

Warburg Pincus and emgs: The IPO Decision

Case Report – Group 8

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Contents

1. Case Background.....	1
1. SBL, emgs' Core Competitiveness.....	1
2. Oslo Bors or NYSE/LSE.....	2
3. Warburg Pincus.....	2
4. Warburg Pincus's Flat Structure.....	3
5. Warburg Pincus Investments in Energy	4
2. Macroeconomic Outlook.....	5
1. Outlook of the International Oil Industry	5
2. Oil Equipment and Services Market	8
3. Evaluating a Property	10
4. History of Finding Oil.....	11
3. emgs.....	Error! Bookmark not defined.
1. Origin of SBL.....	13
2. Operation of emgs.....	13
3. Emgs Rebirth	14
4. Development of emgs	16
5. The Challenge in the Future.....	18
4. Liquidity Considerations	19
1. Advantages and Disadvantages of an IPO	19
2. Choosing a Stock Exchange	21
3. Going for an Alternative Route on the NASDAQ	24
4. Conclusion	26
5. Bibliography	28

Case Background

Two managing directors, Jeffrey Harris and David Krieger from Warburg Pincus, are discussing the IPO of the Norwegian Company Electromagnetic Geoservices AS (emgs). The decision mainly focuses on whether to take emgs public and on what exchange.

The cutting-edge technology (SBL) differentiates emgs from other typical oilfield services company. Regarding the exchange for floating, NYSE or LSE has greater liquidity and higher valuations compared to Oslo Bors. However, the decision to float in the U.S. may bring larger compliance expenses as well as other costs.

1. SBL, emgs' Core Competitiveness

The previous seismic mapping allows explorers to see potential formations trapping oil and natural gas, but they still cannot easily determine whether the fluids detected are water or hydrocarbons. Besides, the expenses of drilling a well in deep water cost a lot ranging from 20 to 100 million dollars.

SBL, an innovative technology developed by emgs, enables oil companies to determine hydrocarbons (oil and natural gas) in deep-water formation and different bottom configurations prior to drilling. This unique technology remarkably increases the probability of correctly assessing the presence of hydrocarbons to more than 90%. Furthermore, this operation is more capital-

efficient than seismic mapping.

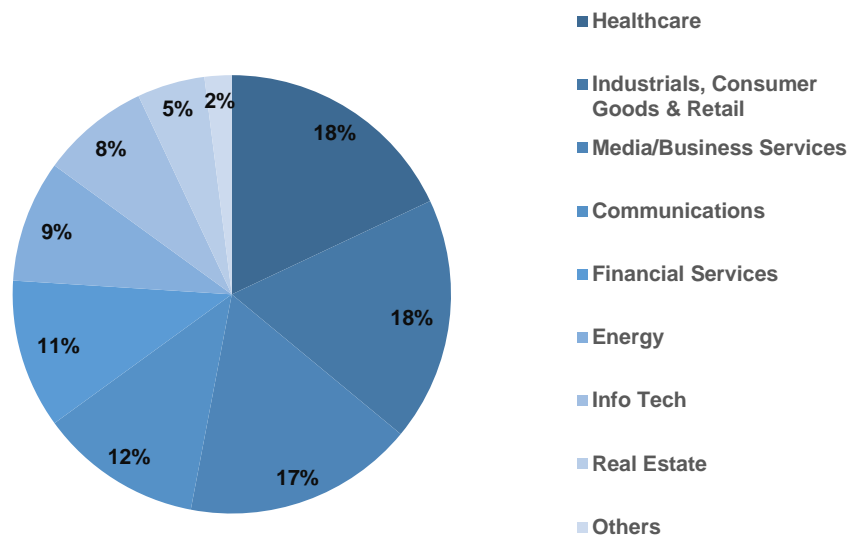
2. Oslo Bors or NYSE/LSE

Oslo Bors stock market is more volatile since over half of the value on this exchange is energy-related. However, emgs' management considers floating at this exchange to be a better choice. On the one hand, the management does not have to move far away from Norway. On the other hand, costs of listing and compliance would be less. Moreover, it would be much quicker to list at Oslo Bors.

Since NYSE provided higher liquidity, Warburg Pincus could easily distribute stock or cash to its LPs. Another advantage is the higher valuations of emgs in NYSE. Furthermore, Warburg Pincus is more renowned in NYSE than in Oslo Bors, which might help emgs gain more credibility. However, the costs of listing time and compliance should also be worth considering.

3. Warburg Pincus

In 1966, E.M. Warburg & Co. merged with Lionel I. Pincus & Co. The new merged company E.M. Warburg, Pincus & Co. had invested \$25 billion in 550 companies in 30 countries from 1971 to 2006. Warburg Pincus, with 150 investment professionals, invested in different stages of companies and various target sectors.

Fig 1: Warburg Pincus Distribution of Investments by Practice by 2006

Source: Warburg Pincus

4. Warburg Pincus's Flat Structure

Warburg Pincus has developed a decentralized and flat structure to make investment decisions. This kind of structure is unique in the industry. The executive management group coordinates activities across different sectors and geographies on a high level to discover opportunities in specific areas.

Regarding the deal approval process, the deal team partners in the firm work together through hallway conversations and other meetings. They usually have several previous discussions with other professionals to evaluate the deal risks before speaking to senior partners. This process is also a sensitivity testing and quality control procedure. After making the investment decisions,

the detailed memo would be released to the rest of the colleagues, describing the specific investment and highlighting the upside potential and downside risks.

The firm does not take deal fees and investor's interests were closely aligned with those of the management teams. Whenever some teams have a question, they will get fast feedback and responses from other teams in different regions of the world as Harris describes, "we all share from the same pie".

5. Warburg Pincus Investments in Energy

Warburg Pincus had focused on energy-related areas since mid-1980s and had invested in 25 energy companies, such as Antero Resources (2003), Kosmos Energy Ltd. (2004) and MEG Energy Corp. (2004)¹, making it one of the world's most experienced private equity investors in the exploration and production sector.

A typical energy investment example was Spinnaker Exploration, co-founded by Warburg Pincus and PGS in 1996. Warburg Pincus helped the firm by providing strategic expertise and a \$60 million investment in 1996 and 1997. After Spinnaker went public in 1996, Warburg still held its shares until the company was acquired in 2005. Harris emphasized that this IPO was simply another financing event and Warburg insisted on holding positions for a long time in order to add value to the firm and Warburg's limited partners.

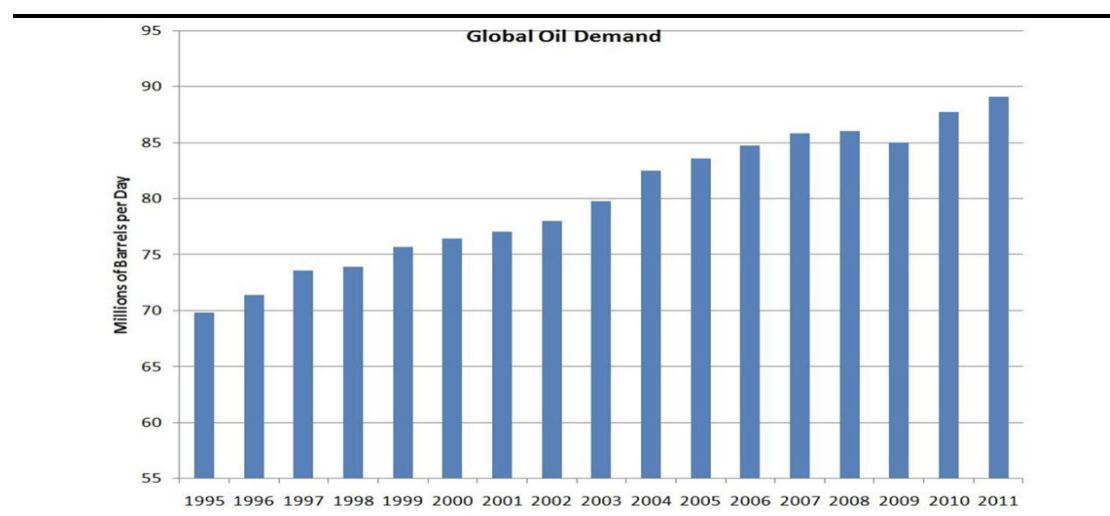
¹ "Energy." Warburg Pincus, www.warburgpincus.com/investments/industry/energy/.

Macroeconomic Outlook

1. Outlook of the International Oil Industry

In order to picture the scenario in 2006, it is first important to give a macroeconomic overview about the international oil industry. While “being on a roll” over the last years, the industry saw a high demand for oil and natural gas from both developed as well as developing countries. In fact, figure 2 shows the global oil demand from 1995 to 2011, stating that the demand at 2006 reached its peak until that time.²

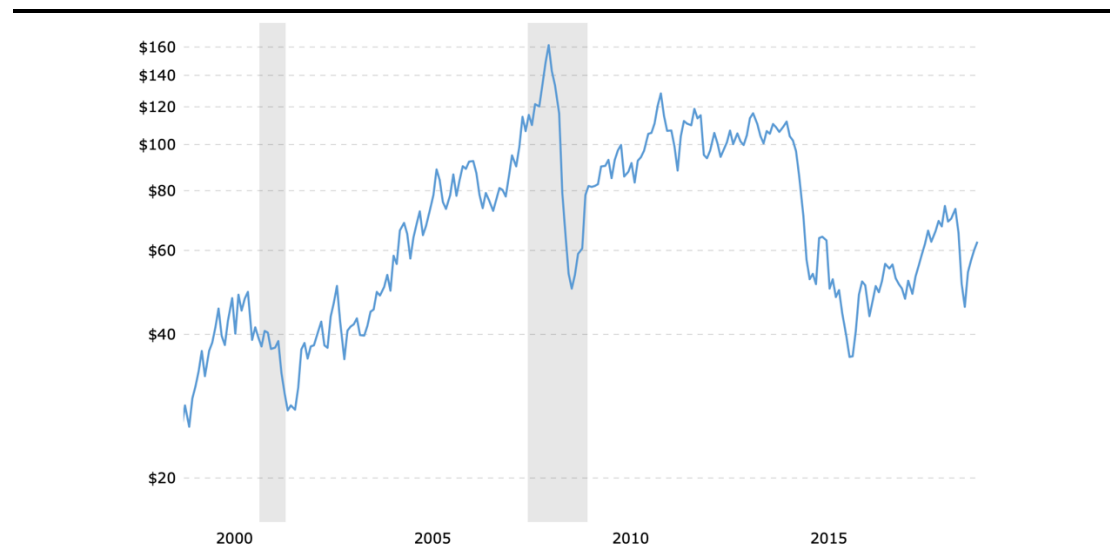
Fig 2: Changes in Global Oil Demand from 1995 to 2011



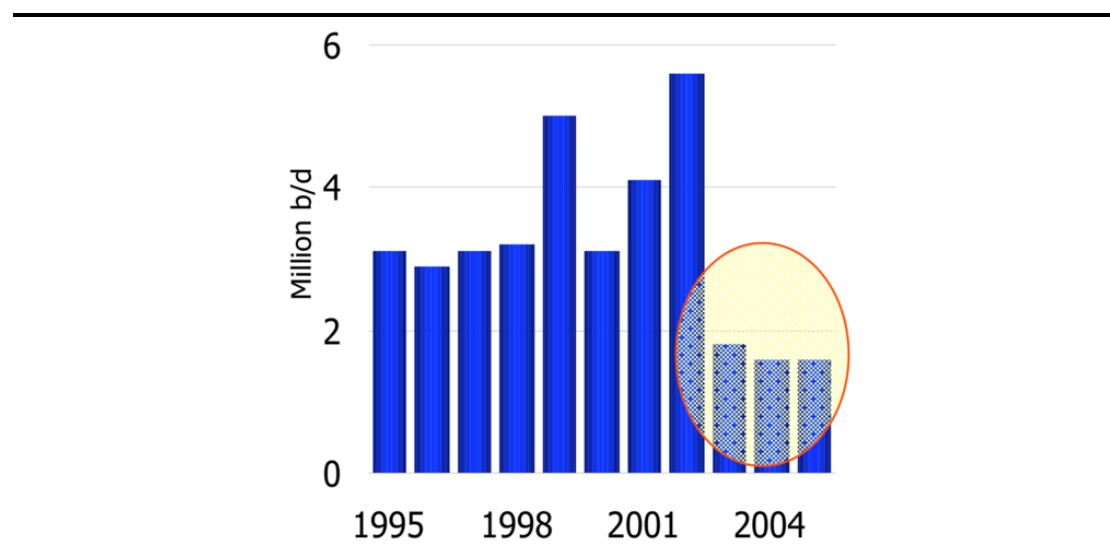
The increasing demand for oil was a major contributor to its subsequent price increase, illustrated in figure 3.³

² Gue, Elliott H. “Oil: \$100 Isn’t a Magic Price.” Investing Daily, Investing Daily, 25 Jan. 2011, www.investingdaily.com/13526/oil-100-isnt-a-magic-price/.

³ “Crude Oil Prices - 70 Year Historical Chart.” MacroTrends, www.macrotrends.net/1369/crude-oil-price-history-chart.

Fig 3: Oil Price History

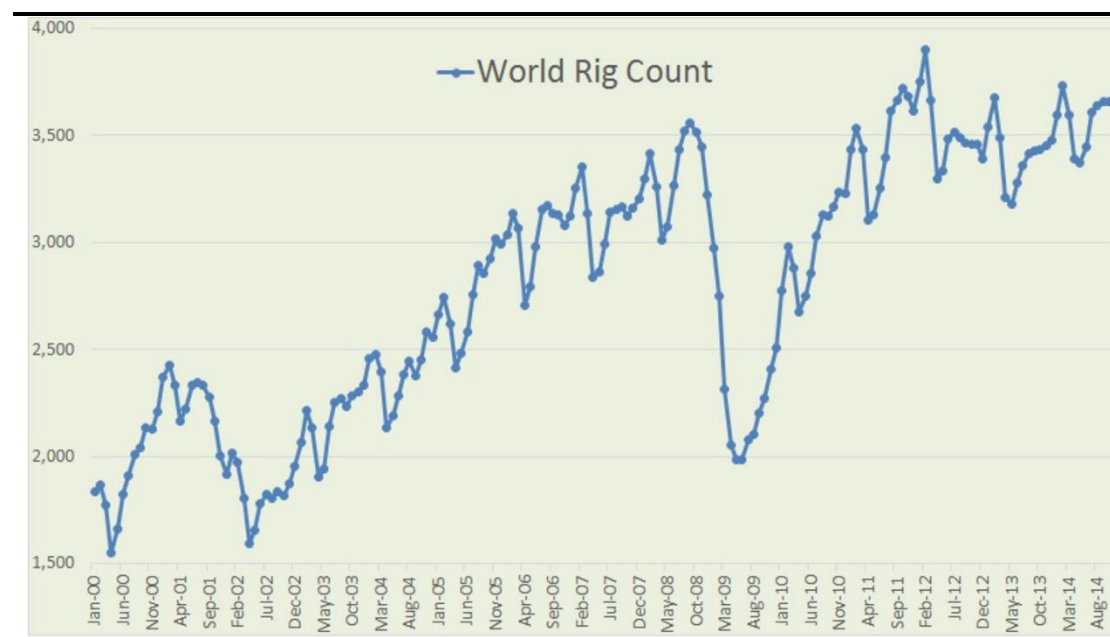
Further studies have also shown that the OPEC behavior post 1999, the low spare capacity and geopolitics strongly influenced the oil price until 2006, shown in figure Fig 4.⁴

Fig 4: OPEC Spare Capacity from 1995 to 2004

⁴ "Crude Oil Price." NCAC USA, www.ncac-usaee.org/resources/Documents/Presentations/Prior-years/2006_01OilMarkets.pdf.

As companies in the drilling sector were aware of this trend, the oil companies raised their inventory of drilling deposits to the point that by October 2006 there were around 274 oil rigs worldwide – nearly record level, supported by figure 5.⁵

Fig 5: World Rig Count from Jan-2000 to Aug-2014



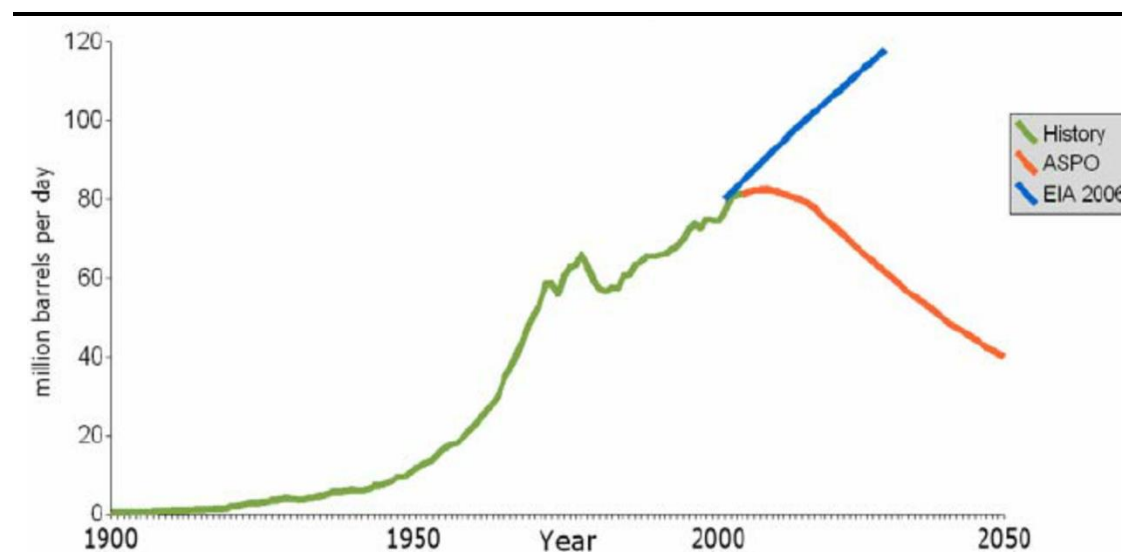
It was estimated that at that time the “world’s conventional oil production likely reached its peak”⁶ as stated by the International Energy Agency (IEA). However, downside potential was mainly seen due to “rising oil prices, declines in investment by the oil industry and new commitments by some nations to

⁵ Peak Oil Barrel, peakoilbarrel.com/rig-count-drilling-less-oil/.

⁶ “Has the World Already Passed ‘Peak Oil’?” National Geographic, National Geographic Society, 11 Nov. 2010, news.nationalgeographic.com/news/energy/2010/11/101109-peak-oil-iea-world-energy-outlook/.

cutting greenhouse gas emissions”⁷. Although these effects are slightly offsetting the euphoria in the conventional oil industry, the bull market in this sector was still expected to grow. Actual projections, performed by the IEA, even predicted that the production of petroleum fuels will most likely rise continuously, while eventually reaching 99 million barrels per day by 2035, depicted in figure 6.⁸

Fig 6: World Oil Production – History and Forecast



2. Oil Equipment and Services Market

Going more into detail, the Oil and Gas Equipment and Services Market generated \$124bn in revenues by 2006 and was expected to grow to \$151bn by 2011. Furthermore, since the top 5 players had approximately 35% of market share, we can identify this industry to be quite consolidated by having a huge

⁷ “Has the World Already Passed ‘Peak Oil’?” National Geographic, National Geographic Society, 11 Nov. 2010, news.nationalgeographic.com/news/energy/2010/11/101109-peak-oil-iea-world-energy-outlook/.

⁸ Ibid.

shift of power towards the major players, namely “Schlumberger” with 12% and Halliburton with 11%. However, since this industry relies heavily on fixed prices, companies in this business segment are rather price takers and therefore willing to continuously cut costs. Further key characteristics of this segment are its high debt levels that can put a strain on credit ratings and the reliance on political stability. Uncertainties as well as political instabilities, however, will make the industry suffer. Especially during a recession, manufacturing will decrease which will then result in less people driving to work or even going to vacation and eventually lead to an even less demand in oil. The biggest failures in the Oil Services market can consist in two possible ways: You can either drill a dry well where the costs are approximately \$20m-\$100m or, even worse, miss out on profits by not drilling on a spot that would have been successful. This in combination with the importance for cost cutting makes new technologies essential for both new entries as well as increasing market share in this business. For a more thorough analysis, a Porter’s Five Forces Analysis can be applied:

1) Threat of New Entrants: Even though there exist a lot of oil services companies, barriers of entry are given by highly specialized workers and equipment.

2) Power of Suppliers: Just a handful of powerful companies is dominating the oil and gas business.

3) Power of Buyers: There is a shift of power towards the buyers as oil services companies are not much different from each other. This search for better contract terms eventually leads to a seek in lower prices.

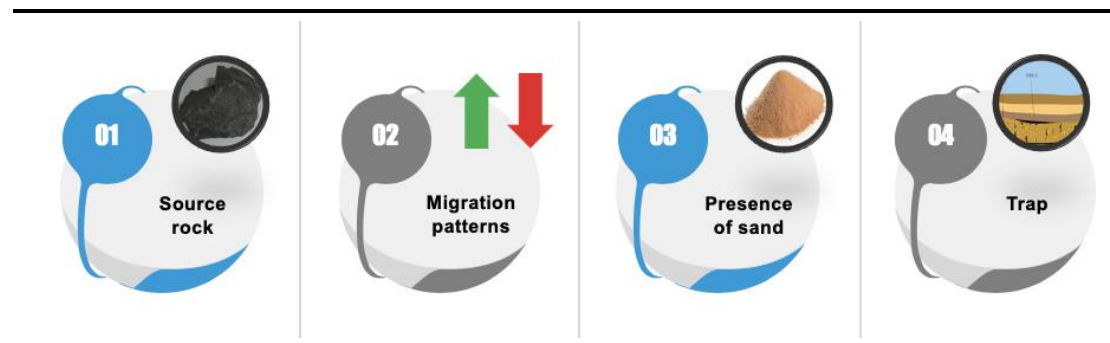
4) Availability of Substitutes: With alternative fuels like coal, gas, solar power, wind power, hydroelectricity and nuclear energy substitutes are given if not even promoted by governments.

5) Competitive Rivalry: Some firms were especially dealing with slow growth rates as well as high exit barriers. Once constructed, refineries as well as other oil equipment can only serve one specialized purpose.

3. Evaluating a Property

After having highlighted the key factors of both the macroeconomic environment and the oil services industry, it is important to evaluate the potential of an oil property in four steps that can be separated into either geological studies or geophysics.

Belonging to the former, you initiate the process (visualized in figure 7) by defining the source rock as buried fossils and plants were more likely to have become oil. As a second step you analyze migration patterns since oil moves from places of high pressure to those of low pressure. Concerning geophysics, you need to identify the presence of sand in a third step as the oil has to settle in a reservoir of porous dolomite or sandstone. Lastly, oil needs to be trapped in an area in order to have a shale base and lid to keep the oil in place.

Fig 7: Four Features of Evaluating a Property

In order to extract oil, Oilfield services companies make use of their expertise by provide services in “manufacture, repair and maintain equipment”. Specifically, these services can be divided into sub-services. First, with Transport Services, land and oil rigs can be moved to certain destinations. Second, Directional Services are specialized in angled or horizontal drilling. Third, Seismic Testing provides a mapping of the geological structure beneath the surface in order to find potential oil reserves.

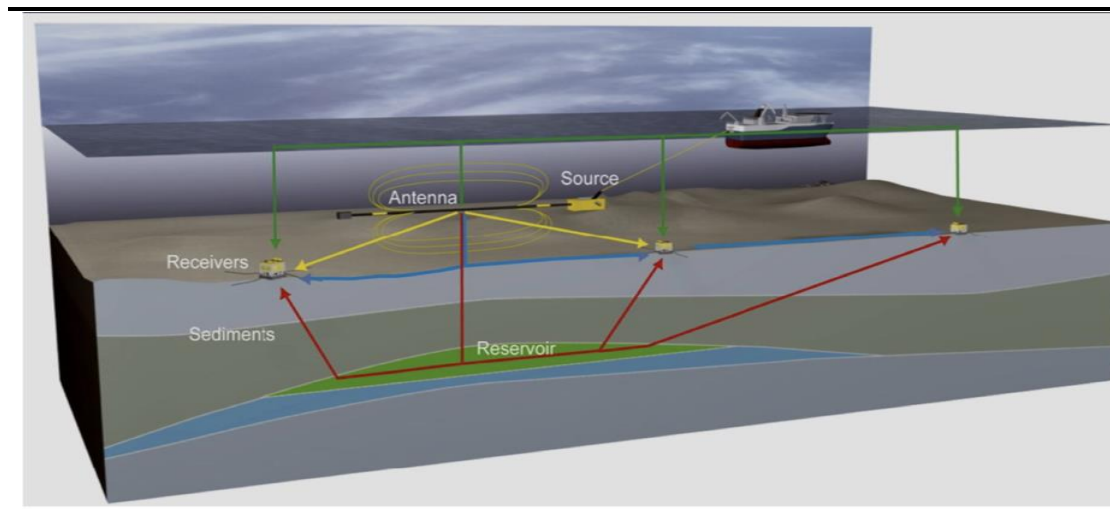
4. History of Finding Oil

For the identification of oil over time there have been several procedures. Starting with the Seismic Acquisition in the 1960s which gave the base for the subsequent Two-dimensional Seismic Mapping in the 1980s, the to that date standard method used to be the 3D Seismic Method starting in the 1990s.

However, this procedure had mayor drawbacks since it first required a complete refitting of a ship which costs approximately \$75m and takes one year

in time and second this method had severe difficulties to differentiate water from hydrocarbons. Seabed logging “SBL” (visualized in figure 8)⁹, on the other hand, created by emgs, was able to increase the likelihood of successful drillings by making seismic studies while using electromagnetic signals that identify the “resistivity” of materials underground.

Fig 8: Diagram of Seabed Logging (SBL)



By being able to replace the current 3D Seismic Method, emgs were expected to improve its position in the market.

⁹ Kumar, Arun. “Sea Bed Logging– Direct Hydrocarbon Detection Technique in Offshore Exploration.” SPG India, www.spgindia.org/2008/093.pdf.

emgs

1. Origin of SBL

In 1997 Terje Eidesmo and Svein Ellingsrud, working as scientists for Statoil, developed SBL while conducting research on the use of electromagnetics to investigate the properties of seabed reservoirs.

2. Operation of emgs

Between 1997 and 2003, Statoil incubated the project as it went from lab test verification to its first commercial discovery. They had already invested \$20M in the project, which was showing promising results, but still losing money. Statoil felt that emgs needed to be independent in order to provide it with an entrepreneurial environment and further to position it more attractively to potential customers. The technology seemed attractive as emgs had nine patents either granted or pending, and each of the 10 drilling tests it had done correctly identified the presence or absence of oil. In 2003 the company had generated \$18million in revenues with one vessel. However, it was still not profitable.

Their business model is rather selling surveys than providing the technology. For doing these, they charge approximately \$1.5M per prospect, which was considerably less than the average cost of drilling a deep water well. The effort was quite capital-efficient, as emgs needed to charter its vessels, which were

then run by employees of the vessel's owner. Only the staff performing the actual surveys were emgs employees. Fitting out a vessel took six days and cost \$15M. However, once it was fully employed, each boat could generate more than \$30M in revenue per year. Nevertheless, although the company expected to make money in 2004, it lost \$17M on revenues.

In 2004, the oil and gas service market was beginning to recover after many years of extremely poor results. The annual market opportunity for emgs' existing products and services in conjunction with seismic mapping was close to \$90M. In short-term, SBL might displace the seismic method in some uses, and in longer term, the technology might be improved to function in shallower water or with deeper targets for an estimated addressable market of \$600M per year. In comparison, the market for offshore seismic data was roughly \$2.5billion annually, with average annual growth of roughly 11% since the late 1980s.

3. emgs Rebirth

Warburg was able to acquire emgs in mid-2004, even though they have not given the highest bid. The reason for this is mainly that they have deep pockets and a history of staying with its company and help them grow. While they did their due diligence of the target company, they were told by several CEOs, who operate exploration and production companies offshore, that if Shell and ExxonMobil would embrace SBL as core to their exploration process, everyone

else would quickly adopt the technology. Hence, they know with certainty a positive anomaly on SBL will be a commercially viable deposit. That being said, the technology was still new and somewhat limited in its applicability. In 2004, the technology only worked in certain water and reservoir depths because electromagnetic signals attenuate significantly in the subsurface.

They expected that the company would add one new vessel per year, with revenue and profit growing at a compound annual rate of around 40% by 2008. The total investment would bring its final ownership to 92.7%, with management and the board owning the balance.

After the investment, Harris & Krieger helped building a strong board of directors as many of them were experienced experts in oil and gas fields. They worked with emgs' management team to formulate financial and capital strategy as well as tactics, set up the organization and processes, and developed the habits of a well-managed company. They further assisted the team in recruiting a chief financial officer, a sales force targeting the Americas, and marketing support. The explicit income and expense structure of a Seabed Logging Unit can be seen in figure 9.

Fig 9: SBL Unit Economics at Time of Warburg Pincus's Investment

	2004
Total Days Vessel Use per Year	279
Number of Days per Project	14
Number of Projects per Vessel	20
Number of Vessels	1
Project Economics (\$ thousands)	
Revenue per Project	1,500
Crew + Vessel Cost per Project	-600
G&A and R&D per Project	-250
Operating Profit per Project	650
Income Statement per Vessel	
Revenue (\$ millions)	29.9
EBITDA	7.8
Net Income	3.6
Invested Capital (\$ millions)	8
EBITDA margin (%)	26%

4. Development of emgs

By 2006, emgs had four functioning vessels, was operating in every major offshore basin on the planet, and had a staff of 152, of whom 104 held a master's degree or doctorates. The technology was steadily improving and becoming suited for more difficult rock formations in both shallower and deeper waters and penetrating more deeply into the seabed. In the words of one analyst, who estimated that exploration drilling costs had increased six times since 2003, with the cost of drilling increasing, "the value of finding oil is enormous". In recognition of that fact, emgs customer list had grown to include many of the world's largest oil companies. The customer list is visualized in detail in figure 10.

Fig 10: emgs' Customer List as of Fall 2006

Client	Type
ExxonMobil *	Super major
Shell *	"
BP	"
Chevron	"
Total	"
Conoco Phillips	Large IOC
Eni	"
Statoil	"
Hydro	"
Petrobras	NOC
ONGC	"
Petronas	"
Petoro	"
Woodside	E&P
Anadarko	"
Apache	"
Aker Exploration	"
Devon	"
Talisman	"
Marathon	"
Murphy	"
RWE	"
Gaz de France	"
DNO	"
OMV	"
Rocksource	"
* Strategic partnership with EMGS	

Emgs therefore became the main player in this field. Revenues had grown from \$18M in 2004 to \$118M in 2006, with net income from a 17million loss to a first-ever operating profit of \$17 million.

Therefore, the company planned to charter another vessel in the second half of 2007, and two more in both 2008 and 2009. Two of these new vessels would be purpose-built for SBL, enhancing the efficiency and speed with which surveys could be completed. The new investment was expected to cost at least

\$75 million in the next year.

5. The Challenge in the Future

Although emgs showed a good performance on its financial statements, there was still a big concern in manager's minds, namely whether the technology would work well in a broad enough set of basins around the world to support the growth of the business or if it fails to do so. Moreover, there tends to be a 10-year cycle on this type of technology and in the last four or five years, commoditization often entails increasing price competition and eroding margins. Hence, they fiercely defended its technology and litigated its patents against a U.K.-based competitor, Offshore Hydrocarbon Mapping (OHM). Concretely, OHM so far has been the only pure play SBL competitor. The company floated on London's AIM exchange in March 2004 at 213.57 pence.¹⁰

Fig 11: Offshore Hydrocarbon Mapping Share Price

Symbol: OHM Share price: 5.000 % Change: -16.67 % Change: -1.00			
Open:	5.000	Last Change:	02-28 16:20
Volume:	478,435.0	High:	5.500
Prev close:	6.000	Low:	4.500
Shares issued:	110.704486	Security type:	Equity
52 week high:	14.75	52 week low:	4.500
Index:		Market Cap:	6.64

¹⁰ "OHM Offshore Hydrocarbon Mapping Share Price with OHM Chart and Fundamentals." Livecharts.co.uk, www.livecharts.co.uk/share_prices/share_price/symbol-OHM.

The large providers of seismic data services, including Schlumberger had furthermore purchased an SBL start-up, AOA Geomarine operations, in 2004. Schlumberger, while being a huge competitor, was a particular concern, as SBL represented the next generation of the 3D seismic technology on which it had been founded.

Liquidity Considerations

Throughout the course of the case study it becomes apparent that Warburg Pincus and EMGS clearly had an objective in mind, to IPO. As a usual exit strategy for most PE firms, listing on a public stock exchange is usually the best method to achieve high returns; in fact, it usually generates higher exit returns when compared to acquisitions, both strategic and financial. However, this case is an exception, because the most important underlying factor for pursuing a public listing does not hold true. In fact, Warburg Pincus was not looking to use an IPO as an exit strategy, for they usually hold onto their investments for longer time horizons. What then, was their motif in aiding EMGS with a public listing?

1. Advantages and Disadvantages of an IPO

To answer this, we first need to explore why a company might want to IPO, or not. Like most things in finance, IPOs come at a considerable cost and have a certain degree of risk associated. Companies are subject to more stringent regulation and disclosure requirements. They incur substantial initial and

ongoing listing costs, both fixed and variable. Transparency is required in almost all matters, meaning confidentiality and secrecy are often completely lost. Management will certainly face short-term stock performance pressure, thus potentially eroding long-term financial or development goals; and managers will also have decreased control and flexibility over corporate operations. On the other hand, it will be much easier for companies to access capital in order to fund higher growth. These will also benefit from increased reputation and visibility, of especial importance to smaller-scale startups. Companies will not have to solely rely on a few key investors, thus also potentially improving corporate governance. Lastly, IPOs generally generate higher exit returns compared to acquisitions. From this analysis we can easily deduce that IPOs are generally a very good idea; but does this still hold true if Warburg Pincus does not intend to exit? The answer remains yes, for a simple reason: reputation.

As a small Norwegian startup, EMGS was having issues attracting the main oil & gas giants as clients. Aside from its formerly parent-company, Statoil, most oil & gas players did not use their innovative services; not a particularly troubling fact, since these players were usually slow in implementing technological innovations. However, it is an extremely competitive, price-taker, industry; meaning that if just a couple large players implemented a new technology, most all others would follow suit. This was precisely the idea behind taking EMGS

public. A reputational increase would very likely attract key players like Shell and ExxonMobil, thus starting a cascading effect of new clients adopting their revolutionary technology; an increasingly important task due to the technology's inherent ten-year obsolescence cycle. Therefore, regardless of excluding the exit opportunity potential of an IPO, we concluded that publicly listing EMGS would still be value accretive and an overall good move.

2. Choosing a Stock Exchange

Initial public offerings are complex, costly procedures that entail numerous legal and financial challenges for most any corporation. Yet, they also vastly differ according to where the listing occurs. Although there are hundreds of different stock exchanges across the world, not all should be considered for EMGS. As the case outlines, Warburg Pincus has extensive experience with US-listings and EMGS is a Norwegian company, making New York and Oslo the two main contenders. The first contender is the New York Stock Exchange (NYSE). Founded in 1817, the NYSE is the world's largest stock exchange with a market capitalization of listed companies totaling \$30.9tn; regarded as the most prestigious stock exchange, it is home to most of the blue-chip stocks. As the largest stock exchange, it is also the most liquid with a monthly trade volume (MTV) over \$1.4tn. However, listing on the world's most prestigious exchange also entails numerous costs, including having to comply with US GAAP accounting standards and having to hire local lawyers and accountants; furthermore, the NYSE has numerous very stringent requirements for a

company to list, which fortunately EMGS can meet. These include: (i) Must issue at least 1.1m shares to at least 400 shareholders; (ii) Market value of public shares must be at least \$40m, with a minimum share price of \$4; (iii) Must have \$10m in aggregate pre-tax earnings for the last three fiscal years, including \$2m in most recent year.¹¹ The second contender is the Oslo Stock Exchange, also known as the Oslo Børs. As a minor European stock exchange, it has a relatively small market capitalization of listed companies at \$314.5bn, with less than 200 companies listed mainly operating in the Oil & Gas industry. This means the stock exchange is also very susceptible to oil-price related volatility; naturally, a downward cyclicity would imply doubly hard conditions for an oil-related company listed on a predominantly oil & gas stock exchange. As a small-scale stock exchange, Oslo Børs' MTV is much lower than its US peers, at only \$15.2bn; again, a major concern for Warburg Pincus, who might find it difficult to sell their shares at a future point in time. However, the stock exchange boasts impressively cheap listing and ongoing costs along with more lenient listing requirements. These include: (i) IFRS compliance; (ii) Free float of at least 25% of company shares; (iii) Minimum market capitalization of \$35m; (iv) Minimum share price of \$1.17; (v) At least 500 shareholders each owning a minimum of \$1,170 worth of shares; (vi) Operating profits are not a requirement; (vii) Every public company needs a 40% female board of directors.¹²

¹¹ "NYSE Pricing List." NYSE, www.nyse.com/publicdocs/nyse/markets/nyse/NYSE_Price_List.pdf.

¹² Børs, Oslo. "Oslo Børs' Fees." Oslo Børs' Fees / Shares, Equity Certificates and Rights to Shares / Listing / Oslo Børs / Home - Oslo Børs.

Numerous other stock exchanges could be used to list EMGS, but their costs might outweigh their benefits. The London Stock Exchange (LSE) would be an ideal contender to meet both management and WP half-way. It is a European stock exchange that requires filing under UK GAAP, not the same as IFRS, but a lot more like it when compared to US GAAP. Geographic location is also very important, just a couple hours away from Oslo by airplane, meaning minimal discomfort for management. Most importantly for Warburg Pincus, it is a very large stock exchange and is highly liquid. Furthermore, as most large stock exchanges, it is not centric on one specific industry or sector. This means that the LSE is not as susceptible to oil-price volatility as the Oslo stock exchange. All these factors would make it seem an ideal candidate, but unfortunately the reality is far from that. Listing on the LSE would mean completely nulling both management's and Warburg's previous experience and know-how. Both entities would be required to hire local legal, auditing, and financial advisors to ensure the process runs smoothly, thus incurring heavy costs that could be easily avoided. Furthermore, it would nonetheless require EMGS to change accounting standards and list in a foreign country, but without as many benefits as listing in New York. Lastly, London remains substantially more expensive than Oslo; ultimately meaning it would not meet both entities half-way, it would make them diverge even further from their central interests.

These same points apply to most other large international stock exchange.¹³ Whether we consider Hong Kong, Tokyo, or Shenzhen, any non-US-listing would erode Warburg's expertise, and any non-Oslo listing would erode management's incentives. This also means that listing under other Nordic exchanges such as Stockholm or Helsinki would still not be viable options. Lastly, we also took into consideration the possibility of opting for multi-listings on different stock exchanges. Although a great way to raise more capital from diverse markets and further expand reputational reach, such operations are usually reserved to the giant multinational corporations that have a global footprint. As a small Norwegian startup that is heavily cost-centric, such an option would simply not be on the table, rather choosing a single but effective stock exchange for their listing.

3. Going for an Alternative Route on the NASDAQ

Although the case does not mention any other contenders, we took into consideration a central point of the case; the study outlines Warburg Pincus' desire of listing the company as a growth-focused technology startup rather than an oil & gas services company. For this reason, we also wanted to add a third contender, New York's NASDAQ stock exchange. It is the second largest stock exchange in the world, with a market capitalization of listed companies totaling \$10.8tn, and MTV over \$1.2tn. The NASDAQ is well regarded as being

¹³ "Admission and Annual Fees." Admission and Annual Fees - London Stock Exchange, www.londonstockexchange.com/companies-and-advisors/listing/fees/fees.htm.

a tech-focused stock exchange, with most Silicon Valley giants amongst its numerous listings. Furthermore, it is a very good value compromise compared to the NYSE and Oslo Bors. As a pure electronic stock exchange, the NASDAQ has significantly lower listing and ongoing costs compared to the NYSE, and is actually even cheaper than the Oslo Bors in some regards. However, it actually holds the most stringent requirements out of our three contenders, including: (i) US GAAP; (ii) Must have minimum of 1.25m publicly traded shares at a minimum price of \$4; (iii) Must have at least three market makers for its stock; (iv) Must either have aggregate pre-tax earnings in past three years of at least \$11m, in two years at least \$2.2m, and no year with a net loss, or a minimum aggregate cash flow of at least \$27.5m for the past three years, with market capitalization over the previous year of at least \$550m, with revenues at least \$110m.¹⁴

Out of the three aforementioned contenders we strongly believe the NASDAQ would be the most appropriate stock exchange to accommodate EMGS' listing. Not only does it boast incredible reputational and liquidity advantages over the Oslo Bors, but it is also significantly cheaper than the NYSE. Granted, EMGS will still have to comply with US GAAP and hire local accountants and lawyers, but they will potentially gain from a tech-listing status. This implies potentially higher listing valuations and technology analyst coverage. Naturally, predicting a company's IPO valuation is almost impossible,

¹⁴ NASDAQ. "NASDAQ Initial Listing Guide." NASDAQ, listingcenter.nasdaq.com/assets/initialguide.pdf.

thus we cannot say with certainty which stock exchange would yield the greatest return. However, US listings on average generate a 17.3x PE ratio, compared to Oslo's 14.8x. The confusion also spills over to the investment banks trying to value EMGS throughout the course of the case study. In fact, valuations ranged from \$630m to \$1.6bn, reflecting analyst's uncertainty on whether to consider EMGS as a high-growth technology company or just another oil & gas services company. Once again, listing on the NASDAQ would serve as a potent indicator as to what type of company EMGS is. It would also allow to attract big North-American clients like ExxonMobil, further marketing its products to the industry. Lastly, other main exchanges like London and Hong Kong are disregarded because the costs and compliance requirements far-outweigh the benefits compared to other peers.

4. Conclusion

What the case clearly portrays is that financial and logical reasoning are not always what occur in real life. In fact, national pride and emotions ended up victorious with EMGS' management successfully completing an Oslo Bors listing in March 2007. The IPO itself was quite successful, raising over \$317m, greatly surpassing the expected \$200m. However, Warburg's fears came true with the market perceiving EMGS as an oil & gas services company, further rendering the company susceptible to oil price cyclicity. These fears culminated with the price of oil crashing below \$50 a barrel, pushing down EMGS' market capitalization to just \$43m. A similar downward spiral to what

was observed by competitor oil & gas services company OHM in the UK. These negative effects would potentially have been mitigated if the company had opted for a US-listing.¹⁵

¹⁵ "EMGS Investor Relations." EMGS Share Performance, EMGS, www.emgs.com/share_information/share_performance/.

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