

Oilfield services industry analysis

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An oilfield service company is generally broken into the following segments: seismic imaging, drilling, characterization, completions, subset, production, well intervention and well testing. Although oilfield services do have some overlaps within the oil and gas industry in areas such as, equipment, procurement and construction firms (EPIC firms), software application development firms and International consultancies. The oilfield services industry also enjoys a global demand, with mid-major oilfield service firms competing domestically, with onshore land based operations and production.

While the majors are truly global, including, Halliburton, Schlumberger, Baker Hughes and Floer, mid-major companies do not have the capital to do so.

Using the Porter's Five Forces Model and Stakeholder Theory an evaluation of the industry from a holistic perspective follows (Refer to Appendix B for a diagram of the analysis) Bargaining Power of Buyers The buyers from oilfield services companies are O&G and Gas Exploration and Production (E&P) companies and are generally divided into three distinct segments.

The first segment is the Multinational Integrated Oil and Gas Companies (the majors) comprising upstream (E&P), downstream (refineries and trading) and midstream (pipelines) and operating units. The majors include firms such as Exxon, British Petroleum (BP), Chevron and Shell. The second segment is comprised of National Oil and Gas companies (NOC), who face the challenge of always balancing political pressures and profitability. These NOCs include firms such as Saudi Aramco, Page 1 of 8 Since, Patroness.

The third and final segment is the Independent Oil and Gas companies, pure E&G enterprises: Andorra, Devon, Murphy O&G and Chesapeake. Bargaining

power of Suppliers The Oilfield services industry uses a multitude of suppliers to build drill rigs, assemble downhill tools, compress water and move equipment between locations. These suppliers include, EPIC firms, contract manufacturers (SMS), scientific parts suppliers, telecommunication companies, integrated circuit manufacturers and original equipment manufacturers (Memos) for devices such as: telemetry equipment, sensors, detectors and Industrial computers.

The only supply chain area of concern critical for the industry due to the market's availability of the mineral/commodity in question and in some cases the government regulations that are placed on this commodity. For example, measurements while drilling (MWD) tools typically use gamma ray radiation reflections off the bore surface to measure the temperature, pressure and topology of the well, but plutonium is a highly regulated industry. As such, if the vendor of the scientific part is forced to cut supply, it would significantly impact the oilfield services companies.

Competitive Rivalry The oilfield service industry segment contains firms of varying sizes with the bigger firms functioning on a global scale while the smaller firms functioning more locally in specific geographic regions and frequently in specialized operations. In this environment the handful of major players such as Baker Hughes, Schlumberger, Halliburton and Halliburton that dominates the oilfield service industry. Their dominance is derived from three main factors.

Firstly, their ability to make large capital investment in specialized equipment, workforce, R&D and acquisitions of niche providers all in an

effort to maintain their competitive edge. Secondly, Page 2 of 8 their ability to provide their global clients with the whole spectrum of oilfield services, thus supporting their customer's end to end drilling operations.

Third, their strength of indulging into cut throat competition to win deals with powerful customers who have huge market shares and influence. As a result, the oilfield service industry segment is highly competitive and looks to compete on service, pricing and brand awareness.

Substitute Services The Oilfield services industry has a very limited number of substitute services. In the case of drilling, vertical drilling is a really poor substitute to horizontal drilling in a shale field. Horizontal drilling insures the same depth of the bore, yet turns horizontal once the bit reaches the shale layer and carries from between one half of a mile up to two miles, resulting in a well that will last longer and produce more well fluids. Horizontal drilling will be an unnecessary expensive procedure in a porous rich field.

Besides, both techniques are offered inside the oilfield services industry.

In the case of specialized software, there are no substitutes outside the industry. For example, specialized software for reservoir engineering, besides programming skills, requires specialized reservoir engineering knowledge. Pecs could come up with certain substitutes services or products but they prefer to channel those through their clients, the oilfield services companies. Threat of New Entrants Major E firms could potentially become new entrants into this industry as they have the reservoir of knowledge, and the capital to make the investments into drill rig assets.

Yet, many of the E choose not to stretch their supply chain / value chain towards upstream activities due to the massive investments and the risks associated with the stakeholders. Both the directional drilling and hydraulic fracturing technologies are key determinants to identify the Porter's five forces involved with potential new entrants into the oilfield services industry. As such it is important to understand the massive investments that have been made by companies such as Schlumberger, Halliburton, Baker Hughes and Halliburton as well as the influences from stakeholders.

An area for new entrants to enter would be the development of expertise in Carbon dioxide gas (CO₂), as a replacement to H₂O fracturing. The use of this gas is important for the industry because of the possible water table contamination through the use of the current technology, water or steam fracturing. In conclusion, while the threat of new entrants is low, there are opportunities and gaps within the industry that can be captured by organizations that build the right partnership and are willing to invest.

Stakeholders Analysis: The stakeholders are divided into the key groups of Federal and local government agencies, local communities and education sector. Federal and local government agencies influence the operations of the oil field service companies by issuing regulations regarding environmental matters, including safety and many others. As seen in recent years, government agencies can disrupt operations by stopping drilling operations for long periods of time, thus producing sizable losses in the industry.

Governments subject to high levels of corruption could also increase the operating costs for oilfield services companies through bribes and

bureaucratic red tape. Page 4 of 8 Local communities influence oilfield service companies by voicing their concerns about the environmental and economic impact of drilling operations.

Local communities allied to NonGovernmental Organizations (Nags) magnify the volume of their concerns reaching in many cases, to the global public opinion. The education sector can shape innovation in the industry as oil extraction becomes more and more difficult with non-standard solutions coming into place.

The latest research and investment in education can become a company's competitive advantage and allow access to the latest industry innovation. Reluctance to invest and lack of attention to this stakeholder can limit access or experience and can essentially phase a company out of competitiveness. Conclusion The analysis of the oilfield services industry using the Porter's Five Forces and the Stakeholder Theory, shows us that the industry poses a very high entry barrier due to capital expenditures and intellectual property (refer to Appendix A for our mean industry rating).

However, there are certain gaps that may offer opportunities for new entrants, the use of annotate soluble based fracturing media, such as CO. The most significant finding from the industry analysis shows that the bargaining power of the buyers and the intensity of competitive rivalry are the strongest influences of day-to- ay business operations and profitability. Anyone looking to invest or diversify into prior to a capital investment.