Structure of the exploration and production sector of the oil and gas industry es...

Executive summary.

Oil and gas exploration is a science known as petroleum geology and it involves finding hydrocarbon deposits under the water or underground in order to produce gas and oil. The petroleum industry is divided into five sectors. These include upstream which consists of exploration, development and production. The downstream consists of refiners, retailers and consumers. The third sector is the pipeline, the fourth is the marine and finally service and supply. This sector includes searching for potential sources of oil and gas, drilling of wells and operational activities of the fields. Sources of oil and gas could be underwater or underground. This is according to Halliday (2006, p. 145) Oil and gas exploration is an expensive affair and therefore can only be done by large corporations mostly those that are owned by the government (Frank 2005, p. 45). For example, recently, OMEL Energy Trinidad & Tobago declared their plan to invest US$500 million dollars to explore some five gas wells over the next four years (Caribean update, 2 February 2009).

The government of host countries owns the petroleum resources. In US however most are privately owned. Licenses must be issued by the government. Who pay tax after profits plus royalty on any oil produced. In this paper, we focus on the upstream sector that encompasses exploration and production. The oil and gas exploration and production proves to be a promising ground to invest in considering the high returns expected. Companies investing in the sector need to be aware of the challenges they are likely to face in the market. Competition is very high mostly dominated by large firms with high levels of economies of scale and market domination.

There are barriers of entry due to the advanced technology and high costs of capital required. In this paper, I examine the structure of the oil and gas exploitation and production in order to determine the attractiveness of the sector to investment. Apart from the structure, the importance of making use of the strategic management tools is examined and in particular referring to the porter's five forces model.

Structure

Exploration and production of gas and oil is one that has an organized but rather complicated structure. Ownership of oil resources is usually by the host states except for a few exceptions like the United States where several private investor players have their own land. In order for the state to benefit from oil and gas deposits, it may choose to contract a firm which will do all the exploration and production then it is paid for its services. Most commonly however investors in these markets acquire licenses for oil or gas deposits that they have discovered. The investors will then pay loyalties to the government and also pay taxes resulting from the profits at the end of the year. Oil producing countries are governed by OPEC (Oil Producing and Export Countries).

It is responsible of ensuring that oil prices do not sky rocket harming the consumer and neither do they come too low to hurt the producers, OPEC is basically responsible of making rules governing oil production including environment rules, investor relations among others. Apart from OPEC, other organizations such as UNEP (United Nations Environmental Program) control these firms in order to restrict practices that would harm the environment

(Zhiguo 1998, p. 95). The workforce in Exploration and production of oil consists of geophysicists and geologists, Petroleum/Reservoir Engineers, drilling Manager and production operations Advisors. These are the people at the ground. Others include business development managers and their teams and economists.

Drilling is the most important process and takes up most of the workforce. Ontario Drilling and Production Section (1977), explains the process of drilling and production. After discovery of the oil the process of production starts. The process of exploration involves gathering and organizing data then analyzing it from the electronic data rooms. The team of geologists and physicists then go on to perform field evaluation and running economic analysis. Production begins with drilling of a well. The drilling process takes the most of the workforce in the process. After drilling the well goes through another process known as completion whereby the well is enabled to produce oil. The production is when the oil or gas is produced. This goes on until the well can no longer produce oil gas or when the oil is not enough to make profit and it is then abandoned.

The oil and gas exploration due to its expensive nature only attracts government owned firms and very large companies with a broad capital base. Other smaller companies will enter the chain of oil production when it comes to refining and distribution of the gas and oil. The Saudi Aramco is the largest oil company in the world. It manages 100 oil and gas fields in Saudi Arabia with an estimated production of at least 264 billion barrels per year and 253 quadrillion scf of gas. These high amounts of production are due to Saudi Arabia’s ownership of Ghawar field which is the largest oil field in the world. The second largest company is the National Iranian Oil Company which produced 61 billion barrels of oil in 2007. Qatar petroleum operates oil and gas activities in Qatar. It has been a major supplier of gas since the discovery of the north field in 1971. Target for Qatar petroleum for 2012 is 9. 7 Tcf (trillion cubic feet) intended to feed the growing demand of the world. Qatar is however the smallest OPEC oil producer. Others major ones include Iraq National Oil Company Gezprom, Nigerian National Corporation, Kuwait petroleum among others. Other major companies and suppliers in the industry according to Mtsiva (2001, p. 4) include Exxon Mobil corporation, Shell Oil Company, BP, Chevron Corporation, Hulluburton Company, Triton Energy among many other players in the well to do petroleum industry.

Is it attractive to invest and compete in the exploration and production sector of oil and gas exploration? Schell (1999, p. 132) notes that before entering into any market, it is a requirement that you weigh the benefits versus the costs of the investment. If the investment is worth undertaking, it should be able to bring in more returns than expenses. The oil industry is very attractive to invest in if the capital is available (Babusiaux 2004, p. 17). What makes oil an attractive venture is that oil and gas are major drivers of the economy. Demand for these products is very high and is doubling every ten years and therefore the market is guaranteed. There are high financial returns with most companies that invest in the sector getting more than 50% annual rate of return. Better still a return of capital within the first year is possible considering that tax incentives are given to investors in this sector. 65% to 80% can be written off in the first year. Expenses used in exploration and discovering are not taxable hence making it cheaper. Nowadays with advancement in technology there are few risks involved during exploration and production. The fact that the government recognizes the importance of oil and gas gives investors high government support. With all these advantages, the oil sector is quite a good opportunity.

Investing in the oil sector however has risks which the investor should be ready to bear. What is challenging is capital. As stated earlier, the business of exploration and production is very expensive (Kasem 1992, p. 56). Fig 1 shows the amount of money that was used to drill several wells by the UKCS (UK Continental Shelf). There is high competition from major oil companies who own most reserves and new entrants therefore have to spend a lot to explore and get their own fields. Oil prices are constantly fluctuating due to different causes such as wars, union strikes and other crises that may limit oil production (Great Britain. House of Commons. Business and Enterprise Committee 2008, p. 344). The oil industry is at risk because petroleum being a non-renewable resource is bound to be depleted at one point in time. It is estimated on average that after 40. 5 years, the world’s oil reserves will be depleted. This is according to a survey by BP on the world energy in 2007. Middle East had the highest lifespan of 79. 5 years while North America’s reserves would only last 12 years.

The major drivers of success in this sector are the desire to make profit, increasing market share and finding new areas to explore. In order to be successful in these endeavors, some success factors are essential to drive the performance of the company. Management comes first when it comes to the success of any business. A company with good management will ensure that all factors of production are well organized to enhance returns.

Advancement in technology is a must in this industry (CEC 1979). The best technology becomes cheaper in the long run because it ensures efficiency. In order for the business to succeed the company will constantly have to explore new fields to secure future resources and enable continuous supply. Market share acquisition to add to the list of customers is also very important.

Strategic management involves coming up with a plan to meet the company's goal. The first thing is setting goals and objectives. It is very important that those investors wishing to invest in the production and exploration industry to analyze the environment (Salona 2001, p. 215). As stated earlier, evaluation of the business environment is quite crucial. You need to know who the major players in the business are, who the competitors are and also where you plan to obtain market for your product. Also important are the legal impacts of investing in the sector. Referring to the porter's five forces, there exists barriers to entry in this sector. The exploration and production sector of oil and gas is dominated by large companies which own most reserves. Due to the absolute advantage of these firms, access to distribution and economies of scale coupled with capital requirements makes it challenging to new firms. Their supply power is also high considering that due to economies of scale their return versus expenses are very high. Rivalry will depend on the industry growth and industry concentration in the future. The sector still remains competitive tough profitable. Demand keeps rising and hence market is guaranteed. However, success depends on the approach of the management towards the investment.

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