing projects globally

104-year Fluor legacy

Fluor Corporate Headquarters
Dallas, Texas
Fluor - Core Values

**Safety**: We hold sacred the current and future wellbeing of people – employees, Customers and communities in which we work and live.

**Integrity**: We live by the highest ethical standards. Our actions are consistent with our values and principles.

**Teamwork**: As One Fluor, we treat all people with dignity, respect each other’s perspective and share knowledge and resources to achieve excellence, deliver value and grow individually and collectively.

**Excellence**: We strive to deliver quality fit-for-purpose solutions at unmatched value.
The Power business line serves Clients in the following markets:

- Environmental compliance
- Gas/IGCC
- Nuclear
- Power services / Operations and maintenance
- Renewable energy
- SMR technology
- Solid-fueled
- Transmission
The Mining & Metals business line has the capability and expertise to execute diverse upstream and downstream mining and metals projects in remote locations around the world.

- Complex material handling and iron ore transportation systems
- Feasibility studies
- Innovative and proven processes for minerals and metals recovery
- Mine site infrastructure
- Metals process facility design and construction
- Operations and maintenance
- Program management
Mining & Metals
Worldwide Projects

Prominent Hill Copper/Gold Mine
South Australia

Constellium Project Quiver
Bowling Green, Kentucky

Pueblo Viejo Gold Mine
Cotui, Dominican Republic

Quellaveco Copper Mine
Moquegua, Peru

Debswana Diamond Company
Botswana
Life Sciences & Advanced Manufacturing

The Life Sciences & Advanced Manufacturing business line serves customers in the biotech, pharmaceutical, manufacturing and water industries.

- Master planning
- Consulting services
- Refurbishment of existing facilities
- Small cap/small scale project
- Mid- to large-scale projects
- Mega projects
- Program management
- New construction
Life Sciences & Advanced Manufacturing

Worldwide Projects

North Fractionation Facility
Clayton, North Carolina

Hexcel PAN Carbon Fiber
Decatur, Alabama

MedImmune FMC Expansion
Frederick, Maryland

Baxalta International
Covington, Georgia

Showa Denko Carbon, Inc.
Ridgeville, South Carolina
Fluor Government Group provides a variety of services to the U.S. and select international governments, including:

- Contingency operations
- Logistics support
- Heavy equipment sourcing
- Life support services
- Nuclear management and operations
- Environmental remediation and site closure
- Secure services
- Waste management
- Facility operations and O&M support
- Emergency response
Energy & Chemicals

The Energy & Chemicals business line serves the global oil and gas production/processing, chemicals, and petrochemicals industries.

- Ranks No. 1 on *ENR* (Engineering News-Record) magazine’s list of Design Firms in Industrial Process/Petroleum sector
- Full range of services including design, engineering, fabrication, procurement, and construction
- Program management
- Consulting services for feasibility studies and project financing
- Operations and maintenance
- Global office platform optimizes execution of all sized projects including mega-projects in remote locations with challenging environments
Energy & Chemicals
Worldwide Projects

- CPChem U.S. Gulf Coast Petrochemicals
- Shell Quest Carbon Capture & Storage
- TAQA Gas Storage Bergermeer Alkmaar, the Netherlands
- Shah Gas Development Shah, United Arab Emirates
- Malampaya Phase 3 Offshore Palawan, Philippines
Strategic journey begun 5 years ago to become the Integrated Solutions Provider of choice

Restructuring actions taken in 2014 ahead of the significant change in business environment

Developed additional capabilities in Fabrication, self-perform construction, supply chain and procurement for clients in the energy, chemicals, government, industrial, infrastructure, mining and metals, and power market sectors needing Integrated Solutions

Added a large fabrication yard in China COOEC Fluor Heavy Industries (CFHI) JV to serve projects with very large modules

Operations and Maintenance expanded its reach and capability with the Acquisition of Stork B.V. adding more than 15,000 employees to our global team

Developing Future Talent - As one of America’s Best Employers (Forbes 2015), Fluor has redoubled efforts to deepen the global pipeline of capable and experienced employees who can executing projects globally

Clients increasingly seeking greater capital efficiency, and cost certainty - focused our efforts on adding capabilities in areas that enhance our ability to provide solutions across the full life cycle of a project
Global Oversupply of Oil for 2.5 Years

- **Brent Crude Price**
- **Crude Oil Under Supply**
  - Average of -0.9 mm bbl/d
- **Crude Oil Over Supply**
  - Average of 1.1 mm bbl/d or 1.2%

Source: IHS Data from May 2016 graphed by Fluor Corp Strategy

---

**Energy & Chemicals**

---

---
Energy & Chemicals

Excess Oil Inventory of 1 Billion Barrels

The Second Act in Oil Market Rebalancing

Clearing inventories accumulated since 2014 could take until next decade

Source: International Energy Agency

Feb 2016
### Client Profits Drop and CapEx Slows

**Source:** Company Earnings Reports 1Q16, Petroleum Argus Feb 26, 2016, Wall Street Journal

#### Table: Profits and CapEx

<table>
<thead>
<tr>
<th></th>
<th>Profit ($bLn)</th>
<th>Upstream ($bLn)</th>
<th>Downstream ($bLn)</th>
<th>Capex ($bLn)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1Q16</td>
<td>1Q15</td>
<td>±%</td>
<td>1Q16</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>1.81</td>
<td>4.94</td>
<td>-63%</td>
<td>0.76</td>
</tr>
<tr>
<td>Chevron</td>
<td>0.73</td>
<td>2.57</td>
<td>-72%</td>
<td>1.46</td>
</tr>
<tr>
<td>Shell</td>
<td>0.48</td>
<td>4.43</td>
<td>-89%</td>
<td>1.44</td>
</tr>
<tr>
<td>Total</td>
<td>1.61</td>
<td>2.66</td>
<td>-40%</td>
<td>0.50</td>
</tr>
<tr>
<td>BP</td>
<td>0.56</td>
<td>2.65</td>
<td>na</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Source: Petroleum Argus dated December 24, 2015

### Annual Profits Lowest in 10 Years

**Source:** Wall Street Journal

#### Majors’ capex guidance

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chevron</td>
<td>40</td>
<td>35</td>
<td>27</td>
<td>20-24</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>39</td>
<td>&lt;34</td>
<td>&lt;34</td>
<td>&lt;34</td>
</tr>
<tr>
<td>Shell</td>
<td>35</td>
<td>29</td>
<td>33</td>
<td>na</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>23-24</td>
<td>20-21</td>
<td>17-19</td>
</tr>
<tr>
<td>BP</td>
<td>23</td>
<td>17-19</td>
<td>17-19</td>
<td>17-19</td>
</tr>
</tbody>
</table>

*updated 2017 guidance †updated 2015 and 2016 guidance, with 2016 assuming BG deal closes early 2016

**Under Pressure**

A 20-month oil-price slump has dented oil-company annual earnings

International oil companies’ annual earnings, in billions

Source: the companies

**Source:** Wall Street Journal
A Clients Perspective

- Chased production of more Barrels and Tons trusting the demand would be there (China Growth) and the prices would hold
- Increased project complexity both in scale (mega project >$10B) with larger facilities and more challenged locations
- As project deviations accelerated from board approval levels, client project teams responded with requirements for more information, additional specifications, more documentation more frequently with more quality assurance processes
  - Significant PDDM and PIM department increases in past 10 years
- Client team sizes increased (not the skill levels or capabilities) often with agency hires. Compounded problem with imposition of new/additional client tools and work processes.
- Projects split into numerous horizontal and vertical silo’s creating complex web of intersecting interfaces but management systems did not adapt
- Global market pressure strained engineering and supplier capabilities
According to one Major Energy Company - EPC efficiency has declined – complex work, too much segmentation, shifting demands

- Measured in hours/piece of equipment it takes 1.3X more hours in 2014 vs. 2004
- Labor intensity – effort per unit of plant production unit has increased 1.15 over same time period

- Today O&G projects take 100 hours to accomplish what could be done for 80 hours while over the same time period the automotive industry is able to produce with 100 hours what it took them 160 hours to do 10 years ago
- Market segmentation and a shift in the location of Capex expansion has moved EPC’s into new geography’s and new markets, stretching their capabilities
- Supply chain has stumbled – increase in defective work product and decline in general quality and timeliness
- Escalation in costs across the project portfolio – largely client born but not always
Market Response Observations

◆ Client pullback in Capex and communication that only the most advantaged projects will move forward. Strong desire for a “market response” lower costs and appeals to EPC’s to deliver something different. Low cost target setting without certainty of work release.
  ▪ LSTK bids issued without FID certainty if price per ton is not at “best in class”

◆ More developers entering the market – often underfunded and seeking cost coverage from EPC. New market entrants from Asia, bringing their own EPC’s into the market.
  ▪ Bankable projects – extended bid validation and re-pricing - technology wraps – large LD’s – site risk – unlimited warranties

◆ Owners shift of risk to contractors moving from reimbursable models to Lump Sum and/or a skin in the game models – fees and overheads at risk, rip and tear obligations, extended FEED warranty deep into EPC phase and circuitous change provisions. More onerous terms of payment, performance bond requirements, bid bonding, withholding.

◆ LS projects with reimbursable type contract interactions and execution behavior of the client
  ▪ Hold points and approvals – client acceleration
    – schedule float owner – approval of personnel
Market Response Observations

◆ Existing property risk transfer to contractor including remediation of Asbestos on existing plant site which could be removed 2 years before contractor mobilizes (Client can remove at their leisure but wishes to assign risk to contractor)

◆ Client pullback from completing FEED – seeking truncated FEED period or FEED competition on reduced time period with bankable LS price requested at end of FEED period

◆ Some bids asking for incomplete FEED to become contractors risk vs. rely-upon quality data

◆ Increase in use of third party negotiators – many without EPC experience shifting contractual risks into “deal breakers” – “take it or leave it” positioning, resisting mutually-beneficial dialog

◆ Rejecting “knock for knock” and “exclusive remedies for warranty” for uncapped (or high cap) limits of liabilities and warranty exposures at law. Seeking assumption of risk for loss not capped at insurance proceeds i.e: piracy carve-outs, Hazmat carve-outs
How are we responding

Maintain balance in the Portfolio 22% LS at the present in two regions. Staying focused on core capabilities and grow new skills intensely and selectively.

Modifications to project governance and execution models
- Quarterly deep dives into project execution and commercial details. External attendees including risk group members.
- Limiting execution of complex projects to few locations. Centers of excellence for LSTK and partnered projects.
- Limiting JV project partnerships to reliable and proven performers.

Risk Management team remains led by corporate risk officer with a regional team of professionals connected to the business lines working at the project and office level
- Business Risk Management Framework early implementation and regular revisions to adjust for risked passed and newly identified risks – risk analysis throughout the project lifecycle.
How are we responding

◆ Renewed focus on project and client selectivity – always in play but new filters applied as client risk profiles are shifting and behaviors changing

  ▪ Pre-bid selectivity has always been high but has increased – especially with developers to avoid wasted (and expensive) pursuit efforts
  ▪ Avoiding unbalanced risk/competitions
  ▪ Minimize/avoid exposures to unproven/new technologies or stretch of existing
  ▪ Maintain hands on the levers of control – avoid hand offs of key scope to others
  ▪ Manage key interfaces tightly – strong teams at offsite work areas and balanced deals “If it seems to good to be true – It is”

◆ Innovation as a differentiator and means of de-complexifying project execution. Good examples in adjacent industries of complex work processes that have been slimmed down to improve certainty through better uses of technology.