The Norwegian oilfield services analysis 2017
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Introduction

Welcome to the 2017 edition of EY’s annual review of the Norwegian oilfield service (OFS) industry. In this report, we quantify the size and development of this diverse industry and analyze the dynamics across the value chain.

EY has been conducting the Norwegian OFS analysis every year since 2006, and the report is developed and expanded each year in line with the growth of the industry. EY also issues annual reports covering the UK- and Dutch-based OFS industries.

In the 2017 edition, the database has been updated to reflect the addition of new legal entities to the empirical dataset, as well as removal of those entities that are no longer predominantly serving the oil and gas (O&G) industry. Our database now holds a total number of Norwegian-registered OFS companies in excess of 1,200.

We hope you find the report useful and we welcome any feedback you may have.

NCS OFS revenue

CAGR = 10.7%

-35.5%
Executive summary

Further decline in revenues and profitability in 2016
The downturn in the Norwegian OFS industry has been deeper and more prolonged than what many, including the industry itself, had predicted. The strong growth in the period 2011–14 has been reversed as the industry is now back to 2010 levels of aggregated revenue. Due to the long contract durations, some subsegments have experienced a lagged downfall from 2014. Aggregate revenues dropped by 26% to NOK331b in 2016. This is 36% lower than the peak in 2014.

Cost-saving programs have somewhat cushioned the downfall in EBITDA. The aggregate EBITDA margin is down by 2.4 percentage points (pp) to 7.8%. We note that the EBITDA margin has been declining for several consecutive years.

The decline impacted all OFS segments
Percentage wise, the exploration and production (E&P) drilling segment experienced the largest drop in revenue and profitability during 2016. Due to the contract lengths within this segment, the revenues and profitability trends were somewhat supported in 2014 and 2015. Compared with 2015, the main segments across the OFS value chain experienced a decrease in revenues between 20% and 35%. The heavyweights; E&P drilling; engineering, fabrication and installation (EFI); and operations segments saw their revenues in 2016 decrease by 34%, 22% and 25%, respectively.

Further downward pressure on asset values due to prolonged weak market conditions
Asset values plunged alongside the oil price in 2014, forcing several large companies, especially those within the asset-heavy segments, to take large impairments. The impact was first reflected last year when we observed that impairments rose from NOK9b in 2014 to NOK24b in 2015. Additional NOK22b impairments were made in 2016, as a reflection of how the lower market demand proved to be longer lasting than first anticipated. Naturally and as a consequence, depreciations have also come down as the asset base have been reduced over the last two years.

The large impairments have hit the EBIT margin for all subsegments. Although the EBIT margin on an aggregate level has declined for several consecutive years, the biggest impact hit in 2015 as a consequence of the large impairments. The aggregate EBIT margin has decreased by 11.7pp from 2014 levels to -6.0% in 2016.
Medium-sized companies surpassed small- and large-sized companies on profit margin

The Norwegian OFS industry comprised 1,229 active companies in 2016, of which 63.8% were characterized as small (annual revenues less than NOK100m), 31.2% as medium (annual revenues between NOK100m and NOK1b), and 5.0% as large (annual revenues higher than NOK1b).

There is considerable diversity among companies with respect to revenues and the number of employees. However, we observe that the diversity has converged toward smaller companies, as a natural result of a significant decrease in aggregate revenues. Large companies generally provide a wide range of services across the value chain, and many of these are global players. Small companies tend to be more specialized and focus on a narrower part of the value chain and specific technologies.

Aggregate profit margins have been on a downward slope since 2012, and the trend further accelerated in 2015 and 2016. Companies in the medium-size segment managed to turn the downward trend and reported a 0.3pp improvement on the margin. The EBITDA volatilities over time for each company size segment are indicative of the typical risk profiles. Smaller companies often have few and relatively large accounts contributing to their earnings, as well as a limited coverage of medium- to long-term contracts. They are also often exposed by concentration geographically, either within their home market or toward specific export regions. As companies gain size, they are better positioned to allocate resources across a wider range of clients, OFS segments and geographical areas, and even toward markets outside of the O&G industry.

Companies are progressing in cost-cutting programs

Most of the companies have gone through challenging and complex processes for adjusting their asset, manufacturing and human resources capacities to meet the expected lower for longer market demand. As a result of large restructuring programs, both completed and ongoing, we have observed a net job reduction of almost 31,000 employees. This is equivalent to a 24% reduction from the peak in 2014.

Furthermore, we also note that the overall cost levels have come down significantly during the challenging operation conditions in the past two years. Although restructuring programs have slashed the total workforce, the largest cuts relate to direct operating expenses such as cost of goods and services sold. OFS contractors have been forced to reduce the overall cost levels in order to remain competitive and survive in the new reality of the O&G industry. We observe solid progress in cutting cash overspending as many of the subsegments have been able to improve efficiency and hence bring down operating cost.
Moderate OFS revenue growth expected toward 2019

High exploration and field development activity, combined with significant upgrades to existing fields, fueled OFS growth till 2014 and kept the activity high into 2015. Investments have declined since 2013, with the most significant cuts in 2016. The industry has now most likely put the worst behind, but companies are preparing for continued muted market scenarios for the next couple of years. E&P spending on the Norwegian Continental Shelf (NCS) is expected to grow modestly toward 2020. After 2020, the outlook for the NCS is more uncertain, and, for the long term, more discoveries are needed to sustain the Norwegian OFS activity levels.

Overall, we estimate that total OFS revenues fell in 2017 by around 10% compared to 2016. Looking forward, we see moderate revenue growth of approximately 1% in 2018 and 6% in 2019. For 2018, the revenue growth rate will probably be kept down by the still challenging market environments in asset-heavy subsegments such as rig and offshore supply companies. The outlook is more positive for other segments focused on NCS, and we expect revenues for subsegments such as well services, EFI consultants and yards to grow faster than the overall OFS growth rate in 2018. In 2019, total revenue growth is expected to pick up as asset-heavy segments start to stabilize, albeit at low levels.

Many companies will still struggle with low margins, overcapacity in certain segments and further restructuring negotiations over the coming years. At the same time, Norwegian offshore technology continues to prove that it is very competitive, cost-efficient and highly attractive globally, and the weakening of the Norwegian krone, since the oil price collapse in 2014, has made Norwegian OFS firms more competitive as suppliers to new projects on the NCS. For these reasons, the outlook for many of the OFS segments appears brighter than it has been for several years.

Norway OFS revenue and profitability forecast
The downturn in the Norwegian OFS industry has been significant, and all regions have seen their revenues and profits decline from 2015 to 2016.
Significant activity erosion in key regions with severe local consequences

Regions and clusters

The Norwegian OFS industry is present in every region in Norway, with the southern part of the country accounting for the most activities and the largest share of companies and employees. However, as the geographic analysis is based on headquarter location only, the activities in Northern Norway, via subsidiaries and branches, is likely to be underestimated.

The downturn in the Norwegian OFS industry has been significant and all regions have seen their revenues and profits decline from 2015 to 2016. Rogaland, which is the single largest OFS region in Norway, saw the revenues decline by NOK34.6b, thereby recording the largest reduction in absolute terms. Agder, which has a high concentration of rig equipment suppliers, recorded a revenue reduction of NOK28.9b or 57.1%. In terms of number of employees, Agder is down by 3,500 or 34.9% from 2014 to 2016.

All Norway regions have recorded a net reduction in the number of OFS employees in 2016. In terms of workforce, Rogaland recorded the largest number of job cuts in 2016, with almost half of the reported 12,000 job cuts in the Norwegian OFS industry from 2015 to 2016.

In terms of petroleum production, the North Sea remains the major O&G producing sector, followed by the Norwegian Sea. The Barents Sea, located around the Arctic Circle, contains the Snøhvit and Goliat fields. Operational support for the fields connected to these regions will be a key activity driver for years to come.

<table>
<thead>
<tr>
<th>Regions</th>
<th>Number of legal entities</th>
<th>Employees (No. 1,000)</th>
<th>Revenue (NOKb)</th>
<th>CAGR 2012–16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agder</td>
<td>68</td>
<td>7</td>
<td>22</td>
<td>-15.3%</td>
</tr>
<tr>
<td>BTV*</td>
<td>81</td>
<td>10</td>
<td>25</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Eastern Norway</td>
<td>177</td>
<td>20</td>
<td>76</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Hordaland</td>
<td>204</td>
<td>12</td>
<td>35</td>
<td>-7.5%</td>
</tr>
<tr>
<td>Møre</td>
<td>153</td>
<td>10</td>
<td>37</td>
<td>-7.7%</td>
</tr>
<tr>
<td>Northern Norway</td>
<td>31</td>
<td>1</td>
<td>2</td>
<td>-6.9%</td>
</tr>
<tr>
<td>Rogaland</td>
<td>460</td>
<td>38</td>
<td>128</td>
<td>-6.3%</td>
</tr>
<tr>
<td>Trøndelag</td>
<td>55</td>
<td>3</td>
<td>7</td>
<td>-19.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,229</strong></td>
<td><strong>100</strong></td>
<td><strong>332</strong></td>
<td><strong>-6.5%</strong></td>
</tr>
</tbody>
</table>

*Buskerud, Telemark and Vestfold

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**The Barents Sea**
- Fields approved for production: 0
- Fields in production: 2

**The Norwegian Sea**
- Fields approved for production: 5
- Fields in production: 16

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**Description**
- Size of circle indicates share of total revenues
- Distribution based on official registered company headquarter location
The reservoir and seismic segment still facing challenges

About the segment
The reservoir and seismic segment includes Norwegian legal entities that operate seismic vessels for data gathering; companies that consult, analyze, interpret and display seismic data; and companies that manufacture and supply equipment for gathering and analyzing seismic data acquired for the E&P clients.

Key financials

Reservoir and seismic
- Since 2014, total revenue has declined by 46%. Due to the link with E&P company exploration activities, the revenue development in this segment was impacted early in the cycle. Aggregate revenue in 2016 indicates continued weak demand for data interpretation services as well as some effects due to consolidation with companies in other subsegments.
- In 2016, the revenue for multi-client services was, for the first time, higher than contract. Seismic companies focus more on multi-client seismic data since these have historically provided better returns, in addition to enabling companies to keep their vessels utilized as demand cooled off.
- Seismic companies have become more effective and achieved better utilization of the fleet. This has led to a significant increase in the number of km² they can shoot per day and a material reduction in the cost of new projects.
- The exploration costs on the NCS were reduced by approximately 35% during 2016. The costs are expected to decline further by approximately 15% during 2017, followed by a more modest increase. The overall trend in exploration costs must be viewed on the backdrop of the decline in the number of exploration wells as well as the overall lower cost for all OFS services linked with exploration.
- Due to the relatively modest global fleet of offshore seismic surveillance vessels, analysts indicate a leveling of supply and demand early in the market uptake, when compared with offshore drilling rigs and platform supply and anchor handling tug vessels.

Top five companies (2016 revenues)
1. PGS Geophysical AS
2. Exploration Investment Resources II AS
3. Multiklient Invest AS
4. TGS Nopec Geophysical Company ASA
5. Gecoship AS

NCS exploration cost

Source: Norwegian Petroleum Directorate
Revenues fall as old contracts are replaced with lower day rates

About the segment
The E&P drilling segment includes companies that own, operate or own and operate drilling rigs, as well as deliver systems, products and services to these rigs and the wells being drilled.

We have divided the segment into three subsegments: well service companies, rig companies and rig equipment companies.

**Key financials**

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue, NOKb</th>
<th>EBITDA</th>
<th>ROCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
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<tr>
<td>2013</td>
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<td>2015</td>
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<tr>
<td>2016</td>
<td></td>
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</tbody>
</table>

**Segment composition (2016)**

- **Number of companies**
  - 24 small <NOK100m
  - 135 medium NOK100m-NOK1,000m
  - 68 large >NOK1b
- **Revenue**
  - 70% small <NOK100m
  - 4% medium NOK100m-NOK1,000m
  - 28% large >NOK1b

**Well services**
The subsegment includes companies that offer products, services and integrated project management for drilling and well construction, as well as intervention and other operations over the life cycle of a well:

- Revenues in the well services subsegment fell by 23.0% in 2016, and are now down by 46.9% since the peak in 2014. The top five companies in the subsegment are still the main drivers for the decline in revenue as these companies saw their combined revenues decrease by 28.7% in 2016.
- After a relatively flattish movement in 2015, profit margins fell significantly in 2016. The aggregated EBITDA margin is down by 7.2pp to 4.5%, as EBITDA for the top five companies has nearly vanished. ROCE plunged by 14.7pp to -3.1%, partly due to the downfall in overall profitability and partly due to an increase in impairments.
- The OFS service companies offering a wide range of products, services and system solutions to the operators, have seen their market contract in two dimensions — firstly, an overall reduction in the number of wells drilled on the NCS, particularly for exploration wells; and secondly, simplification of each well as the operators have reconsidered their wellbore design and construction methodologies.

**Top five companies (2016 revenues)**
1. Schlumberger Norge AS
2. Halliburton AS
3. Baker Hughes Norge AS
4. Archer AS
5. Weatherford Norge AS

**Key financials**

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue, NOKb</th>
<th>EBITDA</th>
<th>ROCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
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<td>2013</td>
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<td>2015</td>
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<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
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</tbody>
</table>
Rig companies
The subsegment includes companies that own and operate offshore drilling rigs. Several of the rig companies have their rig assets registered abroad, which likely impacts the relevance of the ROCE part of the analysis for this subsegment:

• Despite the plunge in the oil price in 2014 and 2015, drilling activity remained high in 2015. This kept revenues and profit margins stable despite the severe downfall in the OFS industry in that year. The main reason for the delayed impact on the drilling subsegment was due to continuance of development and infill drilling done by rigs that were already in place, long contract durations and high reimbursement clauses, which discouraged cancellation of existing rig contracts.

• The oil companies’ demand for drilling rigs has decreased significantly due to a combination of low oil prices, postponement of investments and improved drilling efficiency. In 2016, the drilling activity measured in number of wells drilled was down by 15.8%, before increasing by 2.4% in 2017. At the same time, many new rigs have been built during the last decade, and number of available rigs now generally exceeds the demand. We see these effects hitting the offshore drilling rates as these have seen the largest price deflation within the OFS industry. Day rates are now hovering around operating cash-breakeven.

• The decrease in the offshore drilling rates have had a direct impact on revenues, as these are down by 23.6% in 2016. The EBITDA margin in the subsegment declined by 7.2pp to 11.0% in 2016. It is expected revenues will continue to remain deflated toward 2019 in line with the deflated rates in the following years. Reasons are the oversupply of drilling rigs in combination with rig demand still expected to remain at a lower level.

• In line with decreasing dayrates, asset values are also decreasing throughout the entire subsegment. Last year, we found that the companies in the subsegment took impairments of NOK13.7b, which is reflected in the EBIT margin that decreased from 3.2% in 2014 to -9.0% in 2015. In 2016, the companies took additional NOK5.2b impairments resulting in a 4.7pp EBIT margin improvement to -4.7%.

• As a result of decreasing asset values, the overall equity ratio in the subsegment has also declined significantly, and it is now down to 27.5% in 2016 from 42.8% in 2015. Net interest bearing debt was 5.3 x EBITDA in 2016, compared with 2.6 x EBITDA in 2015.

• Industry experts claim that the oversupply of drilling rigs will hit older and less-modern rigs the most. Furthermore, it is argued the ultra-deepwater segment has more structural challenges on both the supply and the demand side. Consensus is that the companies with a shorter-cycle exposure, such as jack-ups and North-Sea focused companies, will outperform deepwater-focused companies.
**Rig equipment**

The subsegment comprises companies that offer systems and equipment for rigs and topsides:

- The collapse in global rig order books has had a direct impact on the business activity level for rig equipment companies. In 2016, total revenues in the subsegment plunged by 63% and are now at levels 72% lower than the peak in 2014. Profit margins follow the revenue trend as EBITDA dropped by 7pp to 2.8% in 2016, and ROCE plunged by 16.1pp to -0.1%.

- The subsegment is highly consolidated as the two largest companies make up approximately 79% of the total revenues, and hence, are the main drivers for the overall development in the subsegment. These two companies experienced a downfall of 68% in the revenues and an 87% drop in absolute EBITDA.

- The number of employees in the subsegment totaled 4,482 in 2016, which is a 2.0% decrease from that of the last year. However, 2015 indicated a workforce reduction of 36% from the peak year in 2014, when the amount of employees totaled 7,167.

- As the order backlog for rig equipment companies has been reduced severely, the companies are highly dependent on new deliveries in order to increase the business. We expect the companies’ 2017 figures will reflect market conditions are still very challenging as the gap between supply and demand for jack-ups and floaters have increased in 2017. Furthermore, it is likely an increase in demand for rigs will reactivate stacked rigs rather than increase the rig yard order books, and hence, the upturn for the rig equipment companies is expected to lag the general offshore drilling market.

- For short to medium term, the offshore drilling OEMs are focusing on servicing the aftermarket and upgrading the automation aspects of their products and solutions. Opportunities within fixed drilling rigs on offshore production installations are also likely to increase as a consequence of the requirement to upgrade the existing fleet of mature age.

- The land drilling market is also trending in their favor, as general land drilling specifications are increasing as a consequence of extreme length laterals requiring bigger and stronger land rigs. However, it is uncertain to what extent these developments will benefit rig equipment companies in Norway.

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**Top five companies (2016 revenues)**

1. National Oilwell Varco Norway AS
2. Mhwirth AS
3. Cameron Sense AS
4. International Research Institute of Stavanger AS
5. Proserv Norge AS

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**Key financials**

<table>
<thead>
<tr>
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<th></th>
<th></th>
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<tbody>
<tr>
<td>Revenue (NOKb)</td>
<td>56</td>
<td>89</td>
<td>87</td>
<td>29</td>
<td>17</td>
</tr>
<tr>
<td>EBITDA</td>
<td>17</td>
<td>24</td>
<td>32</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>ROCE</td>
<td>7%</td>
<td>6%</td>
<td>10%</td>
<td>12%</td>
<td>16%</td>
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</tbody>
</table>

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**Forecasted jack-up deliveries**

<table>
<thead>
<tr>
<th>Year</th>
<th>Uncontracted</th>
<th>Contracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017E</td>
<td>19</td>
<td>56</td>
</tr>
<tr>
<td>2018E</td>
<td>17</td>
<td>50</td>
</tr>
<tr>
<td>2019E</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>2020E</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

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**Forecasted ultra-deepwater deliveries**

<table>
<thead>
<tr>
<th>Year</th>
<th>Uncontracted</th>
<th>Contracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017E</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>2018E</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>2019E</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2020E</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
The profitability in the subsegment is still characterized by underutilized capacity and overruns on construction projects.
Improved efficiency and cost cuts mean less demand for oil services

About the segment

The engineering, fabrication and installation (EFI) segment includes Norwegian legal entities involved in equipment supply, manufacturing, construction and installation of offshore O&G production units, both surface (topside) and subsea.

We have divided the segment into five subsegments: shipyards; larger engineering, procurement, construction and installation (EPCI)/yards; subsea; consultants and engineering houses; and workshops and product suppliers.

Shipyards

The subsegment includes shipyards that construct offshore vessels such as PSV, AHTS and OCSV vessels:

- The shipyard segment is still challenged by the shortfall of new orders and a material decrease in demand for offshore vessels. Revenues in the segment decreased by 19% in 2016 and are now at levels that are 42% lower than the peak in 2014.
- The profitability in the subsegment is still characterized by underutilized capacity and overruns on construction projects. These effects are reflected in the decrease in both the EBITDA margin and the return on capital employed. The latter has decreased from -0.4% in 2015 to -2.9% in 2016. The EBITDA margin has decreased from -0.3% to -1.6% in the same period.
- There is a need for further retirement of offshore vessels to balance these markets. This process will very likely cause additional shortfall of new orders from these segments to the shipyards. Historically, offshore vessels have made up a large share of the new orders to the Norwegian shipyards. However, the yards are experiencing a robust order flow in other segments, including orders from foreign ship owners. These other segments are primarily expedition yachts, ferries, cruise or passenger vessels and advanced service and logistics vessels to the growing Norwegian aquaculture industry.

Top five companies (2016 revenues)

1. Vard Group AS
2. Kleven Verft AS
3. Myklebust Verft AS
4. Ulstein Verft AS
5. Simek AS

Key financials

Revenue, NOKb

Profitability, %

-5%

-4%

-3%

-2%

-1%

0%

1%

2%

3%

4%

5%

6%

7%

8%

9%

10%

11%

12%

13%

14%

15%

16%

17%

18%

19%

20%

Revenue

EBITDA

ROCE


Reservoir and seismic

Exploration and production drilling

Engineering, fabrication and installation

Operations

Decommissioning

Shipyards

Larger EPCI/yards

Subsea

Consultants and engineering houses

Workshops and product suppliers

Key financials

Revenue, NOKb

Profitability, %

-5%

-4%

-3%

-2%

-1%

0%

1%

2%

3%

4%

5%

6%

7%

8%

9%

10%

11%

12%

13%

14%

15%

16%

17%

18%

19%

20%

Revenue

EBITDA

ROCE

Larger EPCI/yards

- The subsegment includes companies that offer EPCI of production and processing modules and facilities. Companies in the subsegment are also major maintenance and modification contractors for offshore topside facilities and onshore processing and receiving terminals.
- The EPCI/yards subsegment is still challenged by the E&P companies’ cost-cutting processes, and revenues fell for the third consecutive year with 12% in 2016. This indicates a total decline of 33% since the peak in 2013.
- There was a brief glimmer of improvement in profitability in 2015 as both the EBITDA margin and return on capital employed increased from the 2014 levels. However, the downturn continued again in 2016 as the EBITDA margin decreased by 1.4pp to 1.0% and ROCE decreased by 9.2pp to -3.3%. The total workforce in the subsegment was gradually reduced from 9,828 employees in 2013 to 8,388 employees in 2016 – a 14.7% decrease. However, total personnel expenses was 2.1% higher in 2016 compared with that of 2013.
- Aggregated EBIT margin for the subsegment decreased by 1.7pp to -0.7% in 2016, as a result of decreasing EBITDA and higher impairments compared with 2015.
- Although cost-cutting regimes are starting to materialize in companies’ books, the impact on profitability is more than offset by the decline in revenues. The reductions in the cost base may indicate that the EPCI contractors are about to adjust to a new reality. However, it is worrying how the pipeline of new projects is decreasing now that several contracts on major fields such as Martin Linge, Aasta Hansteen and Johan Sverdrup are entering the completion phase. On the medium- to long-term horizon, there are only a few major projects such as Johan Castberg and Snorre 2040 left to secure order intake for the EPCI contractors. It is expected that the activity level in the subsea sector will increase, and recent delivery performances and bids support more contracts to be awarded to Norwegian companies. However, it is not expected these subsea developments will gain any significant volume in order intakes for the EPCI contractors.
- Investments in new and existing facilities will be crucial for the EPCI subsegment going forward. Expected NCS capex levels presented by the Norwegian petroleum directorate reflect a challenging period for the companies in the subsegment when the current portfolio of ongoing projects are completed. In 2016, the NCS investments fell by 17% in real terms, and final numbers for 2017 is expected to reflect a further decline of 9% in 2017, followed by a moderate increase toward 2020. Historically, the absolute investment levels have been higher for new facilities compared with existing facilities. According to the capex level trend going forward, investments in these two categories are expected to converge toward the same level in 2018 and onward. Investments in new facilities are expected to decrease by 42% in the period 2016-18, and investments in existing facilities are expected to increase by 75% in the same period.

Top five companies (2016 revenues)
1. Aibel AS
2. Kværner AS
3. Westcon Yards AS
4. Apply Sørco AS
5. Coast Center Base AS

Key financials

NCS capex split in main categories

Source: Norsk Petroleum
Subsea

The subsegment includes companies that engineer and fabricate subsea equipment and companies within the subsea umbilicals, risers and flowlines (SURF) and inspection, maintenance and repair (IMR) segments:

- The subsea subsegment seems to have experienced a somewhat lagged impact from the downturn in the OFS industry. Last year we saw that North European subsea capex levels were down by 42% whereas revenues for this subsegment decreased only by 13%. In 2016, however, revenues decreased by 20%, and at the same time, the capex levels were down by 11%.
- The subsea subsegment was affected by a group-internal merger in 2016 where several companies were merged into the subsegment’s largest company. This means revenues from the companies that were classified in other subsegments in 2015 have been included in the subsea subsegment in 2016. A rough estimate suggests that the merger increased total subsea revenues in 2016 by approximately NOK6b.
- The subsea subsegment experienced strong growth in revenues and a corresponding cost inflation over the past decade. The downfall in the oil price has forced the overall cost level downward to regain competitiveness. According to an analysis carried out by DNB, the subsea contractors have cut own cost levels by around 30%, driven by the largest operators. The cost improvements are primarily achieved through an optimization of the subsea architecture, which has been enabled by increased collaboration between equipment providers and installation providers. Through achieving integrated procurement, fewer subsea production system interfaces and less complexity, both costs and capex levels still have high improvement potential. This development will however require early engagement by the subsea companies and that E&P companies change the way they approach field development. We expect this to be the main driver behind the large consolidations we have seen so far in the cycle, driven by the tier 1 international players.
- The overall EBITDA margin in the subsegment has increased by 2.0pp to 9.2% and is now back to 2014 levels. The development is primarily driven by the seven companies in the large-size segment (revenues >NOK1b), who managed to increase the absolute EBITDA by 10.6% in 2016, whereas the two other segments (small- and medium-sized companies) decreased in absolute EBITDA.
- According to Quest Offshore, around 70 subsea trees were awarded in 2016, which is around 80% lower than the 2004–13 average. Sanctioning of new subsea wells will be essential for the subsea segment in the coming years, and the current outlook for the NCS looks promising. Several sanctions are expected in the near future, as we believe there is a backlog of recycled projects that may be profitable now cost levels has come down. In addition, the structural change of NCS operator companies will likely drive the investment mindset, as smaller and more opportunistic oil companies will start to develop their portfolio of subsea projects in the next two to three years.

Top five companies (2016 revenues)
1. Aker Solutions AS
2. FMC Kongsberg Subsea AS
3. Subsea 7 Norway AS
4. Technip Norge AS
5. Onesubsea Processing AS
Consultants and engineering houses

The subsegment includes companies that supply skilled personnel and consultants to the E&P operators and OFS companies:

- Revenues in the consultant and engineering houses fell by 35% in 2016, which is a significantly steeper decline compared with 2015, when revenues decreased by 13.5%.
- The EFI consultants subsegment was affected by an internal merger in 2016, where one of the subsegment's largest companies was merged into a subsea company. Revenues that were included in the subsegment in 2015 have, therefore, been included in the subsea subsegment in 2016. A rough estimate suggests that the merger reduced EFI consultants' revenues in 2016 by approximately NOK 2.5b.
- The aggregated EBITDA margin continued to decline in 2016 and is down by 3.1pp to -0.7% in 2016. The companies in the subsegment have managed to cut costs significantly, with a net reduction of 33% in 2016. This is primarily driven by a 55% reduction in direct opex (cost of goods sold). The personnel expenses were reduced by 32%, as the total workforce in the subsegment has been reduced by 17% in 2016. In addition to total workforce reduction, engineering houses and consultancies can respond to the market downturn with diversification of people and skills to areas where skills are transferrable, such as renewable energy and offshore wind.

Workshops and product suppliers

The subsegment includes companies that design, develop, fabricate and sell products and systems to offshore installations, rigs and vessels:

- In line with lower rig activity and backlog decrease for offshore vessels, the demand for system solutions and high-technology offshore products has declined. The overall revenues in the subsegment declined by 22% during 2016, and are now at levels that are 29% lower than the peak in 2014.
- Profit margins have been declining continually since 2011, due to strong price pressures. Following the decrease in revenues since 2015, ROCE have turned negative and EBITDA margins are converging toward zero. The companies in the subsegment have met the downturn with intensified cost cuts, as they managed to reduce net costs by 21% in 2016, primarily driven by a 24% decrease in direct opex. The aggregated EBITDA margin dropped by 1.5pp to 0.2% in the same period.
- In line with decreasing profit margins, ROCE for the subsegment has dropped below zero after a 9.2pp drop to -0.5% in 2015, and are down by an additional 3.3pp to -3.8% in 2016. The latest drop is somewhat cushioned by a significant decrease in capital employed.
Following the decrease in revenues since 2015, ROCE have turned negative and EBITDA margins are converging toward zero.
Weak markets forced offshore vessel owners to restructure and delay debt repayment

About the segment
The operations segment includes entities that support oil companies in the production phase. We have divided the segment into three subsegments: offshore logistics; maintenance and modification (M&M); and production.

- **Offshore logistics**
The subsegment includes companies that own and operate offshore vessels, helicopter companies and supply bases:
  - Subsegment revenues decreased by 24% from 2015 to 2016, driven by continuing falling demand for offshore vessels. The oversupply of vessels in the market has negatively affected the rates for offshore support vessels (OSV) and anchor handling tug supply (AHTS) vessels, and has forced shipowners to stack up ships in lay-up locations.
  - Reduced demand impacted the operations margins and EBITDA has declined with 5.9 pp. during 2016. EBIT was affected in a much greater scale, dropping from -6.2% to -40.7% due to more than a doubling of impairment charges registered in 2016.
  - Reactivating costs for stacked ships are substantial and will normally rise in line with the time the vessel is off market. Thus, there is a chance that some of the stacked vessels will not return to the market. Moreover, vessels, as opposed to rigs, may be converted to fit other markets — which will also likely assist with improving the supply and demand equation in the medium term.

- Top five companies (2016 revenues)
  1. CHC Helikopter Service AS
  2. Heli-One (Norway) AS
  3. Bristow Norway AS
  4. Dof Subsea Rederi AS
  5. Farstad Supply AS

- **Key financials**
  - Revenue, NOKb
  - Profitability, %
  - ROCE

- **Segment composition (2016)**
  - Number of companies
  - Revenue
  - Small <NOK100m
  - Medium NOK100m-NOK1,000m
  - Large >NOK1b
Maintenance and modification (M&M)
The subsegment includes companies offering M&M for offshore installations, including surface treatment, passive fire protection and inspecting services:

• The revenue decline of more than 50% from 2015 to 2016 was affected by a group-internal merger in 2016, where one of the subsegment’s largest companies was merged into a subsea company. Revenues that were included in the subsegment in 2015 have, therefore, been included in the subsea subsegment in 2016. A rough estimate suggests that the merger reduced M&M revenues in 2016 by approximately NOK3b–NOK4b.

• Due to operators’ cost efficiency focus, suppliers within this segment have had to renegotiate medium- and long-term contracts – challenging profitability and ROCE. However, EBITDA margins increased by 4.1pp. during 2016, but are still only a quarter of what EBITDA was in 2012. Around 40% of all the companies in the subsegment reported negative EBITDA in 2016.

• The total workforce in the subsegment has been reduced by 4,699 employees, equivalent to -19.5% since the peak in 2014. However, the personal expenses have increased steadily since 2012. But in 2016, the cost dropped back to almost the same level as they were in 2012.

Production

• The subsegment includes companies active in production, supporting equipment and services, such as floating production storage and offloading (FPSO) units, facility management, waste management, communication and production operations.

• The subsegment margins have been relatively stable in 2016. EBITDA increased by 1 pp. and ROCE increased by 2.6 pp. The revenue, however, dropped by 24% during 2016.

• Companies in the production subsegment are less exposed to the operators’ capex budgets. Despite this, there has been a drop off in the subsegment revenue that can be explained partly by some bankruptcies and partly by some of the companies also having technology sales divisions toward newbuild FPSO markets, which has seen a dramatic drop in revenues.

• Despite the E&P companies’ overall cost focus, operating margins in the subsegment have been stable since 2012.
The decommissioning spending has remained deflated due to several factors.
No decommissioning boom despite low oil prices

About the segment
The decommissioning segment includes companies that primarily offer services related to decommissioning of offshore installations. However, decommissioning-related services, such as plugging and abandonment (P&A) and infrastructure removal, form an integral part of the strategic and operational focus of many OFS companies, which have operational focus primarily in other segments.

Key financials

Decommissioning:
- In 2016, a total of seven companies had decommissioning as their core business. As mentioned in the segment introduction, the number of companies with partial revenue within the decommissioning is significantly higher.
- Segment revenue declined by 31.6% from 2015 to NOK893m in 2016.
- EBITDA for this segment declined by 96.4% from NOK115.6m in 2015 to NOK4.1m in 2016. The EBITDA margin fell by 8.4pp. to 0.2% in 2016.
- Four of the seven companies in the segment experienced an increase in revenue, while the other three experienced a decline, illustrating varying performance levels and the ability to win contracts as critical performance drivers.
- The decommissioning spending has remained deflated due to several factors. The lifetime of field infrastructure and lifetime on the NCS have been extended through technological enhancement and improvement in recovery techniques. Lower oil prices have also facilitated for careful capex considerations, including capex commitment for decommissioning.

Top three companies (2016 revenues)
1. AF Decom AS
2. AF Offshore Decom AS
3. GMC Decom AS

Disposal/cessation costs on the NCS

Source: Norwegian Petroleum Directorate
For the Norwegian OFS industry as a whole, we expect revenues to have reached the bottom in 2017 at around NOK300b.
Brighter outlook for the Norwegian OFS industry

As of January 2018, the outlook for the Norwegian OFS industry appears more promising than it has been for several years. After the reduction in global E&P spending during the 2014–17 downturn, global spending increased in 2017 driven by US onshore activity. In 2018, we anticipate global offshore spending will be close to bottoming out, and moderate growth can be expected going forward. Within global offshore spending, the outlook for the NCS looks like a bright spot toward 2020, where the activity is supported by ongoing and new development projects such as Johan Sverdrup, Johan Castberg and the Snorre expansion. With the cost focus of the past years and the weakening of the Norwegian krone, Norwegian OFS firms appear competitive to win contract awards for these projects. Looking ahead toward 2020–21, once these projects are completed, the outlook will be more uncertain and will depend on the oil price development and successful drilling of new exploration wells.

For the Norwegian OFS industry as a whole, we expect revenues reached the bottom in 2017 at around NOK300b. Going forward, our forecasts show revenue growth of 1% in 2018 and 6% in 2019. The growth will not be evenly distributed among segments, with labor-intensive and NCS-focused segments such as well services, EFI consultants and M&M likely to show the most positive growth, while more asset-heavy segments such as rig and offshore supply companies continuing to face oversupply challenges. The EBIT margins are forecast to recover somewhat after the unprecedented drop in 2016, but will still remain well below the margin levels we saw before 2014.

Reservoir and seismic
For the reservoir and seismic segment, we see revenue growth of around 2% in 2017 and 2018, with a further modest increase in 2019. Higher and more stable oil prices will likely increase oil companies’ exploration budgets. On the other hand, available seismic vessel capacity could keep a lid on price trends. Overall, we expect moderate growth going forward.

Exploration and production drilling
For the exploration drilling segment, we do not expect aggregate revenues to start growing again until 2019. In the rig companies subsegment, we do not expect rig rates to fully recover back to pre-2014 levels during our forecast period. As the ongoing older contracts with high day rates expire, new contracts with lower day rates will keep pressure on total revenues. The activity level is expected to increase slightly from 2017, but not back to the levels seen in 2012-14. For the rig equipment segment, we expect further revenue decline in 2017, but more stable activity going forward. In the medium term, this subsegment will depend more on aftermarket sales than has historically been the case. The outlook for the well services companies is more positive, as this is a more concentrated subsegment that can take advantage of the moderate pickup in NCS drilling activity and well intervention campaigns.

Engineering, fabrication and installation
We forecast total EFI revenue growth of 3% in 2018 and 6% in 2019, after a 7% decline in 2017. The outlook for the yards and EFI consultants subsegments look fairly positive, and will likely benefit from the NCS projects currently under development. The recovery for subsea companies may be a bit further off as the industry grapples with low project awards during 2015–16 and overcapacity. Still, outlook for this subsegment could be more positive in the longer term.

Operations
Outlook for the operations segment also varies by subsegment. Pent-up demand from delayed maintenance on NCS platforms could drive revenue growth for M&M firms in the next couple of years. In offshore logistics, the outlook is more muted, with the overcapacity of PSV and AHTS vessels not looking to disappear soon. The third subsegment, production, has historically shown stable growth and we expect this to more or less continue going forward. Overall, we see a revenue decline of 11% in 2017, driven by offshore logistics, turning to revenue growth of 1% in 2018 and 3% in 2019 for the segment as a whole.
Viewpoint on the UK sector

The decline in revenue and margins since the peak in 2014 demonstrates the extent of the challenges the UK OFS industry has been facing. Although significant cost and capacity have been taken out of the system, headwinds remain, particularly in relation to domestic activity, as the development pipeline continues to run off. Also, the relative high operating costs of the UK Continental Shelf (UKCS) (despite a 50% decrease since 2014) as well as the question of how much of the structural cost reductions will be maintained when there is an upturn in activity exist.

On a more micro level, 2018 is likely to be another challenging year for the management as they balance day-to-day operational efficiency, liquidity management and stakeholder relationships, while addressing structural changes to the industry as large integrated companies move from consolidation to portfolio optimization and digital technologies are increasingly adopted.

Yet there are signs sentiment is turning. Many observers expect the price of crude to remain in the band in which it has been trading for the foreseeable future and that opportunities are increasing for companies that are able to differentiate themselves, especially in international markets. Alongside price, other critical factors to succeed will include relationships, proximity to markets and customers, flexibility and, above all, innovation.
Method

Data collection
Accounting information is publicly available from the Brønnøysund Register Centre. The companies' business addresses as available in the register have been used to reflect the entities' geographic location. The number of companies included in the analysis will vary somewhat depending on the availability of financial information.

In order to analyze economic activity by geographic location and across the OFS value chain, we have used the stand-alone financial statements of individual legal entities. As a result, large corporations have been analyzed through their constituent individual companies and not as a consolidated group. Intercompany transactions are not eliminated when financial figures are aggregated. In addition, the revenues of subsidiaries owned by a Norwegian holding company, but registered abroad, are not captured. The year 2016 figures have been modeled based on previous years' where annual reports were not available by the time this report was prepared.

Location
The regions used in the analysis have been chosen to reflect and illustrate the main clusters of OFS companies in Norway.

The regions are Rogaland, Hordaland, Agder, Møre (Møre og Romsdal and Sogn og Fjordane), BTV (Buskerud, Telemark and Vestfold), Trøndelag, Northern Norway (Nordland, Troms and Finnmark) and Eastern Norway (Oslo, Akershus, Oppland, Østfold and Hedmark).

Value chain segments
Each company in the OFS portfolio has been reviewed individually and an assessment has been made with regard to the company position in the value and supply chain.

The value chain has the following categories:
- Reservoir and seismic
- E&P drilling
- EFI
- Operations
- Decommissioning

Each of these categories are further broken down into subsegments to capture the huge diversity within the industry. Many of the companies will offer products and services in more than one segment in the OFS value chain. However, each company has only been categorized to the value chain segment in which they generate the majority of their revenues. For larger industrial conglomerates with multiple subsidiaries, each of the group companies have been allocated to its respective best fit OFS segment.

Inclusion criteria
A company is defined as a Norwegian OFS company if:
- At least 50% of its turnover is generated in the O&G sector
- It is a Norwegian-registered company

Some companies may have previously had more than 50% of its turnover generated from the O&G sector but do not meet the definition of a Norwegian OFS company in a particular year. Such companies may still be included in this year’s database to alleviate comparisons over time. As an example, shipyards are included in 2016 even though the share of turnover generated in the O&G sector is reduced and not all companies will meet the definition of a Norwegian OFS company this year.

Company size definition
- Large companies: revenues of more than NOK1b
- Medium-sized companies: revenues between NOK100m and NOK1b
- Small companies: revenues of less than NOK100m

Forecasting model
We have estimated the revenue development for 2017-19 using a forecasting model with both quantitative and qualitative factors. The model is based on several approaches, which differ between the subsegments. These approaches include:
- Analysis of historical correlations between OFS firm revenues and macroeconomic variables
- Financial reporting and forward guidance of listed OFS companies
- Market analysis of certain subsegments
- Discussions with industry experts

Calculations
EBIT = Earnings before interest and tax
Adjusted EBIT = EBIT + impairment
EBITDA = Adjusted EBIT + depreciation and amortization
Capital employed = Total assets - (financial long-term and short-term investments + cash) - (trade creditors + tax payable + public duties payable)
ROCE (Return on Capital Employed) = Adjusted EBIT/capital employed
CAGR (Compound Annual Growth Rate) = ([ending value/beginning value]^(1/# of years)) – 1
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