

## The Allure of Deepwater Subsea Oil and Gas Developments

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Oilfield service and equipment providers that focus on deepwater projects hold much appeal for private equity investors. Oil and gas producers' investments in these projects are relatively insulated from short-term oil price fluctuations, since they deliver long-tailed payouts when they come on line. But identifying the best candidates for these oilfield service and equipment company investments is hardly straightforward, especially when assessing middle-of-the-pack companies that nevertheless may have potential for strong returns. It's critical to develop a thorough understanding of the business designs of these companies and thereby determine which are best positioned to deliver superior results.

**B**etting on oil and gas prices will always be a tough call, but the most recent rise-and-fall cycle in commodity prices was severe enough to sour investor enthusiasm for the oilfield services sector. Now, many private equity firms are determined to identify opportunities that do a better job of maximizing profit potential while minimizing exposure to commodity fluctuations.

Private equity investors must look below the surface—indeed, far below the waterline—to find options capable of generating good returns in a wide range of market conditions. Deepwater subsea developments can provide a commanding position in oilfield services that insulates investors against many of the frustrations associated with commodity price fluctuations. The deepwater market niche has exploded into a \$20 billion category populated by scores of companies of all sizes—many of which have outperformed the broader oilfield services sector for more than a decade.

### Fathoming Deepwater Investments

Investors looking for the strongest players in this niche should first understand the market forces that insulate deepwater projects from commodity price fluctuations, and then decide which business designs offer the best match to capitalize on market

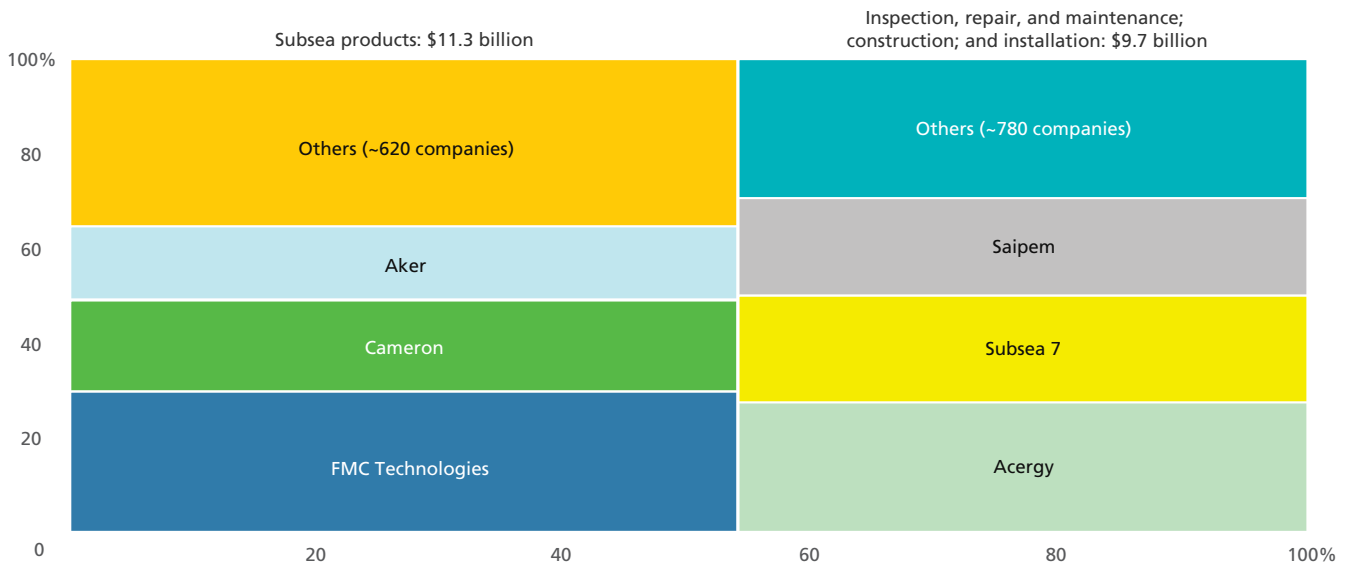
opportunities. Most deepwater projects are distinguished by and ultimately benefit from a combination of three characteristics:

- **Extended planning and execution horizons.**

Deepwater development projects are among the largest and most technically sophisticated in the oil and gas industry. Given the scale and complexity of these projects, operators can take up to a decade to bring a deepwater field into full production. Unlike a land-based rotary rig that can be started, idled, or cancelled in response to commodity prices, deepwater projects have a scale and a momentum that make them very difficult to stop. As these projects ramp up, operators and their partners focus on the long-term prize and largely ignore the short-term problems associated with oil and gas price fluctuations. Of course, even deepwater projects would be vulnerable to a prolonged period of oil prices of \$20 per barrel. But even if this worst-case scenario hits the energy industry, investors should appreciate that deepwater projects will be among the last to be postponed.

- **Continuous advances in technology.** The maximum water depth for subsea completions has been growing and is now measured in miles, thanks to engineering expertise that has overcome

Exhibit 1 The subsea market



Note: Subsea products exclude ROVs and AUVs. IRM, construction, and installation excludes engineering and project management. Source: Company financial reports, Douglas Westwood, equity research reports, Oliver Wyman estimates.

subsea pressures and temperatures once considered insurmountable. Technology advances have a profound influence in the subsea segment of oil and gas, where long-term payouts are the norm and even a small improvement in efficiency can translate into tens of millions of dollars over the course of a deepwater project. As new equipment becomes available, and new techniques are tested, deepwater development projects become more viable, efficient, and economical over time.

For example, consider “smart completions,” which allow operators to remotely monitor pressures, temperatures, and water influx, and to adjust their equipment configurations for maximum efficiency. Smart completions avoid costly interventions and can boost production; even a 1% increase in production over the life of a field can have a significant impact on an operator’s return on investment. At deepwater projects throughout the world, operators are booking “production dividends” driven solely by technology enhancements, benefitting investors throughout the deepwater supply chain.

Another example involves two respected companies, FMC Technologies and Cameron, which introduced new ways of handling subsea processing for clusters of wells. Without cost-effective options at the surface, processing support for multiple deepwater wells must be performed on the ocean floor. When FMC Technologies and Cameron improved the economics of ocean-floor processing, operators quickly embraced the new techniques and began development work at fields previously viewed as marginal properties. As these and other firms find ways to help increase production and reduce lifting costs at deepwater projects, history suggests that the industry will beat a path to their door.

- **Reliance on highly skilled people.** The demands of subsea operations put a premium on project management acumen. Engineers in various sectors of the oil and gas industry concur that deepwater projects employ the “best and brightest”—and there are only so many of these people to go around at every pay grade, from project manager to maintenance worker. The top-to-bottom exper-

tise throughout the deepwater industry has justifiably given investors an extra measure of confidence. For example, when Hurricanes Katrina, Rita, and Ike churned through the Gulf of Mexico, no deepwater project lost a drop of oil. The best-managed companies in this segment know the value of rewarding and retaining their experienced, skilled workers, and investors looking for signals of future performance should look for low employee turnover.

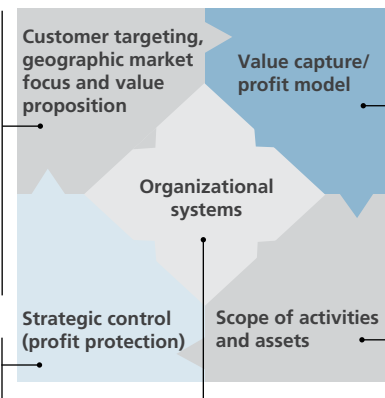
### The Power of Business Designs

Oliver Wyman’s experience in the oil and gas industry confirms that one variable—having an effective business design—is a key determinant of success among service companies in the deepwater segment. Business designs vary according to the specific niche being pursued (wellhead metering, for example) and the nature of the company (an integrator versus an aggregator). Identifying the elements of a business design can reveal how well a company exploits market opportunities within the niche. Business design consists of a set of interrelated choices (see Exhibit 2):

- *Customer selection.* Which customers do you currently serve and which ones should you serve? Which are the most profitable segments, now and in the future?
- *Value proposition.* What is your unique value proposition, and how is it modified by segment?
- *Value capture.* How do you make money from each customer? Are there new profit models available? How many different profit models do you manage, and how many more will be needed?
- *Strategic control.* What mechanisms are in place to protect your business position, customer relationships, and profits from being poached by competitors or powerful customers?
- *Scope.* What activities are managed internally? Which ones should be outsourced to others—and do you understand the hidden risks involved? Whom do you partner with? What collaborations do you want to join or catalyze?

## Exhibit 2 Business design choices

- What customers and market segments are the company targeting?
  - e.g., NOCs, major oil companies, independent operators
- What is the company's differentiated offer and customer value proposition?
  - e.g., low cost, high tech, fastest service/availability
- What is the company's marketing geographic focus?
- What does the company do to differentiate itself from others and protect profits?
  - e.g., latest technology, superior operator relationships, adequate local expertise and personnel



- How does the company generate profits and value?
  - e.g., turnkey, day-rate, life-of-field contracts
- What activities, assets, and capabilities are core to executing on the business model choices?
  - e.g., focused service lines vs. bundled, comprehensive suite of services, alliances with complementary service and equipment providers
- How does the company's organizational system support the business model choices?
  - Structure and processes (e.g., geographic business units vs. functional groups)
  - People development
  - Informal organization and culture building

Source: Oliver Wyman.

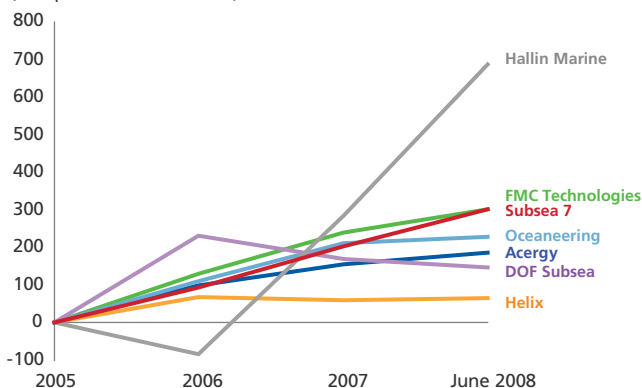
- **Organizational systems.** How do you hire, train, and assemble the right mix of people? What elements of the organization (talent, leadership, systems, processes, structure, governance, and culture) will best drive the choices you have made? Which organizational mechanisms will allow you to adapt to new developments in markets, technological innovation, and globalization? Which of these new mechanisms are critical to your success?

Using the lens of business design is an effective way to identify the best potential for value creation, an elusive characteristic that varies considerably across

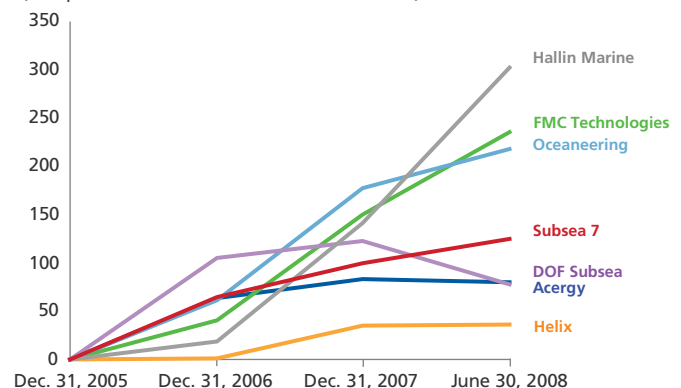
deepwater businesses. Exhibit 3 shows the performance of seven leading companies with significant subsea operations. The two charts show some disparity between EBIT results and market valuations among firms in the middle of the pack. As in most industries, it is relatively easy for investors to identify the best and worst performers, but more difficult to distinguish which middle-of-the-pack operators hold the greatest potential over the long term. Investment strategies based on business design thinking can provide private equity firms and others with the insights they need to select high-value market opportunities.

## Exhibit 3 Value creation varies across deepwater businesses

**EBIT**  
(as a percent of 2005 EBIT)



**Market values**  
(as a percent of December 2005 market value)



Note: June 2008 figures for EBIT are on a trailing 12-month basis.  
Source: Compustat, Oliver Wyman analysis.

## Business Design Case: Performance-Based Pricing

Just as high-quality seismic work can locate outstanding development opportunities, proper due diligence on business designs can yield invaluable information for investors looking for companies that combine strong ROI and low risk. Consider the example of data collection of downhole temperatures and pressures, which are then monitored by all deepwater production systems. Early monitoring systems were unreliable, and their poor performance helped spawn interest in “performance-based pricing.” Equipment companies that produced the best (and most expensive) monitoring systems quickly altered their business designs to accommodate performance-based pricing. When their

systems delivered outstanding results, vendors were rewarded with premium payments for reliable transmission of downhole data. Ultimately, the top performers in the downhole-monitoring niche were those companies with the most reliable products.

Investors who understood these market dynamics were able to gain an early foothold among the strongest players in an attractive niche. The lesson is clear: A solid understanding of deepwater projects combined with equally solid data on business designs gives investors the information they need to make intelligent decisions.

### Distinguishing the Winners

The major multinationals are committed to deepwater development, and their continued push to identify and exploit subsea fields will reward service and equipment vendors armed with superior business designs. The majors will continue to demand assistance in specialty areas such as optimized hydrocarbon recovery, water management, and high pressure/high temperature design. To identify the service and equipment companies that will emerge on top, investors need to sift through information ranging from the value propositions embedded in a company’s business design to which competitors operate within a specific market niche. Based on our work with deepwater service and equipment companies, Oliver Wyman has identified three primary characteristics of top-performing companies:

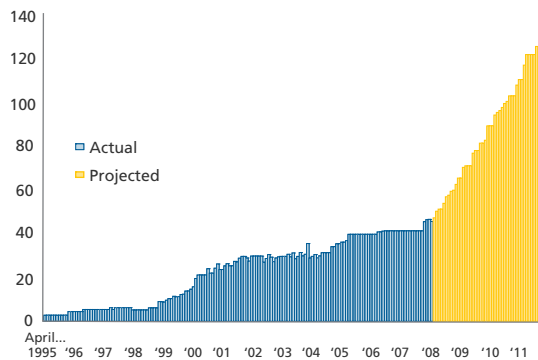
- **They are first to embrace new technology.** Given the rapid pace of technological advancements in the deepwater industry, service and equipment companies are compelled to offer the newest options to improve performance and economies of subsea development. Those that quickly embrace leading technologies can gain a short-term advantage, before competitors embrace the new technology. We look for firms that not only adopt new techniques, approaches, and equipment quickly, but also demonstrate a commitment to superior quality control. Aker Well Service AS, for instance,

meets both criteria. Aker introduced built-for-purpose intervention vessels that help operators avoid using costly semi-submersible drilling rigs to make repairs to subsea wells and production equipment. The company’s outstanding safety and performance record gives operators great confidence. Demand for these “light intervention” vessels may eventually subside as downhole and subsea equipment becomes more reliable, but for now Aker Well Service AS is exploiting this window of opportunity.

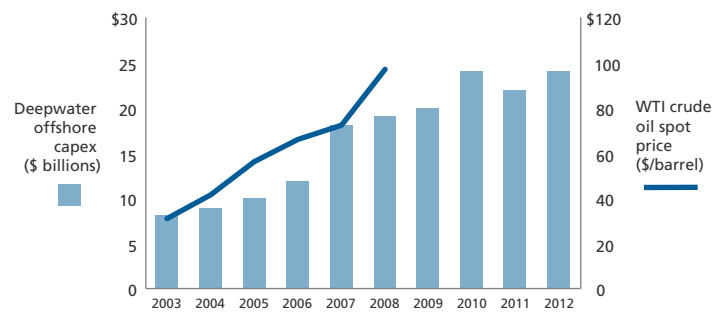
- **They combine scale with efficiency.** It’s hard to pinpoint exactly when a service company becomes a highly efficient operation capable of generating significant profit. Many companies book millions of dollars in new contracts, but eke out only a small net profit. In contrast, other companies consistently mine niches that produce high margins, although their market share may be disproportionately low. The key indicator, therefore, is not the total dollars generated by an enterprise (working hard), but rather the efficiency with which profits can be generated (working smart). A range of benchmark tests can help identify the service companies capable of generating more revenue with less investment in people, process, and product.
- **They have truly global capabilities.** Major operators favor service providers that can quickly respond to technical issues with “boots on the ground”

## Exhibit 4 Growing deepwater rig fleet and increasing E&P activity

### Ultra-deepwater rig count<sup>1</sup>



### Oil prices and deepwater drilling expenditure



<sup>1</sup> Ultra-deepwater fleet defined as 7,000 feet + capable water depth rigs. Projected ultra-deepwater fleet includes scheduled delivery dates for all known ultra-deepwater drillships and semi-submersibles.  
Source: ODS Petrodata, RigLogix, Jefferies & Company, Inc., EIA, Wood Mackenzie, Douglas Westwood.

throughout the world, but they're wary of vendors that fail to live up to their promises. Instead of matching the operator's commitment to have trained specialists available locally in a foreign country, some vendors assemble teams with few if any connections to the local market. Operators now scrutinize each bidder's local resources and service capabilities, with deficiencies in either area being a frequent reason why service providers lose tenders in the international market. This favors global service providers that already have an in-country presence and can deploy personnel quickly. Such vendors are likely to prosper under new performance-based models that may soon become the preferred method in many countries.

### In Search of Capital

Even as commodity prices rose and fell with breathtaking speed in recent months, deepwater operators remained largely insulated from the headaches experienced elsewhere in the oil and gas industry. Virtually every element of deepwater operations—from international tender processes that can extend five years, to planning and execution horizons that can easily reach a decade or more—emphasizes long-term rewards over short-term concerns. For private equity firms looking for attractive havens from commodity fluctuations, the deepwater subsea service and equipment segment merits strong consideration.

We remain optimistic about deepwater prospects for a number of reasons. We expect deepwater rig counts to grow at 10% per year on average through 2012. As the push to more challenging deepwater reservoirs continues, revenue growth rates of selected subsea service companies should outpace the growth rate of deepwater rigs. Recent spending patterns by major public companies suggest that private capital will play an important role in supporting the continued expansion of the deepwater segment. Between 2005 and 2007, for example, capital spending by the public companies in Exhibit 3 that are focused on the subsea market exceeded operating cash flow by approximately 50%. To maintain these growth rates, these companies will likely need to turn to private equity companies for assistance.

Our counsel is straightforward: If you want to maintain a position in oil and gas development, the deepwater segment offers some of the best opportunities in the industry. And the best prospects can be found in the companies that develop systems, solutions, and sustaining technology—rather than individual products, limited services, and one-time fixes. The eventual winners will be those vendors that can profitably provide reservoir management, sand management, flow assurance, and production optimization. ❖

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## About Oliver Wyman

Oliver Wyman is an international management consulting firm that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, organizational transformation, and leadership development.

## About RMI

RMI specializes in the assessment of markets for current and emerging technologies used in deepwater and other segments of the worldwide petroleum industry.

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