

Quarterly Perspective on Oil Field Services and Equipment

November 2015

Lower for longer

Oil Field Services & Equipment (OFSE) sector revenues continued to contract in the third quarter 2015, continuing the trend of the previous quarters. Overall sector revenues have declined by 29 percent versus Q3 2014. The most pronounced declines were seen by companies in the sector's services (-38 percent), assets (-27 percent), and equipment (-28 percent) categories. Capex was 31 percent lower than in Q3 2014, with significant reductions for companies across all categories.

Despite a temporary recovery in June, oil prices have traded below \$50/barrel for most of the third quarter. As a result, many companies are now resetting their capital budgets for oil prices below \$60/barrel and lowering expectations for capital expenditures in 2016.

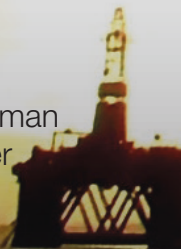
In Q3 2015, oil and gas industry capital expenditure was 31 percent below Q3 2014 levels, with majors reducing spending by 22 percent, internationally operating independents by 39 percent and NOCs by 26 percent. From Q2 to Q3 2015, the capex declines were 8 percent for majors, 15 percent for internationals, and 10 percent for NOCs, continuing the capital

expenditure 'reset' seen in recent quarters. However, the standout reductions were made by US independents, which cut spending by 57 percent versus Q3 2014. This reflects ongoing strong contraction in the North American onshore market, particularly as hedges made at higher price levels run out.

Consequently, Q3 2015 OFSE revenues were down 29 percent from Q3 2014. Most pronounced revenue declines were seen in services (down 38 percent) and equipment (down 30 percent). But assets and EPC companies also saw revenues fall significantly, down 27 percent and 17 percent respectively. Sequentially (i.e., versus Q2 2015), sector revenue fell 6 percent, indicating the rate of decline may be easing.

Over the past four quarters, EBITDA margins have reduced, although by less than the revenue fall would suggest. Services companies and equipment companies lost 4-5 percent of margin. EPC firms' margins have been broadly stable, albeit at low levels. Asset companies saw their margins increase slightly. In our discussions, and in the light of their own performances, operators remain surprised by the resilience of OFSE companies' margins.

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Key trends

Oil prices declined in recent weeks, but forward curves continue to point upwards (Exhibit 1):

Oil price gains in the second quarter were lost in the third quarter, with Brent once again trading at below \$50/barrel.

Continued weakness in emerging markets – notably China and Brazil – has raised concerns about medium-term demand development. Meanwhile, Iranian supply may soon enter the market, which most industry observers estimate will add 500,000 to 1 million barrels within a year: an increase in global supply of ~1 percent. The US onshore supply also remains stubbornly robust, declining only slowly since May this year. As a result, Brent is trading at \$44/barrel and WTI around \$40/barrel.

Forward prices remain on an upward curve, with oil for 2020 delivery trading at \$67/barrel (Brent) and around \$ 58/barrel (WTI). However, the upward curve is less steep than 3 months ago.

McKinsey's long term oil demand and supply model suggests a price of \$65 to 85/barrel is required to generate sufficient supply to meet long-term demand growth of 1 percent per annum. We continue to believe these levels could be reached in 2017.

Capital expenditure – decline continued in Q3 (Exhibit 1):

Most oil and gas companies have announced further significant capital expenditure reductions as part of their budget processes. Q1 and Q2 2015 showed how these reductions are becoming reality. In Q3, we have seen many companies announce further cuts in response to the weaker oil price environment, with the pace of decline mirroring the Q2 movement.

In Q3 2015, oil and gas industry capital expenditure was 31 percent below Q3 2014 levels, with majors cutting back by 22 percent, internationally operating independents by 39 percent and NOCs by 26 percent.

Sequentially (i.e., versus Q2 2015), the spending declines were 'only' 8 percent for majors, 15 percent for IOCs and 10 percent for NOCs, reflecting the capital expenditure 'reset' seen in recent quarters. Spending by US independents fell by a standout 57 percent from Q3 2014. This decline reflects continued strong contraction in the North American onshore market, particularly as hedges made at higher prices expire.

Rig count – As decline in US onshore rig count resumes, offshore rig count also starts falling (Exhibit 2):

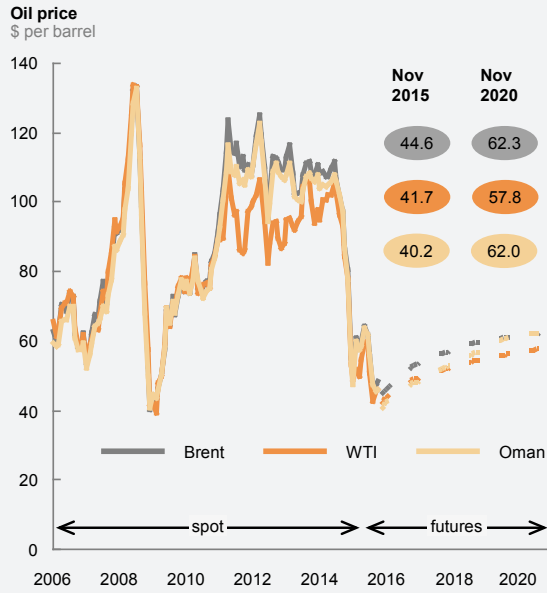
Global onshore rig count has fallen 34 percent since the start of the year. Almost all of this decline was led by the US – where over 9 months rig count dropped from 1885 to 988. After Q2 figures showed a brief slowdown in the rate of US onshore rig count decline, recent figures indicate that the drop accelerated again in Q3 with 55 rigs taken out of service in August and September 2015.

International onshore rig count has remained relatively stable with a net increase of 5 rigs in Q3 2015, but down 11 percent from 980 to 872 since the start of the year. The Middle East has been particularly strong with new drilling activity in Oman and Saudi Arabia.

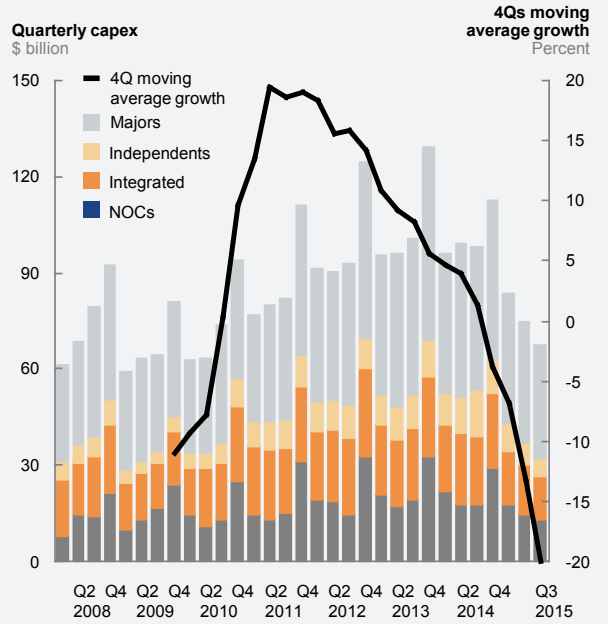
Offshore rig count peaked at 443 in November 2014, but has since declined by 142 rigs or 33 percent with the trend accelerating since February. Consequently, offshore fleet utilization fell from almost 90 percent to around 75 percent, with day rates for new fixtures falling between 8 percent and 35 percent for comparable rigs. Offshore rig count began to stabilise in the third quarter.

Exhibit 1

Oil prices are at a five year low with forward curves pointing upwards



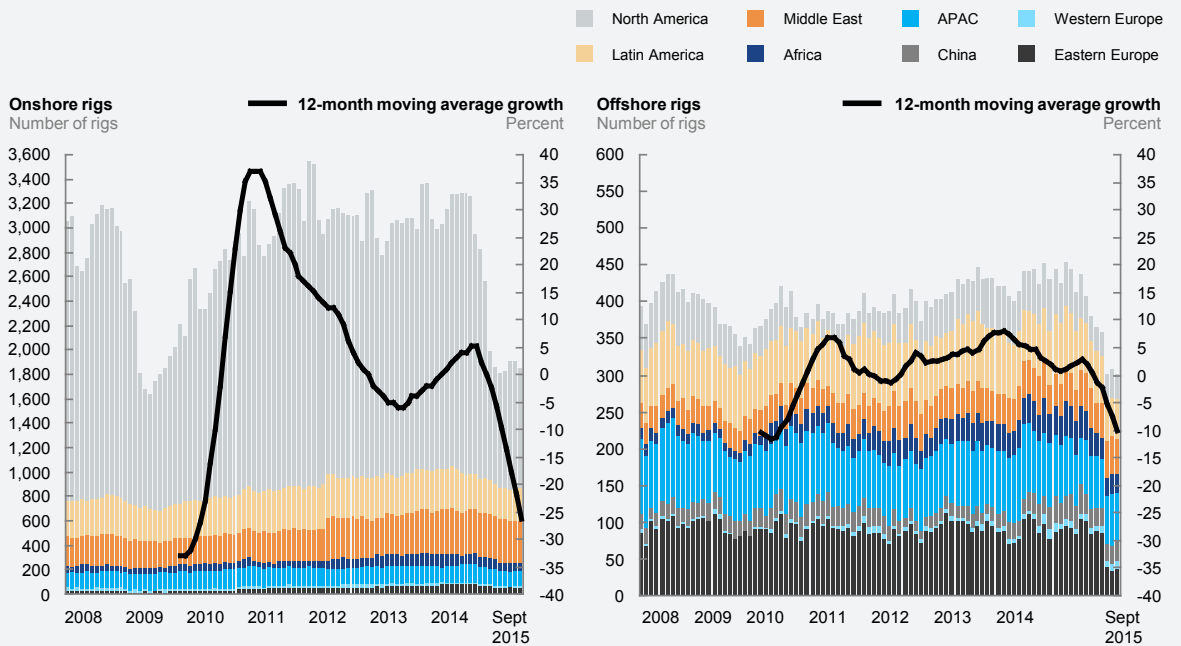
SOURCE: S&P Capital IQ



SOURCE: S&P Capital IQ; McKinsey analysis

Exhibit 2

Onshore rig count may have bottomed out in Q3



SOURCE: Baker Hughes rig count; McKinsey analysis

SOURCE: Baker Hughes rig count; McKinsey analysis

Recent OFSE market performance

We have analyzed the most recent quarterly performance of key listed OFSE companies, categorized by four business models: equipment companies, services companies, asset companies (such as onshore and offshore drilling contractors or FPSO operators) and Engineering Procurement & Construction (EPC) firms. For each set of companies we track quarterly revenue, profit and backlog development. We survey 78 companies representing about half of the OFSE sector's total revenues, which provides us with a good understanding of sector development and enables quick identification of industry trends.

During Q3 2015, OFSE revenues were 29 percent lower than Q3 2014. While the largest declines were posted by services (down 38 percent) and equipment (down 30 percent) companies, there were also significant falls for firms providing assets (down 27 percent) and EPC services (down 17 percent). Sequentially, the decline was 6 percent, which is a more moderate reduction than the capex decline of 10 percent. We believe OFSE revenues closely follow the capex growth trend, albeit with a slight delay reflecting the time-lag between oil and gas companies booking expenditures and OFSE companies booking revenues. The length of delay differs between the various OFSE business models (services having the shortest, while equipment and assets have the longest).

Over the past four quarters, EBITDA margins have reduced, although maybe not as much as the revenue fall would suggest. Services companies and equipment companies lost 4-5 percent of margin. EPC firms have kept margins roughly stable – albeit at low levels. In our discussions, operators remain surprised by the resilience of OFSE sector margins in comparisons to their own performance.

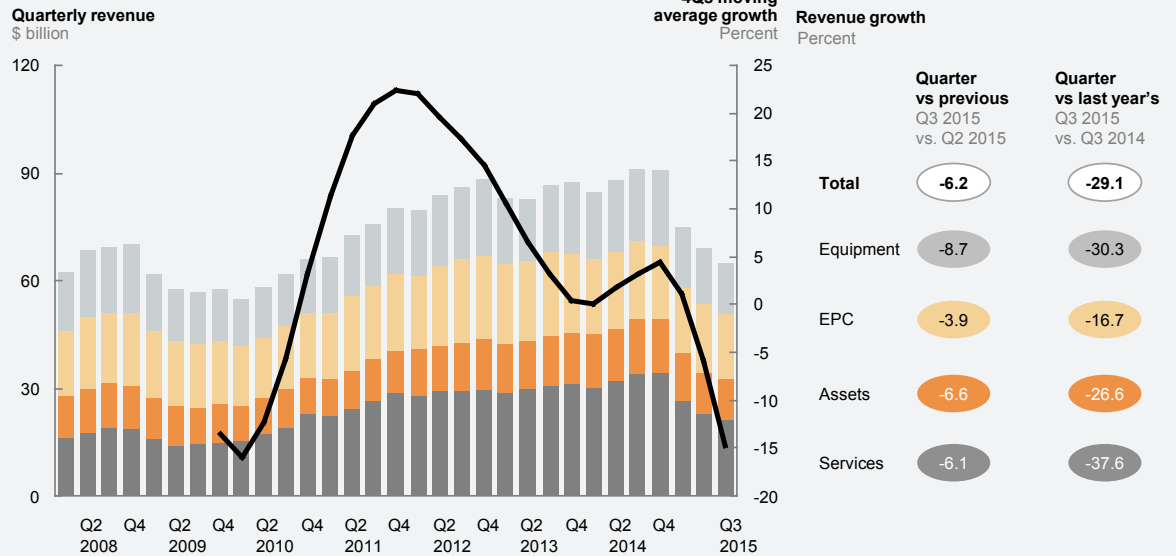
- Oil field services companies saw Q3 2015 revenues decline 38 percent from the same quarter a year earlier, and fall 6 percent from the previous quarter. For the four large services companies – Schlumberger, Halliburton, Baker Hughes and Weatherford – we can

double click on their geographic performance. The revenue decline has been most pronounced in North America, with Q3 2015 down 50 percent from Q3 2014. A significant part of that decline occurred during Q2, which saw a 26 percent fall from Q1. In contrast, Q3 was just 5 percent lower than Q2. Other regions are all down on a year-on-year quarter comparison – Latin America down 29 percent, Europe and Africa down 32 percent, and Middle East and Asia Pacific down 21 percent. EBITDA margins were 18.9 percent on average, down 4.7 percent from Q3 2014 and down 0.5 percent on Q2 2015.

- Equipment companies saw Q3 2015 revenues decline by 30 percent from Q3 2014, and sustain a 9 percent sequential decrease from Q2. While the backlog ensured revenues in 2014, we now see a rapid revenue decrease. EBITDA margins for Q3 2015 were 14.3 percent on average, down 0.5 percent from Q2 2015 and 5.4 percent lower than the same quarter in 2014. The high fixed cost base of equipment manufacturers has prevented them from reducing their costs in proportions similar to the services companies. This indicates there will be further earnings erosion as revenues continue to decline.
- Asset companies include a range of companies contracting out assets such as drilling rigs and floating production and storage offshore units (FPSOs). Q3 2015 revenue for this group fell 27 percent from Q3 2014, a sharp reversal after multiple years of growth. Revenues declined sequentially by 7 percent, which suggests that the downward trend is starting to stabilise. As shown above – rig count for offshore drilling continues to decline at a steady pace.
- EPC companies saw Q3 2015 revenues decline 17 percent from Q3 2014, and 4 percent from Q2 2015. These firms seem to have stemmed the initial revenue decline by increasing their backlog with new, albeit smaller orders. EBITDA margins were 9 percent for the sector, largely back to Q3 2014 levels.

Exhibit 3

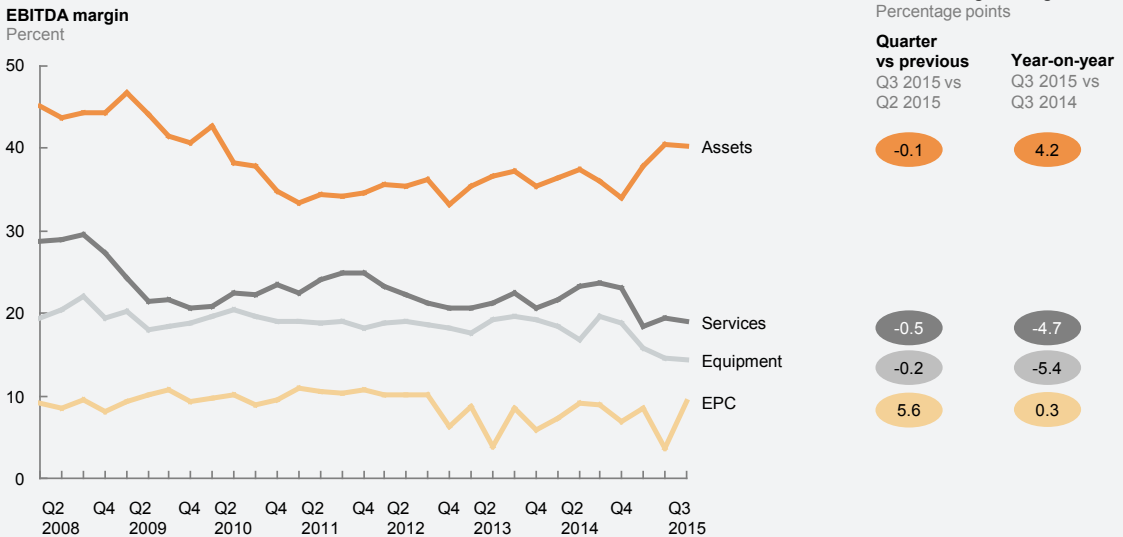
OFSE revenues' dip extends into Q3



Note: Revenue as announced – adjusted for different accounting/disclosure policy. Sample includes 14 equipment, 9 EPC, 29 assets and 8 services companies
 SOURCE: Capital IQ; McKinsey analysis

Exhibit 4

Asset and EPC companies see margins improve over last year, while services and equipment suffer



Note: Revenue as announced – adjusted for different accounting/disclosure policy. Sample includes 11 equipment, 7 EPC, 19 assets and 8 services companies
 SOURCE: Capital IQ; McKinsey analysis

Disruptive cost reduction for OFSE players

Cost escalation and complexity fever in Oil&Gas

Several oil and gas industry dynamics are pushing players to prioritize cost discipline. The period of oil price increases that began in 2004 and eventually plateaued in a relatively stable range of \$90 to \$120 in 2011-2014 allowed significant input cost inflation from expanding margins along the value chain as well as increased technical specifications. Increasing pressure to mitigate against external and regulatory risks, particularly post-Macondo, led to additional 'gold-plating' and systems redundancy. As the industry now faces the potential of significantly reduced profitability in tandem with sustained external challenges, the imperative to optimize costs has become even more critical.

In this context, OFSE players are suffering the typical symptoms of unnecessary complexity that are challenging the competitiveness of their products:

- Cost improvement efforts are more and more fragmented and less effective;
- Demand for greater differentiation is ever increasing (change requests and variants – “we never have the right product”);
- R&D workload exploding and de-focused (more projects than engineers);
- Rising issues from field and installation resulting in significant efforts with retro-fits;
- More people/efforts shifting to fixing mistakes rather than thinking right the first time.

As a result OFSE players are facing increasing potential risks: increasing complexity in manufacturing and supply chains requiring more resources to deliver, increasing quality issues, limited focus on innovation, downward pressure on profits.

- A disruptive approach to cost reduction is required to mitigate these risks in the current challenging context.

Driving disruptive cost reduction

A successful approach to disruptive cost reduction for oil and gas equipment needs to address three different dimensions: (i) creating product modules where possible, (ii) optimizing these modules, and (iii) actively managing the supply chain.

Product modularization: modularization of major product supplies is increasingly the solution that oil and gas companies want their suppliers to provide as a way to meet cost challenges. Key steps include:

- Identifying key drivers of variability at system, subsystem and component level
- Developing functional modules by rethinking product architecture, subsystems and interfaces in order to build customized products vis-à-vis key variability drivers starting from a few pre-defined building blocks.

Module optimization: the development of the modules needs to be coupled with top-notch design-to-value methodologies to ensure the competitiveness of the solution, in particular:

- Re-engineer subsystems and components for total (design, manufacturing, assembly, and installation) cost minimization;
- Review internal design choices through 360° (e.g., adopt different technologies, eliminate over specifications vs. API, eliminate redundant components where possible).

Supplier management: the product development activity should be concurrent with a 360° review of both the supply chain and the relationship with suppliers:

- Expand supplier base through supply chain competitive intelligence;
- Develop collaborative buying strategy through frame agreements with most competitive suppliers, including co-creation of solutions and driving changes to supplier processes (manufacturing, assembly, etc.);

- Increase price transparency by developing price matrix with comprehensive module configurations quoted one-by-one;
- Apply systematically should-cost and should-time negotiations across categories.

Impact

The approach laid out above has been successfully applied by best-in-class players across multiple low volume, project-based, complex machinery industries, including OFSE.

Impact achieved on core products has been substantial and encompasses multiple dimensions:

- 20 percent+ cost reduction;
- 2 percent+ lead time reduction ;
- 30-50 percent engineering hours reduction.

Moreover the new modular competitive products are allowing OFSE players to strengthen their positioning with oil and gas companies through an enhanced value proposition:

- Significant reduction of overall project time to first production, through simplification of design variants, (over)-specs, etc.;
- Help to address local content needs through design-for-manufacturing solutions;
- Additional benefits in asset operability (ease of use from unskilled workforce in remote locations).

For more information on product cost out please contact Angelo Barabino (angelo_barabino@mckinsey.com) or Alberto Bettoli (alberto_bettoli@mckinsey.com)

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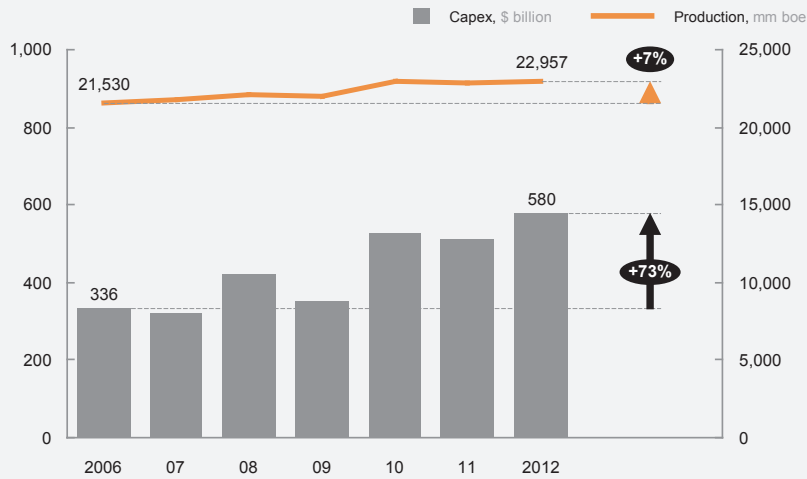
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Exhibit 5

Several dynamics in the O&G industry are pushing players to prioritize cost discipline alongside growth

Exponential growth of upstream capital expenditure



Even though Oil & Gas companies have continued to increase upstream spending, production growth has stagnated



"We are making hard choices on Shell's assets and options, to improve capital efficiency"

– Ben van Beurden

ExxonMobil

"One of our priorities is to improve unit profitability... through good procurement and contracting strategies"

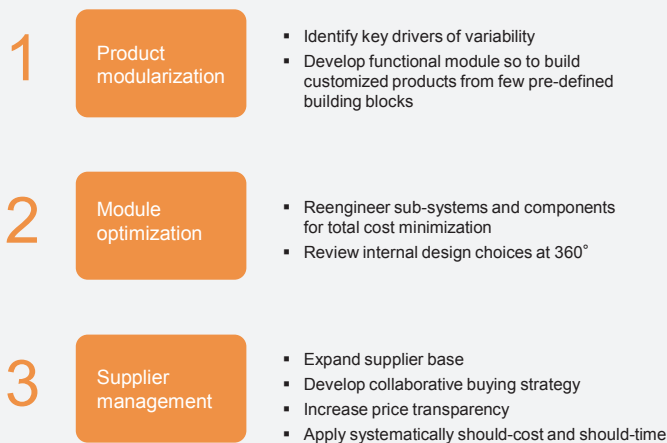
– Rex Tillerson

Some drivers of the value challenge:

- Industry cost inflation
- More complex O&G settings
- Challenging locations (politics, local content, logistics)
- Increasing difficulty to pass on risk to contractors

Exhibit 6

Approach for disruptive cost reduction



20%+
cost reduction

20%+
lead time reduction

30-35%
engineering hours reduction