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M&A INTERNATIONAL INC.

Oilfield Equipment and Services: Merge or Acquire for a Well-Oiled Future

2012

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Executive Summary

During the 1980s, oil was more readily recoverable through conventional exploration and drilling techniques. Consequently, oilfield equipment and services (OFS) companies were fewer and smaller. Furthermore, most oil companies¹ did not wish to maintain drilling operations they regarded as non-core and uneconomical. With drilling margins diluting those available in other group businesses, oil companies generally divested such operations to focus on their core competence, exploration and production (E&P).

Now, some 30 years later, market conditions favor OFS companies. In retrospect, it seems oil companies wasted an opportunity, resulting in massive strain on their finances and operational expenses considering the amount these companies pay annually for drilling services. According to Morgan Stanley, day rental rates for ultra-deepwater rigs are expected to touch \$714,000 by the end of Q3 2012 from about \$600,000 in June 2012, an increase of 19%.

Oil companies depend on OFS companies to provide a wide range of services used in the exploration and extraction of oil and natural gas, including seismic imaging, oil well equipment and services, and drilling rigs. Oil companies' investments and OFS company business volumes are becoming even more highly correlated. Prospectively, the oil and gas industry will become increasingly dependent on OFS companies. Given the need for oil explorers to target less accessible locations at greater depths and in more environmentally challenging situations, we expect oil companies to employ technologically advanced OFS companies that can generate value by increasing production and recovery, reducing overall costs and mitigating risk.

Such market conditions imply significant mergers and acquisitions (M&A) activity going forward. To meet operators' needs in a highly dynamic E&P industry, OFS



companies continue to expand their operations by acquiring firms that specialize in hydraulic fracturing, horizontal drilling and new offshore technologies. Nevertheless, OFS companies face stiff competition from private equity (PE) businesses and several E&P companies seeking to vertically integrate OFS firms to reduce future costs. However, there have been only a few big acquisitions by PE firms in recent years due to the difficulties of securing adequate bank funding, except for government-backed PE transactions. Consequently, national oil companies (NOCs) have become more important participants in the global oil and gas industry. We expect this trend to continue over the coming years as companies look to strengthen their competitive positions. OFS companies that envision being one-stop solution providers will be hunting for smaller companies with expertise in specialized drilling machinery and equipment. But these integrated OFS companies will be compet-

ing against international oil companies and NOCs also pursuing such acquisitions.

Higher demand and rising oil and natural gas prices are stimulating OFS corporate investments, with any susceptibility to short-term fluctuations in commodity prices depending on the producer. NOCs and integrated oil companies (IOCs) generally apply longer-term commodity price assumptions and maintain more stable spending patterns to achieve long-term production volume growth objectives. Meanwhile, independent E&P companies react faster to commodity price changes, resulting in more volatile capital expenditure patterns. While OFS sector M&A activity decreased in 2008–2009, underlying business fundamentals have remained robust. For example, the international rig count remained relatively unaffected when crude prices fell from almost \$150 per barrel to \$36 between the middle and end of 2008. The industry has

¹ "Oil companies" refers to oil and gas exploration and production (E&P) companies.

Executive Summary

survived extremely volatile business conditions, including the largest year-on-year decrease in global energy demand in 20 years followed by the biggest recovery ever seen, as well as major natural disasters and political unrest.

From a regional perspective, OFS M&A activity² in North America remains high, with an aggregate disclosed deal value of \$29.8bn comprising 62% of a global transaction total of \$47.8bn during July 2010–June 2012. Much of the increase reflects the long-term US plans to reduce energy dependence on the Middle East and greater interest in unconventional sources, including shale gas reservoirs³.

With offshore oil exploration moving from shallow to deepwater, major OFS players are acquiring fleets of rigs and drilling platforms capable of operating in harsh environments, where demand still outstrips supply. Furthermore, shale gas formation exploration is driving the emergence of new techniques, including horizontal drilling, sophisticated 3-D or 4-D imaging techniques, and other advances in drilling equipment, such as high horse-power pumping and engineered fluid systems. We expect significant M&A activity in these sub-segments, with OFS firms, seeking to establish leadership in important drilling segments, targeting companies operating next-generation technology.

Specialization is key



“To meet operators’ needs in a highly dynamic E&P industry, OFS companies continue to expand their operations by acquiring firms that specialize in hydraulic fracturing, horizontal drilling and new offshore technologies.”

Paul Puri
Head of M&A International Inc.’s
Energy Group

² Our analysis is based on 457 closed deals during July 2010–June 2012. The deal coverage includes oil and gas drilling (primary) and oil and gas equipment and services (primary).

³ According to the International Energy Agency, unconventional oil includes: a) oil shales, b) oil sands-based synthetic crudes and derivative products, c) coal-based liquid supplies and d) biomass-based liquid supplies and liquids arising from the chemical processing of natural gas.

M&A Overview and Analysis (July 2010–June 2012)

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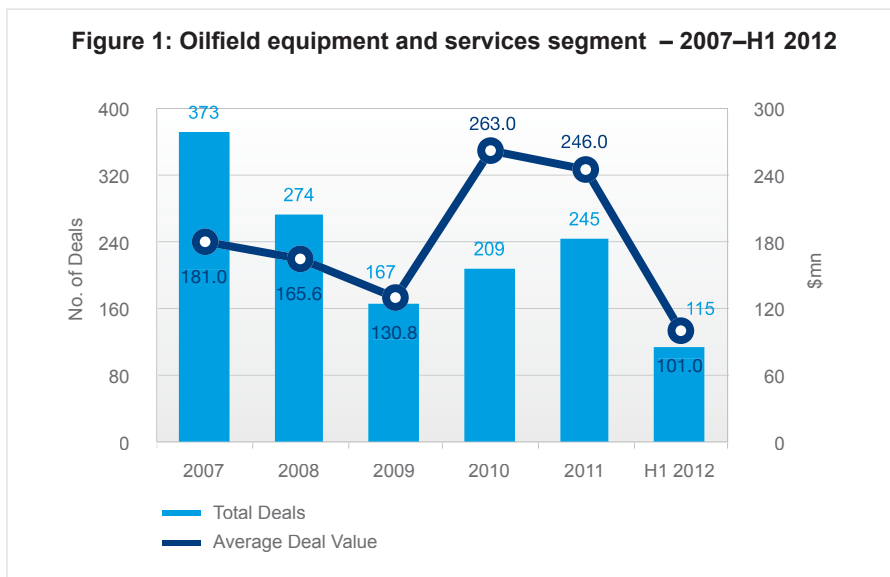
Analysis by Deal Number and Value

Oil production volumes largely depend on oil companies' views of the oil demand outlook. When the world economy slipped into recession in 2008–2009, oil volumes fell sharply too. Global crude oil production per day (including lease condensate) decreased to 72,229,000 barrels in 2009 from 73,575,000 in 2008. According to the World Bank, global GDP growth (in purchasing power terms) fell to 2.8% in 2008 from 5% in 2007. The impact of the recession also restricted OFS sector M&A activity, with both corporate and government finances under considerable stress. Consequently, between 2007 and 2009, the total number of deals reported in the OFS segment decreased to 167 from a peak of 373 (Figure 1), while the average deal value also fell to \$130.8mn from \$181mn for the same period.

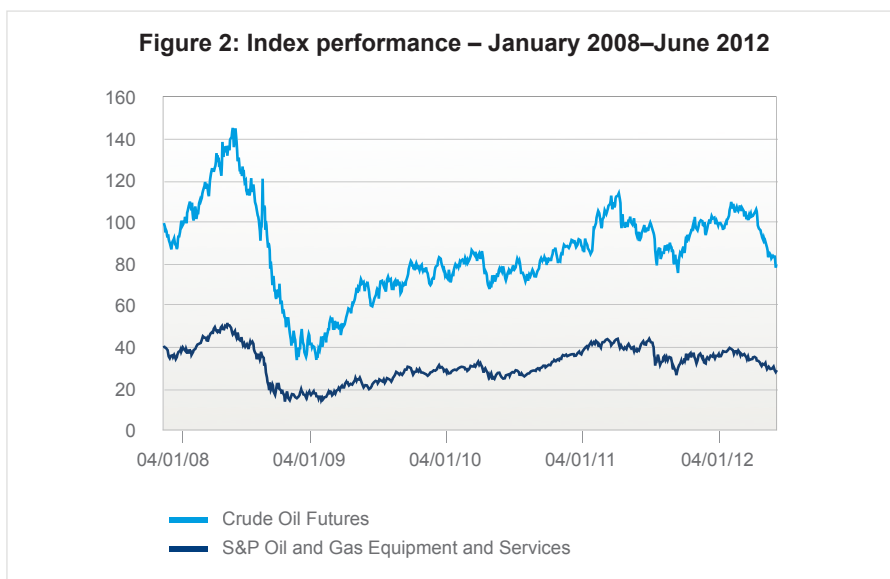
Despite continuing strong OFS business fundamentals, the slump in oil prices between July and December 2008 from \$150 to \$36 per barrel (Figure 2), following a sharp slowdown in economic growth, further restricted M&A deal volumes. But subsequently, both deal values and volumes rose as conditions improved. Oil prices recovered, albeit gradually, as economic growth accelerated and companies increased oil and gas production to meet the stimulus-induced rise in demand. Nevertheless, several firms failed to survive the period immediately following the recession due to the adverse effects of production cuts.

OFS businesses are multi-sized. Though both small and independent firms have maintained their identity, only the latter have become larger, increasing their market shares through acquisitions of small and niche businesses. Cost synergies are a highly important component of oil and gas industry operations.

During H2 2010, a total of 99 deals were closed, with an average value of \$125mn



Source: Copal Analysis and S&P Capital IQ



Source: Copal Analysis

(Figure 3). Activity subsequently accelerated as market sentiment improved, with both strategic and financial buyers seeking to leverage M&A opportunities in high-growth areas. In H2 2011, deal activity peaked at 134, with an average size of \$234mn. But in H1 2012, OFS sector M&A transactions decreased as investors questioned whether the global economic recovery was sustainable. Despite concerted efforts by

policymakers worldwide, the European sovereign debt crisis remains unresolved. In July 2012, the IMF cut its global GDP growth forecast for 2013 to 3.9% from 4.1% in April 2012 (in 2010, worldwide GDP was 5.3% higher). In H1 2012, a total of 115 OFS segment transactions occurred, with an average deal size of \$101mn. We believe OFS M&A activity will remain at recent levels due to continuing high levels of oil exploration.

M&A Overview and Analysis (July 2010–June 2012)

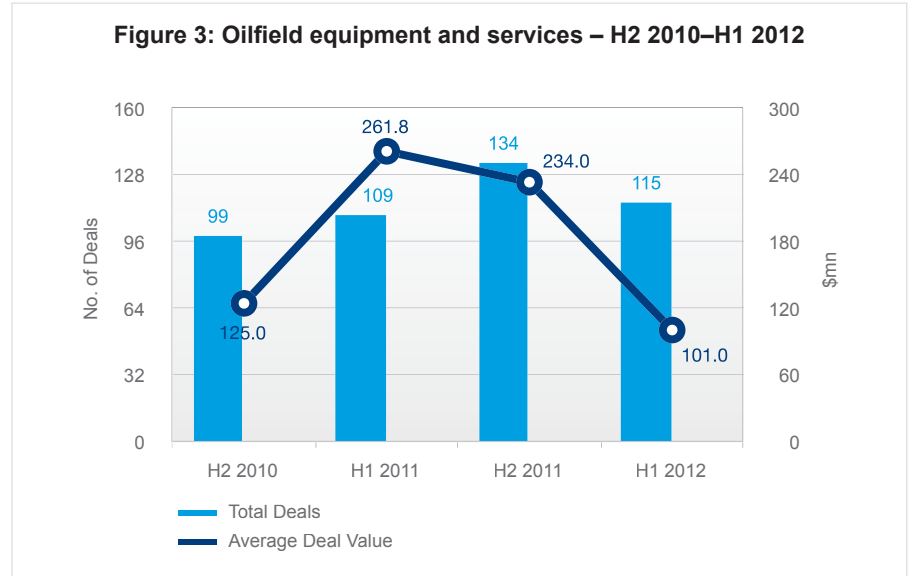
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Moreover, in the near term, oil prices are expected to remain high due to the perceived supply risks stemming from the embargo on oil exports from Iran (the world's fifth largest producer) and any consequent move to block the Strait of Hormuz, through which nearly 40% of total global oil freight passes. Low reserve capacity (and heavy dependence on Saudi Arabia) leaves oil prices highly vulnerable to such geo-political tensions. Moreover, we recall that in the past 10 years, oil production has risen by only 11% even though E&P expenditure has increased by over 400% in nominal terms. The increasing E&P outlay needed to meet ever growing global oil demand further supports the favorable business environment for OFS companies.

Segment Analysis of M&A Activity

Unconventional oil and gas segment exploration is catalyzing the entire oil and gas value chain for both E&P and OFS companies. A significant share of M&A activity will continue to involve the acquisition of drilling technology, including fracturing and horizontal drilling, both best suited to unconventional industry sub-segments. In addition, new composite and flexible pipe technology, highly engineered equipment, and specialized drillships and floating production, storage and offloading (FPSO) vessels are also driving significant offshore M&A activity.

Several notable transactions occurred between July 2010 and June 2012, including URS Corporation's acquisition of Canadian-based Flint Energy Services for \$1.5bn, which was completed in May 2012. The transaction significantly enlarged URS' share of the oil and gas industry, particularly the expanding North American unconventional oil and gas segments. Flint Energy was a leading provider of construction services for the oil and gas industry while URS Corporation offers a comprehensive range



Source: Copal Analysis and S&P Capital IQ

of engineering, procurement and construction services. Furthermore, London-based offshore oil drilling contractor Ensco acquired Pride International for \$9.2bn. As a result, Ensco expanded its deepwater fleet by adding drillship assets and ensured substantial market representation in the high-growth Brazilian and West African markets. The transaction enabled Ensco, the world's second-largest offshore drilling company, to more closely align its market share with that of its competitor, Transocean. The acquisition was completed in May 2011.

Substantial oil exploration activity now occurs in deepwater drilling after less costly, more accessible shallow-water drilling opportunities have been realized. During the past 10 years, over 50% of all new global resources have been discovered offshore. According to the International Energy Agency (IEA), offshore oil production is expected to supply approximately 30% of global requirements by the late 2020s. At the same time, deepwater production will increase steadily to around one third of offshore supply, comprising approximately 10% of worldwide oil supply.

Middle market active



"We expect activity this year to be concentrated in the middle market as major companies seek to extend their service portfolios and technological competence rather than simply their market share."

Maarten Wolleswinkel
President, M&A International Inc.
Energy Specialist
M&A International Inc.,
The Netherlands

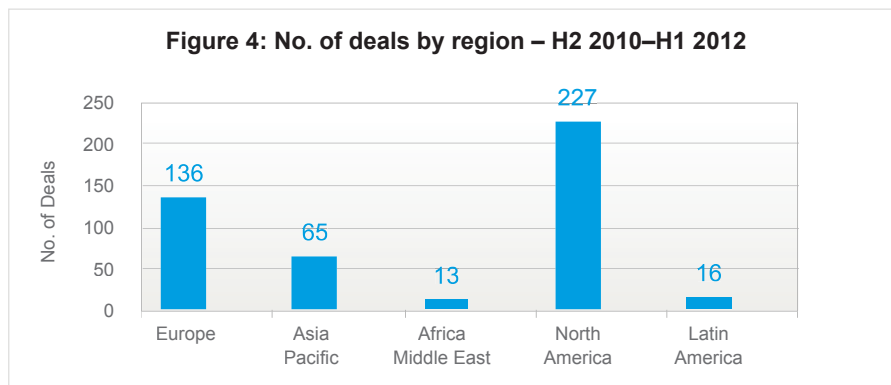
M&A Overview and Analysis (July 2010–June 2012)

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In February 2011, VetcoGray, a General Electric oil and gas subsidiary, completed its acquisition of Wellstream Holdings for \$1.4bn in a transaction which reflects General Electric's efforts to expand its industrial business (especially after exiting non-core activities) and consolidate and expand its position in Brazil. In April 2011, General Electric also completed its \$2.8bn acquisition of John Wood Group's well support division comprising three business platforms: electric submersible pumps, pressure control and logging services.

Adding future reserves is becoming increasingly complex and technologically more advanced, entailing additional costs and higher risk. As a result, it is becoming more important to de-risk exploration prospects prior to drilling. To do so, companies use oil and gas geophysical mapping and survey technologies. Consequently, substantial M&A activity has occurred in this sub-segment, although values have remained small.

Between July 2010 and June 2012, nine transactions exceeding \$1bn and 193 deals of less than \$100mn were reported. Significantly, private equity firms were particularly involved in typically small transactions (government-sponsored PE deals were an exception). Our observation is that M&A activity was not just centered around big names and big deal values. The middle market was also abuzz with M&A activity. For example, National Oilwell Varco (NOV) acquired Enerflow Industries, one of the largest manufacturers of onshore hydraulic fracturing equipment with 650 employees and operations across North America. NOV, which is a world-leading provider of major mechanical components for land and offshore drilling rigs, has been one of the most active acquirors in the middle market. It has spent approximately \$2bn on nine acquisitions so far in 2012, in addition to its planned purchase of Robbins & Myers for \$2.5bn, which it announced in August 2012. The acquisition of Ohio-based Robbins & Myers will further consolidate NOV's position as a lead-



Source: Copal Analysis and S&P Capital IQ

ing supplier of blowout preventers, which can shut off wells in an emergency. NOV's other notable transactions in 2012 include the acquisition of CE Franklin for \$239mn, Wilson International, Inc. for an undisclosed sum and NKT Flexibles for \$670mn.

In conclusion, while 2011 was characterized by large transactions, we expect activity this year to be concentrated in the middle market as major companies seek to extend their service portfolios and technological competence rather than simply their market share. We also expect higher costs associated with increased service intensity to encourage E&P companies to reduce expenses by bringing more OFS business activity in-house, driving further sector consolidation.

Regional Analysis of M&A Activity

From July 2010 to June 2012, North America dominated OFS segment M&A activity with 227 deals (50% of the worldwide total by volume), followed by Europe (136 deals: 30%) and Asia Pacific (65 deals: 14.2%) (Figure 4).

Regionally, North America reported M&A transactions with an aggregate disclosed value of \$29.8bn, representing 62% of a worldwide total of \$47.8bn. The US posted 160 deals and Canada 67.

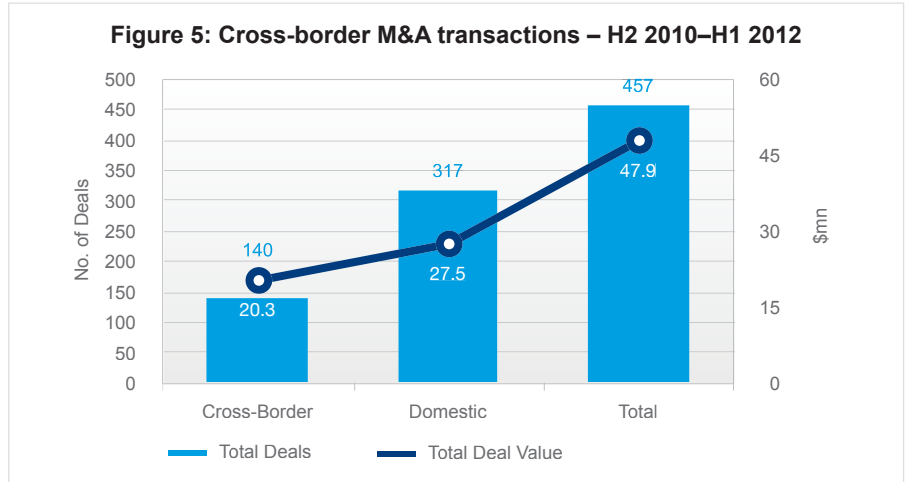
The two largest deals involving a US-based target company were Ensco's acquisition of Pride International for \$9.2bn and Superior Energy Services, Inc.'s purchase of Complete Production Services, Inc. for \$3.3bn in February 2012. Superior provides E&P companies with technical resource extraction expertise and equipment. Complete's comprehensive knowledge and experience of hydraulic fracturing (natural gas extraction employed in deep natural gas well drilling) will complement Superior's representation in oil production regions worldwide. The combination also provides Superior more access to US land markets much sooner than it could have accomplished on a stand-alone basis, while providing important completion and intervention services that it did not offer to its customers.

During the period under review, Europe reported closed M&A deals with a total value of \$9.3bn, equivalent to 19.5% of the global market. Based on transaction volume, the three largest M&A market destinations were Russia (44 deals), the UK (34) and Norway (28), representing 78% of total European deals. The largest transaction in Europe was Transocean's acquisition of Norwegian-based Aker Drilling ASA for \$3.4bn in August 2011, providing the buyer with access to its sixth-generation ultra-deepwater, dual-activity fleet comprising two harsh environment, semisubmersible drilling rigs, currently on long-term contracts in Norway, and two drillships under construction in Korea.

M&A Overview and Analysis (July 2010–June 2012)

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OFS segment synergies are extremely significant due to ongoing cost inflation. For example, Integra, Schlumberger and Geotech Holding agreed to combine their Russian geophysical and seismic assets in a transaction completed in December 2011. It established one of the world’s largest land seismic companies, with leading Russian and CIS market positions and access to all key regional clients and provinces. The companies expect to realize annual cost savings exceeding \$15mn by optimizing logistical and maintenance facilities and other overheads within 12 months of completion, with further revenue and cost benefits anticipated from improved asset utilization and logistics.



Source: Copal Analysis and S&P Capital IQ

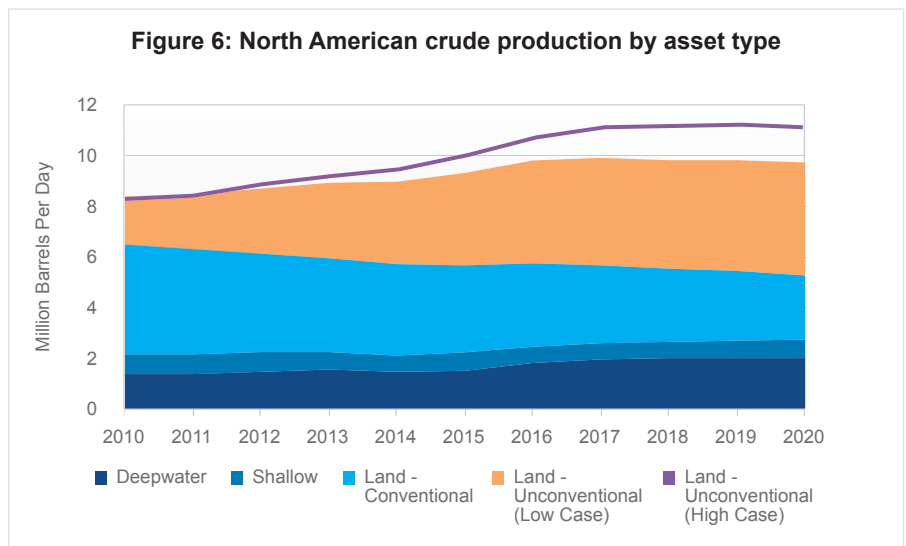
Immense opportunity



“The increased importance of shale production has revolutionized the North American production landscape, creating immense opportunities within the OFS segment.”

Mike Stengle
Energy Specialist
M&A International Inc.,
United States

Asia reported a disclosed total deal value of \$6.5bn, equivalent to 13.5% of total global deal value. By volume, the most popular M&A destinations were Singapore (15 deals), Malaysia (14) and Australia (13), representing 64% of total regional deal



Source: Schlumberger Company Data

value. The largest Asian acquisitions were those of Sapuracrest Petroleum Berhad and Kencana Petroleum Berhad by SapuraKencana Petroleum Berhad in May 2012 for a combined price of \$4.5bn. As a result, SapuraKencana Petroleum Berhad became Malaysia’s leading oil and gas service provider and one of the world’s five largest oil and gas service companies based on asset value. The acquisition reflects the emergence of NOCs as significant participants in the oil and gas industry as governments look, with increasing urgency, to secure their respective energy requirements.

Out of 457 deals reviewed, 140 were identified as cross-border (Figure 5). North America reported the largest number of cross-border transactions worth a total of \$13bn (\$12.2bn inbound and \$819.8mn outbound). Total domestic transactions of nearly \$17bn indicate a sector consolidation trend and highlight the fact that the US and Canada remain the busiest countries for OFS sector M&A transactions as unconventional segment activity accelerates (Figure 6). Significantly, the increased importance of shale production has revolutionized the North American production landscape, creating immense opportunities within the OFS segment.

M&A Overview and Analysis (July 2010–June 2012)

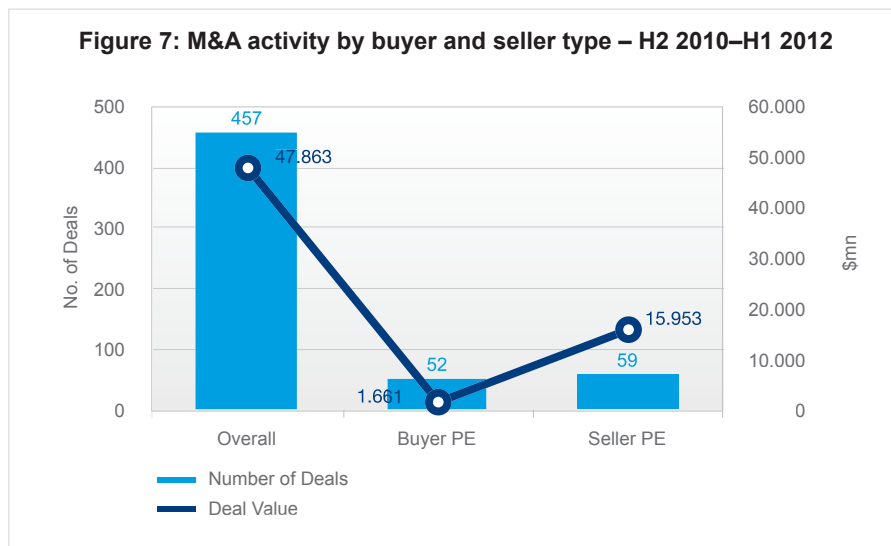
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Analysis of Private Equity Activity by Buyer and Seller Type

In the review period, private equity buy-outs accounted for 52 (11.4%) out of 457 deals and 3.5% of total disclosed M&A deal value (Figure 7). Buying activity within the OFS segment has remained subdued due to the lack of affordable bank debt. However, it did accelerate between July 2011 and June 2012, with PE transactions aggregating \$1.5bn compared with \$148mn during the preceding 12 months. The largest transaction involved the \$850mn acquisition of Riverstone Holding's stake in Seajacks International by Marubeni Corporation, one of the largest Japanese trading companies, and Innovation Network Corporation of Japan, a government-sponsored PE company. Seajacks owns and manages several self-propelled jack-up vessels specially equipped to operate in harsh North Sea conditions. Riverstone's and Seajacks' management acquired all Seajacks' shares in January 2010 and delisted the company. Subsequently, Seajacks has expanded its European operations and is enlarging its current fleet.

A PE business also acted as buyer when Dalea Management, LLC and Abraaj Investment Management acquired Viking International Ltd. and Viking Geophysical Services Ltd., the oilfield services operations of TransAtlantic Petroleum Ltd., a publicly listed company, for \$167.2mn in February 2012. Viking is a fully integrated oilfield services company operating in Turkey, Bulgaria and Romania, with plans to expand into geographically strategic, underserved emerging markets.

In April 2011, Frac Tech, a Texas-based pan-US provider of oil and natural gas well stimulation services specializing in high-pressure hydraulic fracturing, agreed to sell 70% of the company to a consortium led by Temasek Holdings Pte. for \$3.5bn. The transaction demonstrates the willingness of Asian trade buyers to expand internationally and to acquire new technology.



Source: Copal Analysis and S&P Capital IQ

An analysis from the seller's perspective reveals PE firms accounted for 12.9% of total deals and 33.3% of total deal value. They were involved in 59 M&A transactions worth almost \$16bn, the largest of which was Transocean's acquisition of Norwegian-based Aker Drilling ASA from TPG-Axon Capital Management L.P. and Aker Capital ASA for \$3.4bn in August 2011. Similarly, Technip S.A., Europe's second largest OFS company, acquired the interests of several PE firms (Wellington Management Company, LLP; Security Investors, LLC; Wells Fargo Funds Management, LLC; Franklin Advisory Services, LLC) in Global Industries for \$1,039mn. The transaction increases Technip's share of the underwater energy project market.

Companies sold by PE firms were acquired by both OFS and oil companies, which continue to expand in high-growth areas. Both are currently cash-rich following sustained oil price increases and consequent improvements in rental rates for deepwater rigs since 2008. PE firms have achieved highly attractive investment returns on post-recession investments, when valuations of companies engaged in oil and natural gas drilling and production bottomed due to the negative growth outlook. In particular, US-

based Chesapeake Energy Corporation acquired Bronco Drilling Company, which provides contract land drilling services to oil companies, from a PE consortium for \$342.8mn in April 2011 to increase its rig fleet. As a result, the company is closer to meeting its target of owning approximately 200 drilling rigs by the end of 2012. Chesapeake is the second largest natural gas producer in the US behind Exxon Mobil Corporation.

Valuation Multiples

Transaction multiples for strategically important acquisitions have remained high, as shown by the acquisition by National Oilwell Varco Norway (NOV) AS (a subsidiary of National Oilwell Varco, Inc.) of Advanced Production and Loading (APL) PLC for \$554.9mn in December 2010, the equivalent to an EV/EBITDA multiple of 30.7x. APL designs and manufactures turret mooring systems and other products used in FPSOs. NOV regards this segment as strategically significant, with high growth prospects. The acquisition multiple can be compared with a two-year historic median multiple of 8.5x paid for oil and gas equipment and services

M&A Overview and Analysis (July 2010–June 2012)

The outlook



“Company valuations largely reflect market sentiment concerning the outlook for economic growth and the value added to acquiror operations. We believe OFS valuations are also determined by several key factors, including greater exposure to high-growth markets and access to technologies that reduce costs and improve performance.”

Adrian Bradbury
Energy Specialist
M&A International Inc.,
China

companies (Source: S&P Capital IQ). When the deal was concluded, crude oil futures were recovering strongly, trading around \$90 per barrel.

Our analysis shows that companies involved in large transactions are often prepared to pay a significant premium, partly because they have substantial resources and partly because other competitors are prepared to submit counter-offers. All transactions exceeding \$1bn (except one) were priced at a double-digit implied enterprise value/EBIT-



DA multiple. The exception was the agreement by Superior Energy Services, Inc. to acquire Complete Production Services, a deal which took place when energy prices had fallen sharply on fears of a double-dip recession. Lower prices eroded the valuations of several energy companies, rendering them attractive acquisition targets.

Company valuations largely reflect market sentiment concerning the outlook for economic growth and the value added to acquiror operations. A potential increase in economic activity would support high crude oil and natural gas prices, in turn compelling oil companies to increase oil production, ensuring substantial demand for OFS services. Furthermore, we believe OFS valuations are also determined by several key factors, including greater exposure to high-growth

markets, national oil companies' activity, access to technologies that reduce costs and improve performance, and the timing and certainty of North American shale and oil sand developments.

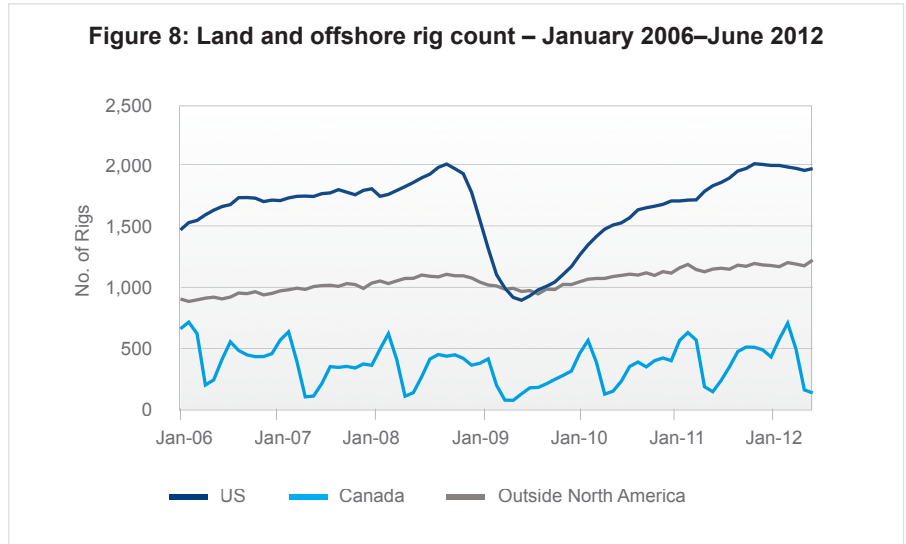
Key Near-Term M&A Drivers

Energy Independence, the Great American Dream

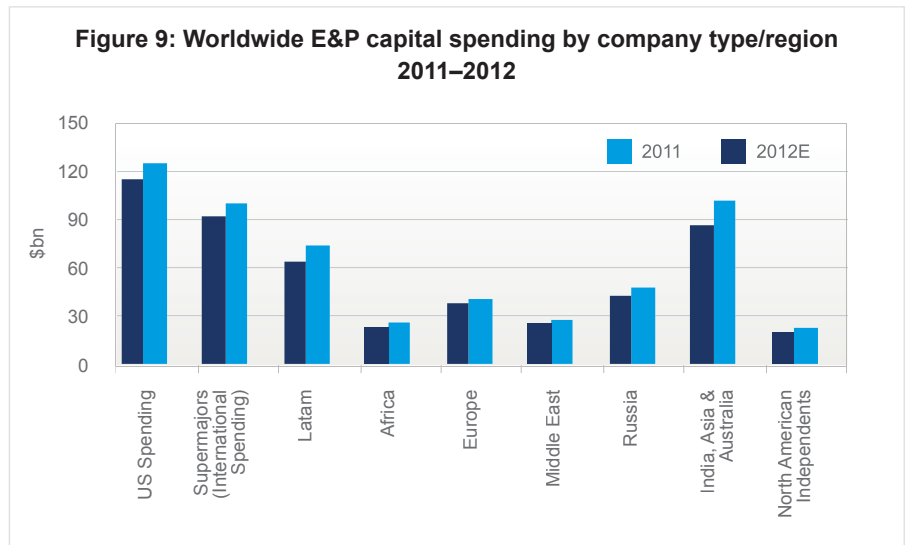
According to the US Energy Information Administration (EIA), by 2020, nearly 50% of US crude oil consumption will be domestically produced, 82% of which will come from the US side of the Atlantic. While economic activity has remained well below its pre-recession level, the North American rig count has returned to near 2008 levels, while the international market, which accounts for approximately 70% of all E&P spending on OFS, continues to post steady annual increases (Figure 8). Going forward, we expect the biggest OFS stimulus to come from the US targeting energy independence. According to Philip Verleger, a University of Calgary economist, the US will become energy independent by 2023, the 50th anniversary of President Nixon's announcement of "Project Independence", i.e. an energy-surplus nation.

US President Barack Obama targets a one-third reduction in US oil imports by 2025 by increasing domestic oil production and use of natural gas and renewable resources. The five-year initiative, announced as part of the US Department of the Interior plan in June 2012, includes 12 block sales in the Gulf of Mexico and auctions involving Alaska's Cook Inlet in 2016, Chukchi Sea in 2016 and Beaufort Sea in 2017. According to EIA estimates, these particular regions are home to over 75% of total undiscovered and recoverable oil.

With the US determined to become energy self-sufficient, OFS companies will clearly benefit from regional demand. This should in turn stimulate increased deal-making activity. Of course, the companies most targeted will be those that help reduce costs and ensure compliance with increased regulatory provisions, especially following the Macondo oil disaster in the Gulf of Mexico, which temporarily shut down activity and permanently transformed industry dynamics through the imposition of rigorous supervision and increased regulatory costs.



Source: Copal Analysis and Baker Hughes Company Data



Source: "Barclays Global E&P Capital Spending Update", May 2012. E=estimates

Increasing E&P Expenditure and High Oil Prices Positive for OFS Sector

Both global exploration activity and production expenditure continue to increase despite persistent economic concerns in Europe and the recent decline in oil prices. This is positive for OFS companies. Higher prices will ensure continued high oil production, from

which the OFS sector would benefit directly. According to Barclays ("Global E&P Capital Spending Update", May 2012), global E&P spending in 2012 is expected to increase to \$614bn, up from \$556bn in 2011. It argues that the total increase in expenditure should be led by international growth, with overseas expenditure forecast to rise by 12%, compared with 6.4% in North America (Figure 9).

Key Near-Term M&A Drivers

Growing OFS spending



“Barring a long-term decline in oil prices, we believe international E&P budgets will support continuing growth in OFS spending. Very significantly, over 35 oil and gas companies have annual capital expenditure budgets in 2011 exceeding \$4bn, compared with only 10 in 2001.”

Robert Fernstrom
Energy Specialist
M&A International Inc.,
Thailand

We strongly believe that despite continuing macroeconomic concerns, lower US domestic natural gas prices and the recent volatility in global oil prices, expectations concerning worldwide growth in oil demand remain sound. Non-US natural gas prices are also forecast to continue to be well supported. With the US economic sanctions against Iran effective since 28 June and European Union sanctions since 1 July 2012, oil prices are expected to face upward pressure. Based on International Energy Agency (IEA) estimates published in June 2012, oil importing countries bought nearly 1mn barrels less of Iranian oil per day in April and May 2012, compared with late 2011.

Higher oil prices will also be supported by the fact that producers require them to fund

social spending programs and meet growing domestic demand. While oil prices may also experience downward pressure from a potential economic contraction in Europe, slowing growth in China and other emerging economies, and an expected increase in the supply of Libyan oil, we do not expect these developments to have a lasting long-term impact. Consequently, barring an unlikely long-term decline in oil prices, we believe international E&P budgets will support continuing growth in OFS spending. Very significantly, over 35 oil and gas companies have annual capital expenditure budgets in 2011 exceeding \$4bn, compared with only 10 in 2001.

The Unconventional Resource Bonanza and Hydraulic Fracturing

E&P companies are investing a major share of total cash flows in developing unconventional reservoirs – shale rock or coal beds. Advances in horizontal drilling and hydraulic fracturing combined with abundant shale resources are driving the current drilling boom, a trend we expect will continue in the next few years, even as shale activity expands further worldwide. The EIA estimates that shale gas accounts for over 25% of all US natural gas production, its highest level since 1973.

Companies and PE firms, both within and outside the US, are scrambling to acquire assets in the fast-growing shale sector. Chevron Corporation bought US natural gas producer Atlas Energy in February 2011 for \$3.2bn, becoming one of the last major oil companies to enter the Marcellus shale field (one of the largest natural gas fields in the world). It acquired Atlas' 60% field stake and will operate a joint venture in the Marcellus shale with India's Reliance Industries. Cerberus Capital Management, L.P., a PE firm specializing in providing both financial resources and operational expertise in the

energy sector, acquired the drilling and fracturing services of Keane & Sons Drilling in March 2011. The target company operates in the Marcellus shale field and was looking for funding to augment its fracturing service offerings.

The shale gas revolution has opened a new paradigm of opportunities for OFS companies specializing in hydraulic fracturing and horizontal drilling. Hydraulic fracturing is currently the key technology enabling shale gas production. OFS companies with particular expertise in unconventional drilling equipment have enjoyed some of the fastest industry growth rates in recent years. In addition, they have also witnessed a continued increase in service intensity and in the amount of horsepower, water and proppant used.

Shale gas revolution

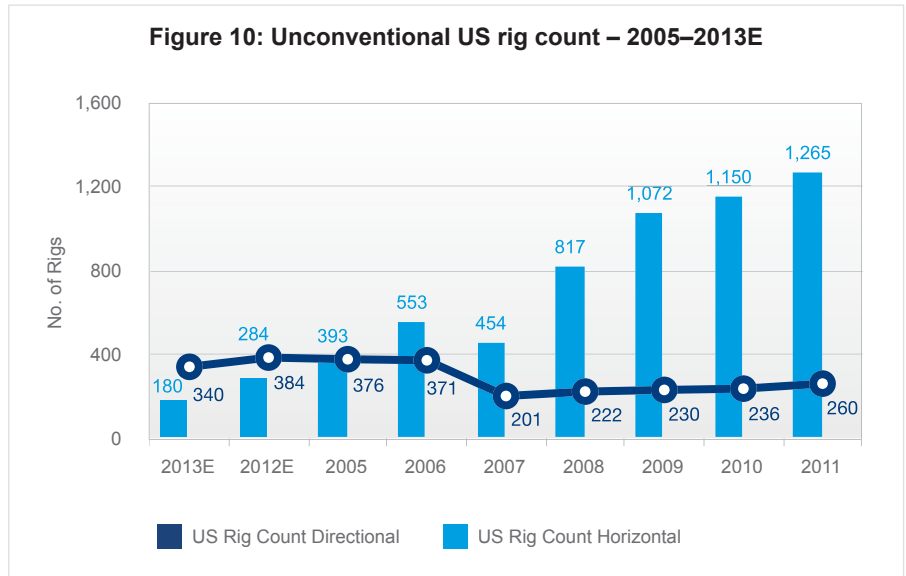


“The shale gas revolution has opened a new paradigm of opportunities for OFS companies specializing in hydraulic fracturing and horizontal drilling. Hydraulic fracturing is currently the key technology enabling shale gas production.”

Paul Young
Energy Specialist
M&A International Inc.,
Australia

Key Near-Term M&A Drivers

Energy companies are taking urgent steps to access shale rock formations using hydraulic fracturing, a technique in which water, sand and chemicals are injected at high pressure into rock, causing cracks that allow gas to be extracted. Furthermore, overseas companies are becoming increasingly involved in the North American market, mainly through joint ventures. They are concluding acquisitions and joint venture investments in the E&P and OFS segments, targeting technological expertise and drilling acreage, a trend evidenced by inbound M&A transactions worth \$12.2bn during July 2010–June 2012. We expect such developments to continue in subsequent years as overseas buyers seek to acquire control of energy assets.



Source: "Barclays Global E&P Capital Spending Update", May 2012. E=estimates

Niche segments



"While less significant in value terms, recent acquisitions in the oil and gas geophysical mapping and surveying sub-segment seem to have made it one of the most sought-after segments among acquirors."

Raymond Donegan
Energy Specialist
M&A International Inc.,
Ireland

The acquisition of US wellhead specialist Seaboard Holdings by Weir Group, a Scottish pumps and drilling equipment manufacturer, for \$678mn in November 2011, demonstrates increasing interest in companies with technology useful in hydraulic fracturing. Based in Houston, Texas, privately-owned Seaboard manufactures engineered wellhead and pressure control equipment for oil companies. Weir made another acquisition just two months later and added Texas-based valve maker Novatech for \$176mn to its shopping cart. Both these acquisitions further strengthen Weir's presence in the North American unconventional oil and gas segment. It also builds a larger upstream product range to offer developing international shale markets.

The engineered fluid systems segment has also created interest. The current shortage of high horsepower engines may be offset by the availability of engineered fluid systems, which are vital in reducing horsepower, water and proppant requirements per unit of production.

To maximize the recovery of hydrocarbons from unconventional reservoirs, it

is necessary to rotate a vertical well and drill horizontally to expose the wellbore to a greater reservoir surface area, a technique which requires a high-horsepower drilling rig and very sophisticated drilling tools. Advances in completion technology, especially multi-stage hydraulic fracturing, are used to increase well productivity. According to estimates prepared by Moody's Investors Service, Inc., OFS companies earn three–five times more for drilling and completing an unconventional well than for its conventional counterpart. Firms specializing in horizontal drilling have reported a sharp increase in demand for their products, with such rigs a key component in unconventional hydrocarbon extraction activities (Figure 10).

While less significant in value terms, recent acquisitions in the oil and gas geophysical mapping and surveying sub-segment seem to have made it one of the most sought-after segments among acquirors. Geosciences consultancy companies help oil companies locate oil and gas by using sophisticated mapping and surveying techniques. The increasing importance of such methods underlines the emphasis that the oil and gas

Key Near-Term M&A Drivers

industry give to effective risk management. We expect further expansion of unconventional drilling techniques, particularly in the search for oil and shale gas, to highlight the significance of sophisticated 3-D/4-D seismic mapping and surveying technologies (and the companies which provide them), creating potential acquisition targets.

The Increasing Importance of National Oil Companies and Consequent OFS Benefits

National Oil Companies (NOCs) are majority owned by a national government. In recent years, they have become the largest sources of capital investment in oil and gas exploration projects and are expected to remain key participants in the coming years. As energy demand increases outside North America and other developed countries, NOCs from emerging markets have begun to play an increasingly important role in the search for oil and gas reserves worldwide.

Recently, China's state-owned CNOOC Ltd. agreed to pay \$15.1bn in cash to acquire Canada's Nexen Inc. Through Nexen, CNOOC will get access to Canada, UK, West Africa and the Gulf of Mexico. Previously, CNOOC had made a hostile \$18bn bid for American gas company Unocal in 2005, and even offered to pay more than Chevron. The Chinese firm, however, was forced to relinquish its bid after American lawmakers termed it as a threat to national security.

Most distinctively, due to cash availability, NOCs adopt longer-term investment horizons with spending patterns that are less cyclical and less correlated to short-term changes in oil and natural gas prices. Consequently, unlike that of the US, the international rig count has remained relatively unaffected over the years. By implication, international OFS demand is less cyclical than in North America.

One-stop solutions



"Companies aiming to become one-stop solution providers will seek to partner with or acquire smaller companies with expertise in the manufacturing or operation of specialized drilling machinery equipment or in geophysical mapping."

Nikolai Lunde
Energy Specialist
M&A International Inc.,
Norway

NOCs (together with smaller independents but excluding supermajors) represent over 75% of total industry capital expenditure. International OFS demand, particularly from NOCs, is accelerating alongside energy consumption in China and India, regions where state-owned oil companies are dominant market participants. NOCs are increasingly collaborating with OFS firms on new developments, including shale gas resource exploration and drilling, enabling them to both maintain control of hydrocarbon reserves (as opposed to inviting private players) and access ground breaking technology that enables extraction of unconventional resources. For instance, since 2010 Chinese oil companies have invested as much as \$5.9bn to secure minority stakes in American energy firms to teach Chinese managers and geologists techniques in unconventional drilling.

The Emergence of Integrated OFS Companies

Most oil exploration and extraction is conducted by a very small number of growing OFS companies. Smaller firms operate in niche areas, particularly geosciences. Prospectively, we believe integrated OFS companies will play an increasingly important role in maximizing the potential of existing and new hydrocarbon resources. In August 2010, Schlumberger Limited acquired Houston-based Smith International, a manufacturer of drilling bits and other tools used in oil and gas production, for \$14.6bn, mainly to "fulfill its vision of fully integrated and engineered drilling." Schlumberger Limited expects the transaction to diversify its product portfolio and improve its competitiveness, particularly with Halliburton, also a major OFS company.

We believe, over the next few years, companies will seek to further strengthen their competitive positions by: developing and diversifying their product portfolios to be at the forefront of new technology developments; developing economies of scale; and achieving better negotiating positions with their customers. In addition, potential consolidation among the oil majors (driven by increased pressure from NOCs) could accelerate consolidation among OFS companies. Companies aiming to become one-stop solution providers will seek to partner with or acquire smaller companies with expertise in the manufacture or operation of specialized drilling machinery equipment or in geophysical mapping. Here OFS companies will also be pitted against international oil companies and NOCs. Until relatively recently, due to the substantial investments required to compete in the oil and gas industry and to withstand the effects of volatility in the rig drilling industry, oil companies have tended to expand by acquiring drilling rigs and other related technologies.

Conclusion and Outlook

Very few industries face such a wide range of complex challenges as the OFS industry, be it economical, technological, geographical, political or regulatory. Nevertheless, OFS business fundamentals remain strong. Historically, OFS companies have performed resiliently due to increasing global demand for energy, particularly from emerging economies in Asia and limited worldwide supply of crude oil and hydrocarbons.

Specialization is key



"We expect the industry to benefit considerably from E&P-related capital expenditure, due to continued high oil prices and major investment opportunities in unconventional resources. These developments will drive sector M&A activity as both OFS and oil companies seek to acquire strategic, highly valued products and services."

Paul Puri
Head of M&A International Inc.'s
Energy Group

The challenges faced by OFS companies mainly reflect the fact that to meet the problems posed by rapidly increasing costs, the industry needs access to advanced technol-

ogies that are also facing increasing political opposition. For example, while the technique associated with hydraulic fracturing is extremely popular within the industry, it has already been described as an environmental threat and has been banned in several countries, including France. With governments stressing the importance and value of OFS operational integrity, the development of such drilling techniques, although necessary, may become more difficult, especially following the 2010 Deepwater Horizon accident in the Gulf of Mexico. Furthermore, the technical success rate for exploration has remained largely unchanged at just under 40% for the past decade. In addition, the cost per discovered barrel is increasing. Therefore, we believe the widespread use of more complex and costly exploration techniques will drive demand for technologies that help de-risk potential prospects. Success will depend not just on acquiring next-generation technology. Instead, OFS companies are seriously considering demographic issues affecting the right skill set, an issue described by the industry as "the big crew change"⁴. The highly cyclical nature of the oil industry has resulted in a recruitment pattern that has been as volatile as oil prices. The industry stopped recruitments when oil prices plunged, a trend that has been evident since the 1980s. This has left the OFS industry now facing a huge skill gap as older engineers retire, while the relatively younger ones lack the expertise to carry out challenging new projects.

From an M&A perspective, we expect companies operating in service-intensive demand areas like higher-horsepower drilling rigs and more sophisticated and costly well completions to be potential targets. In addition, we expect fully integrated OFS companies to further increase market share through competition to acquire additional service offerings and technology. We also believe most M&A-related activity will be concentrated in a sub-sector of the middle

market, benefitting high technology firms serving both onshore and offshore, further concentrating the business activities of fully integrated OFS firms.

Compared with 10 years ago when oil was easier to locate, the OFS industry faces a completely new set of challenges. Nevertheless, we expect the industry to benefit considerably from E&P-related capital expenditure due to continued high oil prices and major investment opportunities in unconventional resources. These developments will drive sector M&A activity as both OFS and oil companies seek to acquire strategic, highly valued products and services.

⁴ The retirement of the workforce in the OFS industry is normally referred to as "the big crew change". While strong efforts were made to recruit in the 2000s, by 2015, the number of experienced industry professionals will have decreased substantially (Schlumberger Business Consulting survey data for 2010).

About M&A International Inc.



M&A International Inc.'s members actively represent buyers and sellers in the OFS industry as well as those seeking to raise private equity and debt capital. We possess significant OFS sector expertise, industry relationships and experience in successfully executing complex transactions on behalf of our clients.

www.mergers.net

Paul Puri

Head of M&A International Inc.'s
Energy Group
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Representative Transactions

Major Oilfield Equipment and Services M&A Transactions

Date Announced	Target	Acquiror	Deal Synopsis	Value (\$mn)
Aug 2012	National Oilwell Varco (US)	Robbins & Myers (US)	The acquisition of Ohio-based Robbins & Myers will further consolidate NOV's position as a leading supplier of blowout preventers, which can shut off wells in an emergency.	2,500.0
Feb 2012	Flint Energy Services Ltd. (Canada)	URS Corporation (US)	The acquisition was in line with URS Corporation's longstanding strategic priority of expanding its presence in the oil and gas sector. Flint was one of the leading fully integrated production and construction services providers to the North American oil and gas sector. By way of this acquisition, URS is now well positioned in segments where margins are attractive and growth rates are high.	1,488.7
Nov 2011	Seaboard International, Inc. (US)	The Weir Group PLC (UK)	The acquisition was a strategic fit for The Weir Group, which was looking to expand its presence in fracturing, one of the fastest growing segments in drilling. Based in Houston, Texas, Seaboard provides equipment such as high pressure hydraulic fracturing, as well as associated field and support services for the oil and gas drilling market.	678.0
Sept 2011	Global Industries Inc. (US)	Technip S.A. (France)	The acquisition of Global Industries reinforces Technip's leadership in the fast-growing subsea market. Technip also expects strong revenue synergies as the acquisition is likely to increase current capabilities and expand Technip's addressable market by around 30% in offshore infrastructure.	1,039.0
Aug 2011	Aker Drilling ASA (Norway)	Transocean Services AS (Switzerland)	The acquisition gives Transocean access to Aker Drilling's sixth-generation ultra-deepwater, dual-activity fleet, which contains two harsh environment, semisubmersible drilling rigs, currently on long-term contracts in Norway, and two drillships under construction in Korea.	3,435.6
May 2011	LeTourneau Technologies, Inc., a unit of Rowan Companies. (US)	Joy Global Inc. (US)	LeTourneau (a unit of Rowan Companies, Inc.) designs and builds drilling and mining products. The acquisition allows Joy Global to expand its portfolio of mining equipment and provides it with an entry point to the oil and natural gas industry.	1,000.0

Source: S&P Capital IQ. All deal values in USD are sourced from S&P Capital IQ

Representative Transactions

Date Announced	Target	Acquiror	Deal Synopsis	Value (\$mn)
April 2011	Frac Tech Holdings LLC (US)	Consortium led by Temasek Holdings Pte. (Singapore)	A consortium led by Temasek Holdings Pte., which includes South Korea's sovereign wealth fund, paid about \$3.5bn for the 70% stake in US energy company Frac Tech Holdings LLC. Temasek contributed more than \$1bn to the deal, while Korea Investment Corp. paid \$250mn. The consortium also includes Canada's Public Sector Pension Investment Board, which paid \$130mn. RRJ Capital, a new private equity fund launched by dealmaker Richard Ong, contributed \$400mn and played a leading role in assembling the deal.	3,500.0
Feb 2011	Pride International, Inc. (US)	EnSCO PLC (UK)	The acquisition of Pride International has helped EnSCO expand its presence to Brazil and West Africa, two of the fastest-growing offshore drilling markets. The acquisition has also increased its pre-tax operating cost savings and provides a big boost to EnSCO's backlog of unfilled orders.	9,219.4
Feb 2011	Wood Group's Well Support Division (UK)	General Electric Company (US)	The \$2.8bn transaction enables General Electric to capitalize on the fast-growing demand for enhanced oil recovery from mature oil fields using downhole pump artificial lift in brownfield developments, as well as expand General Electric's high-technology product and service offerings in unconventional oil and gas production, with significant applications in shale gas production.	2,800.0
Dec 2010	Advanced Production and Loading (APL) PLC (Norway)	National Oilwell Varco Norway (NOV) AS (Norway)	APL designs and manufactures turret mooring systems and other products for floating production, storage and offloading vessels (FPSOs). FPSO is viewed as an important and high-growth segment by NOV, and the company paid \$555mn for the business.	554.9
Oct 2010	Wellstream Holdings PLC (UK)	General Electric Austria GmbH (Austria)	The acquisition was in line with General Electric's long-term goal of strengthening its oil and gas business after exiting non-core assets like consumer finance and selling its security business.	1,380.9
Oct 2010	Complete Production Services, Inc. (US)	Superior Energy Services, Inc. (US)	This transaction helped accelerate Superior's access to US land markets and also provided it with important completion and intervention services that the company could not offer its customers previously.	3,283.6
Aug 2010	Smith International (US)	Schlumberger Limited (US)	The transaction allows the company to address new markets and develop new technologies. The transaction also aims to achieve a higher level of vertical integration.	14,646.7

Source: S&P Capital IQ. All deal values in USD are sourced from S&P Capital IQ

Representative Transactions

Recent Transactions Closed by Members of M&A International Inc.




BORD GÁIS

has acquired



SWS Energy

Energy and Utilities,
Multi-Utilities
Advisor to buyer
Ireland



**BRAESIDE
FABRICATORS INC.**

has been acquired by

a private investment firm

Industrials and Capital Goods,
Diversified Manufacturing
Advisor to seller
Canada/Venezuela



**CDK
PERFORATING**

has been acquired by

SCF PARTNERS

Energy and Utilities, Drilling
and Field Services
Advisor to seller
United States



ENERFLOW INDUSTRIES INC.

has been acquired by



NATIONAL OILWELL VARCO

Energy and Utilities, Energy
Machinery and Equipment
Advisor to seller
Canada/United States



ETO Energy Trends
Desenvolvimento de Negócios

has acquired W. Petróleo
creating



santana
óleo & gás

Energy and Utilities,
Oil and Gas Utilities
Advisor to buyer
Brazil




**EXCALIBUR
ENERGY
SERVICES INC.**

has been acquired by




**HECKMANN
CORPORATION**

Energy and Utilities, Drilling and
Field Services
Advisor to seller
United States




**GLOBAL
POWER**

has sold Deltak to




HAMON

Energy and Utilities, Energy
Machinery and Equipment
Advisor to seller
United States/Belgium



**GLOBAL
POWER**

has acquired



Koontz-Wagner

Energy and Utilities, Energy
Machinery and Equipment
Advisor to buyer
United States




**KEANE
& SONS DRILLING**
BRADFORD, PA

has been acquired by




CERBERUS
CAPITAL MANAGEMENT, L.P.

Energy and Utilities, Drilling
and Field Services
Advisor to seller
United States



**POTTER
TRUCKING
INC.**
DUMAS, TEXAS

has been acquired by



BLUEKNIGHT
ENERGY PARTNERS

Energy and Utilities,
Oil and Gas Utilities
Advisor to seller
United States



THE MUDLOGGING COMPANY USA

has been acquired by

SCF PARTNERS

Energy and Utilities, Drilling
and Field Services
Advisor to seller
United States

Wright Trucking, Inc.

has been acquired by



HASTINGS
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Energy and Utilities, Drilling
and Field Services
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United States

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Founders of the M&A Mid-Market Forum (www.midmarketforum.com).

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