

Getting Paid for Innovation: How to beat the odds!!

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October 8, 2017

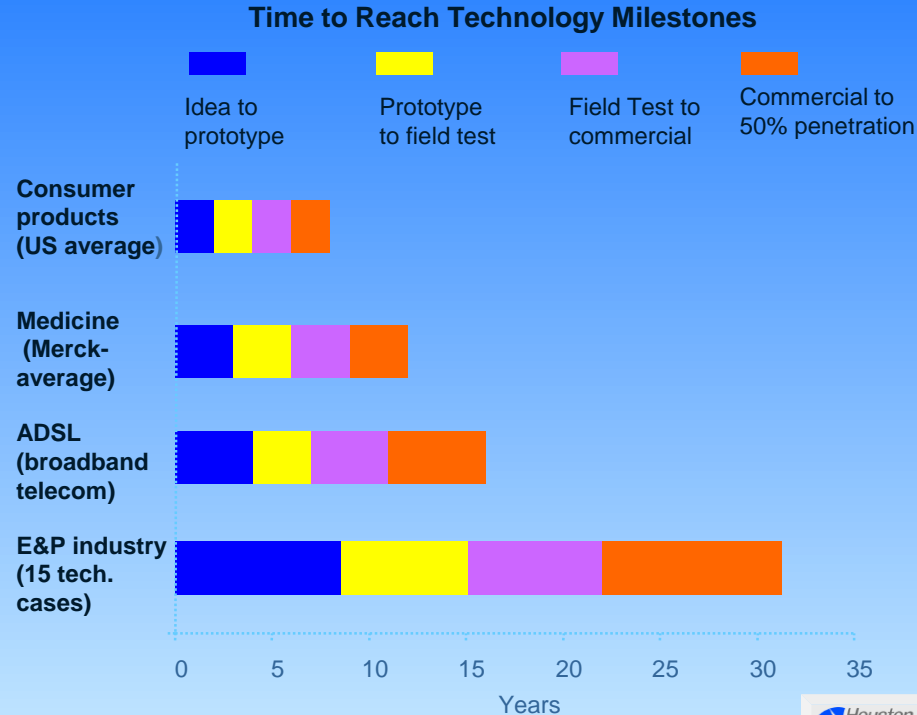


A large offshore oil drilling rig is silhouetted against a sunset sky. The rig's derrick is the central focus, with various platforms and ladders visible. To the left, there are large red storage tanks. The ground is a flat, dark surface, possibly a barge or a pier. The sky transitions from a deep blue at the top to a warm orange and yellow near the horizon where the sun is setting.

Barriers to success History lessons Beating the odds

E&P “Half-Life” is 30 Years

Compared to other industries, E&P industry takes too long to bring technologies to market.

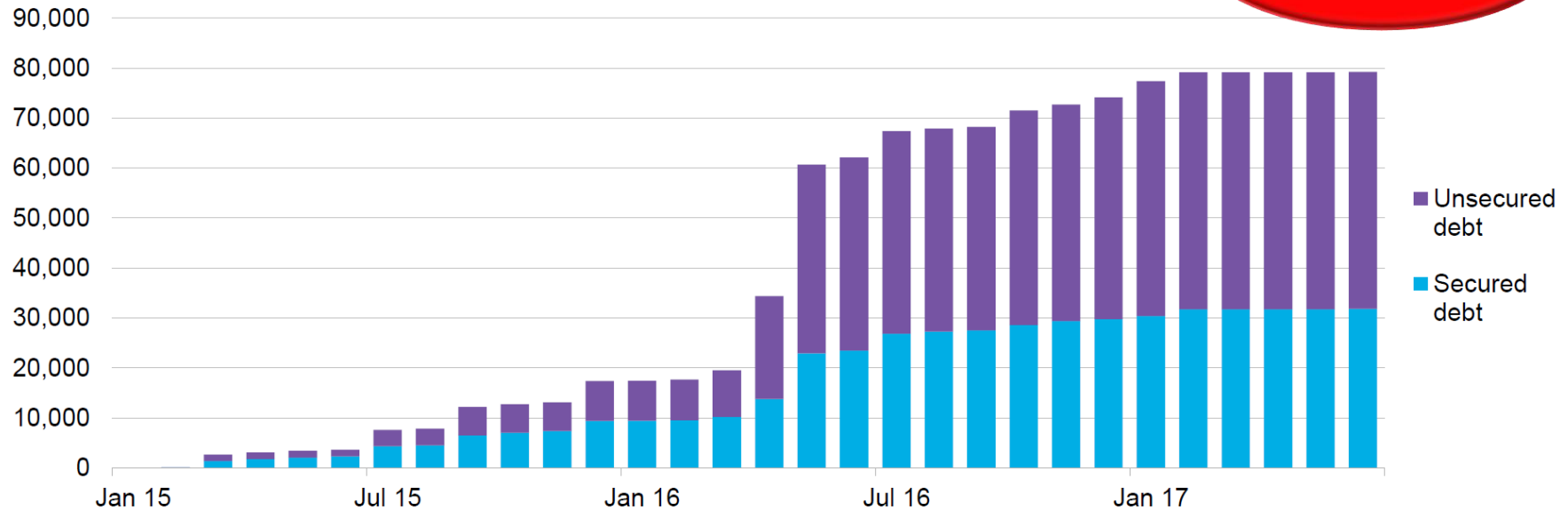


Source: McKinsey & Co., Houston Technology Center



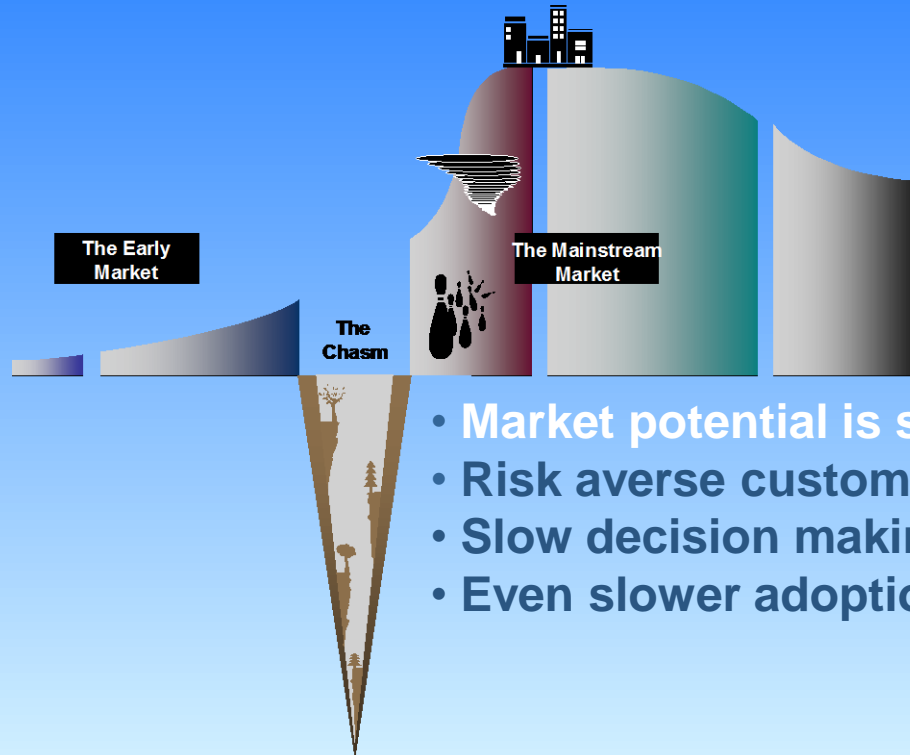
US oil and gas company bankruptcy filings, 2015-present

Cumulative outstanding debt of U.S. E&P companies under Chapter 11 protection (\$ million)



Source: Bloomberg New Energy Finance, Haynes and Boone LLP

Markets aren't helpful

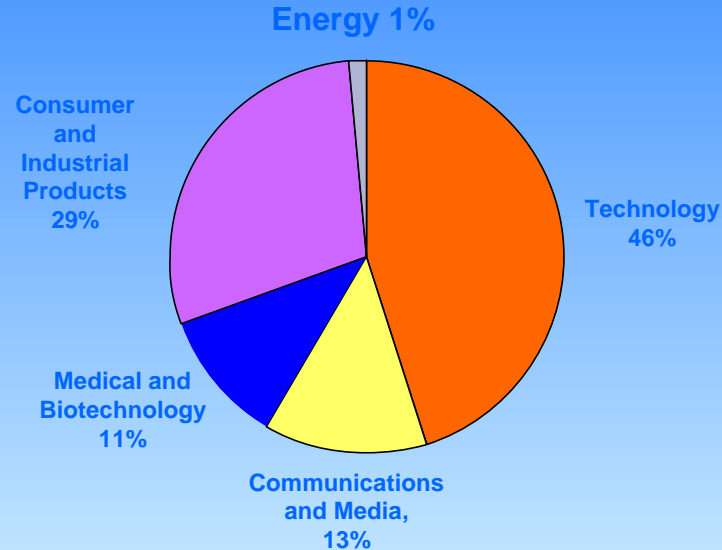


- **Market potential is small**
- **Risk averse customer base**
- **Slow decision making**
- **Even slower adoption rates**

Funding is small, too!!

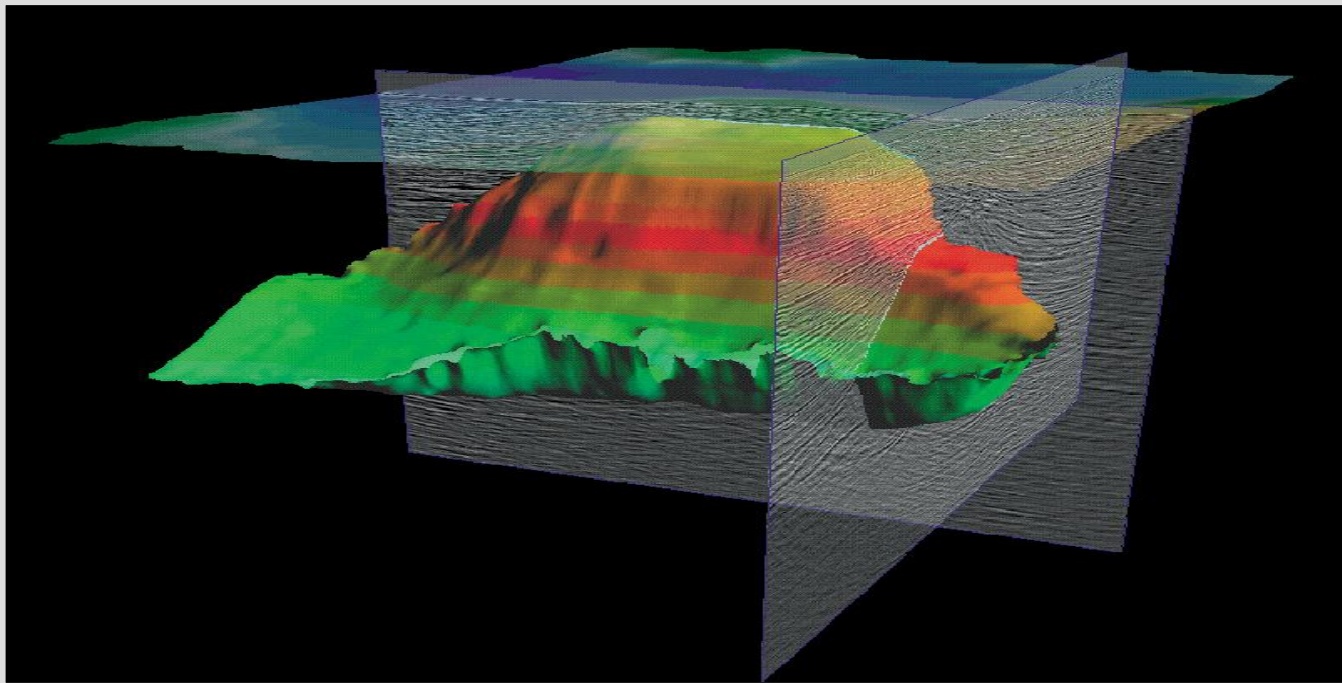
Only 1% of all venture capital and private equity has gone into oil and gas exploration, alternative energy, enhanced recovery technology, coal, conservation, and other energy categories. The S&P 500 weighting of energy is 9%.

**U.S. Venture Capital and Private Equity Disbursements ,
1999-2004**



Source: Venture Economics

3D Seismic Imaging



Source: Baker Hughes

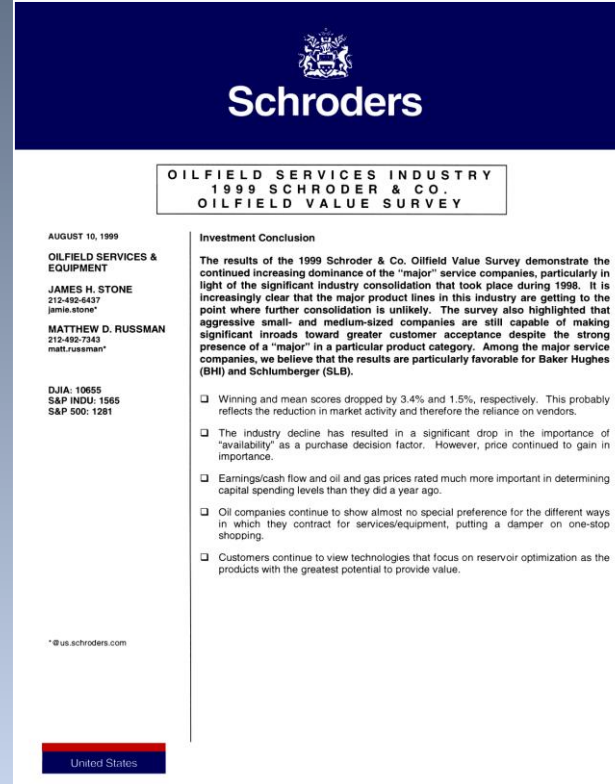
Contribution to Falling E&P Costs

Schroders Oilfield Value Survey

3D Seismic voted #1
(three years running)

**“Technology deemed to
provide the most value
to customer success”**

Source: Schroders



The image shows the cover of a Schroders report titled "OILFIELD SERVICES INDUSTRY 1999 SCHRODER & CO. OILFIELD VALUE SURVEY". The cover is white with a blue header containing the Schroders logo. The report is dated August 10, 1999, and is prepared by James H. Stone and Matthew D. Russman. It includes a table of contents with sections for "Investment Conclusion" and "United States". The "Investment Conclusion" section discusses the results of the 1999 Schroder & Co. Oilfield Value Survey, highlighting the continued increasing dominance of the "major" service companies, particularly in light of the significant industry consolidation that took place during 1999. It also mentions that the survey also highlighted that aggressive small- and medium-sized companies are still capable of making significant inroads toward greater customer acceptance despite the strong presence of a "major" in a particular product category. Among the major service companies, we believe that the results are particularly favorable for Baker Hughes (BHI) and Schlumberger (SLB).

Schroders

**OILFIELD SERVICES INDUSTRY
1999 SCHRODER & CO.
OILFIELD VALUE SURVEY**

AUGUST 10, 1999

**OILFIELD SERVICES &
EQUIPMENT**

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S&P INDU: 1565
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Investment Conclusion

The results of the 1999 Schroder & Co. Oilfield Value Survey demonstrate the continued increasing dominance of the "major" service companies, particularly in light of the significant industry consolidation that took place during 1999. It is increasingly clear that the major product lines in this industry are getting to the point where further consolidation is unlikely. The survey also highlighted that aggressive small- and medium-sized companies are still capable of making significant inroads toward greater customer acceptance despite the strong presence of a "major" in a particular product category. Among the major service companies, we believe that the results are particularly favorable for Baker Hughes (BHI) and Schlumberger (SLB).

- Winning and mean scores dropped by 3.4% and 1.5%, respectively. This probably reflects the reduction in market activity and therefore the reliance on vendors.
- The industry decline has resulted in a significant drop in the importance of "availability" as a purchase decision factor. However, price continued to gain in importance.
- Earnings/cash flow and oil and gas prices rated much more important in determining capital spending levels than they did a year ago.
- Oil companies continue to show almost no special preference for the different ways in which they contract for services/equipment, putting a damper on one-stop shopping.
- Customers continue to view technologies that focus on reservoir optimization as the products with the greatest potential to provide value.

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United States

Seismic Shareholder Value Destruction

Top 8 Seismic Companies - 1995 to 1999

Revenue -	\$17.6 B
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Net Income -	\$.4 B
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2.2%

Capital Charge -	\$ 2.0 B
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Value Destroyed	\$ 1.6 B
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Too many seismic boats

Too much spec seismic

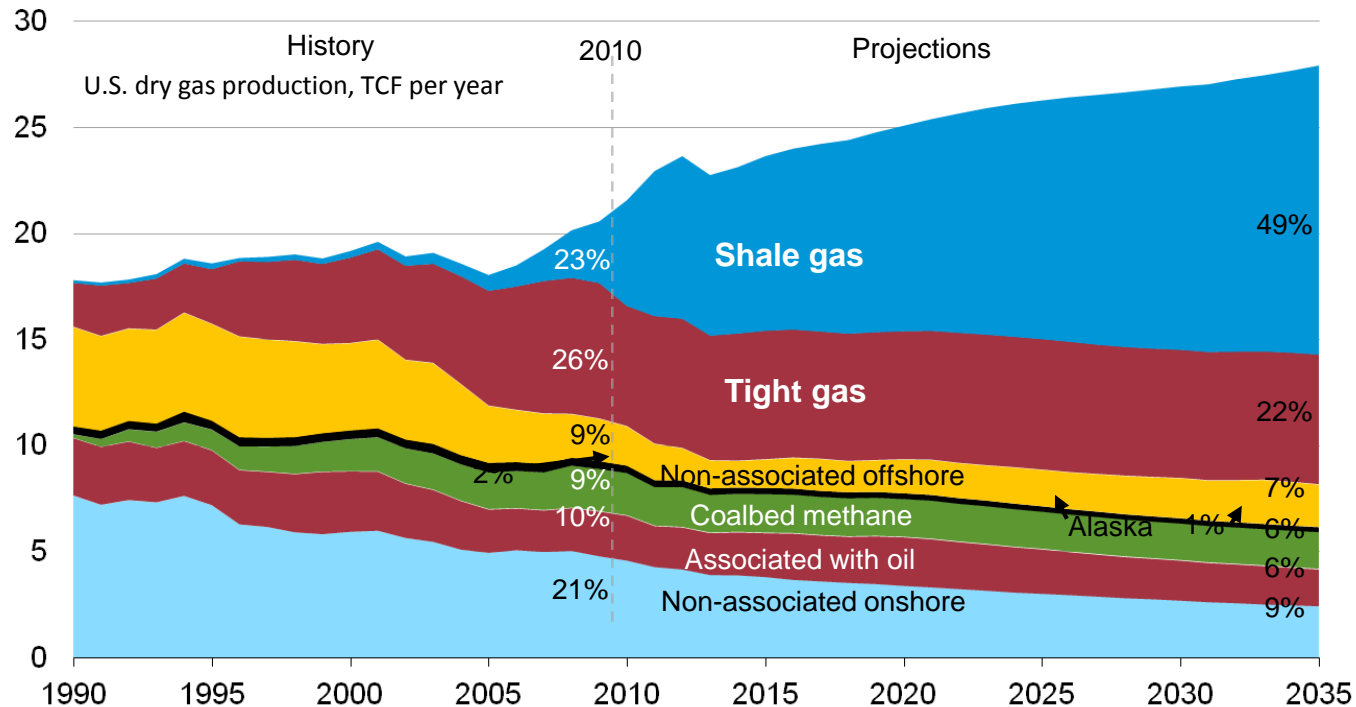
Source: Simmons & Company, Baker Hughes

Big fracs get big results



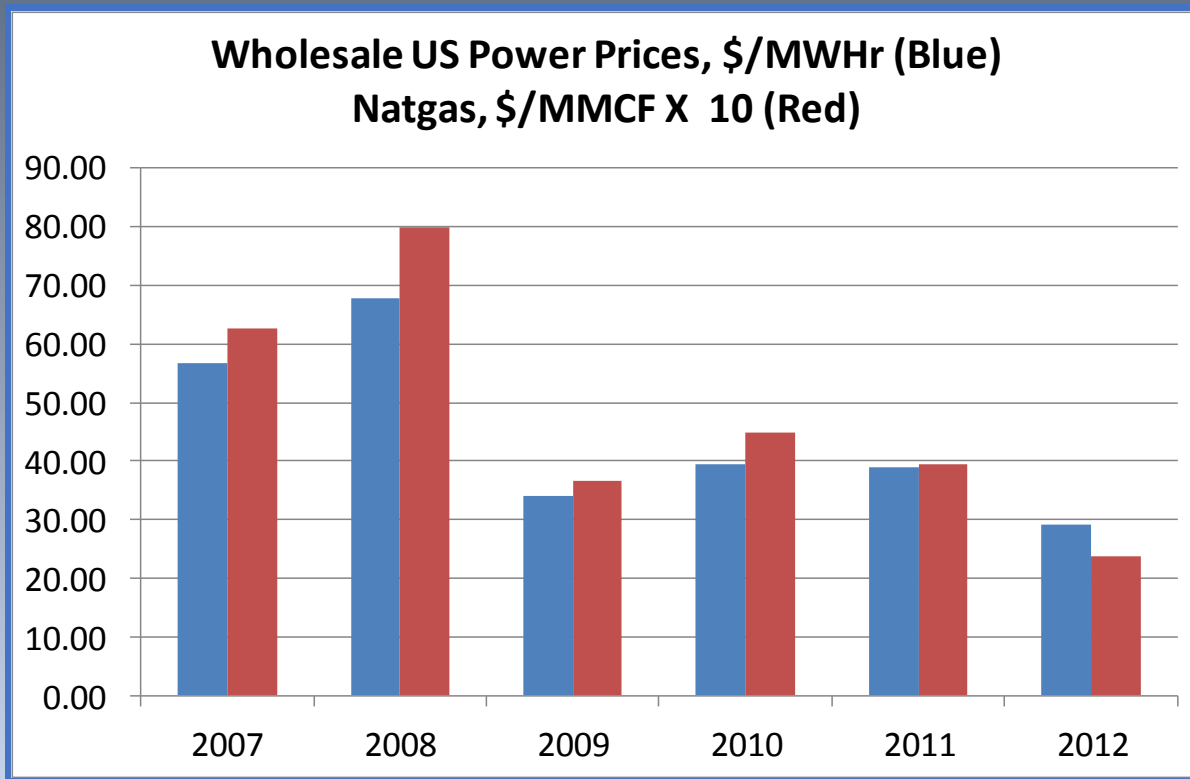
Impact on North American market

Production jumps – price slumps!!



Gas redefines electric power markets

Low cost gas drives power prices lower

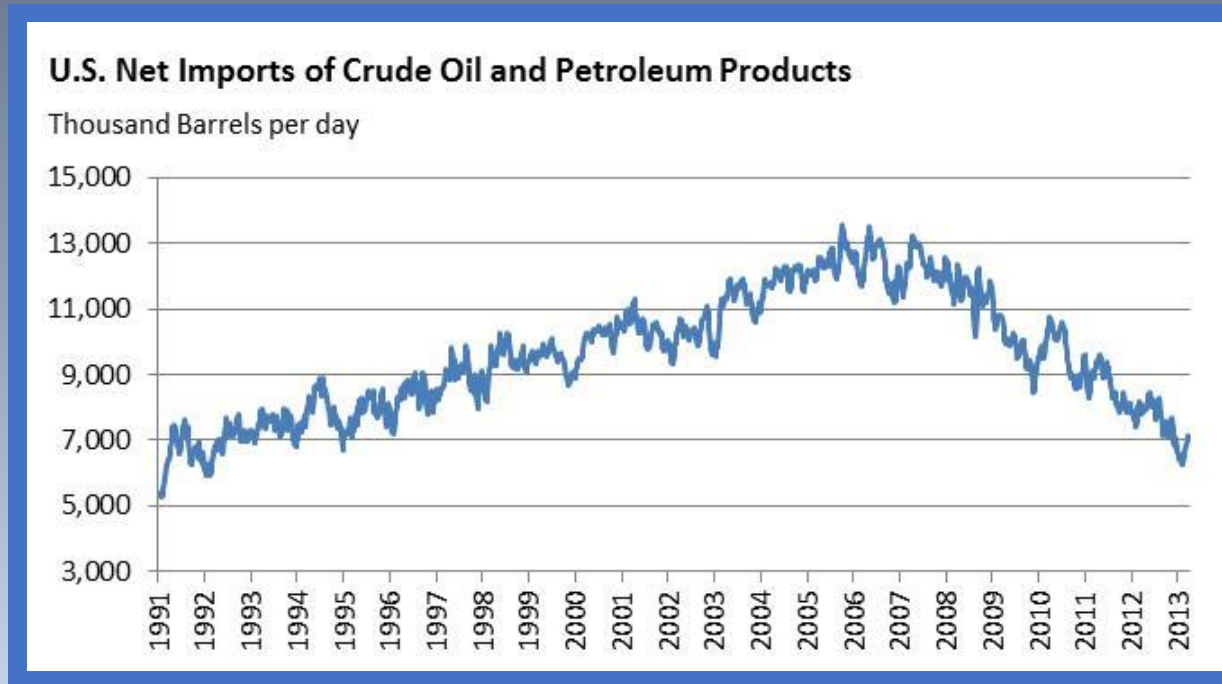


Economic impact of gas only

- ✓ Power prices down by \$40/MWHr since 2008
- ✓ Electric Power market is 4 billion MWHr annually
- ✓ Users in the supply chain benefit more than \$160B
- ✓ 65% of Natgas not used for electricity generation
- ✓ 2012 price \$5.50 cheaper than 2008
- ✓ Delivers a direct benefit of \$90B

Unconventional wisdom

US imports fall due to production increase and consumption decline.
Reduces import bill by \$225 Billion.



US Pressure Pumpers

Annualized EBITDA per HHP			
<u>Q4 2016</u>			
		A	-19
		B	-132
		C	6
		D	-86
		E	6
		Median	6
		F	25
		G	59
		H	-15
		I	29
		J	60

Source: Morgan Stanley

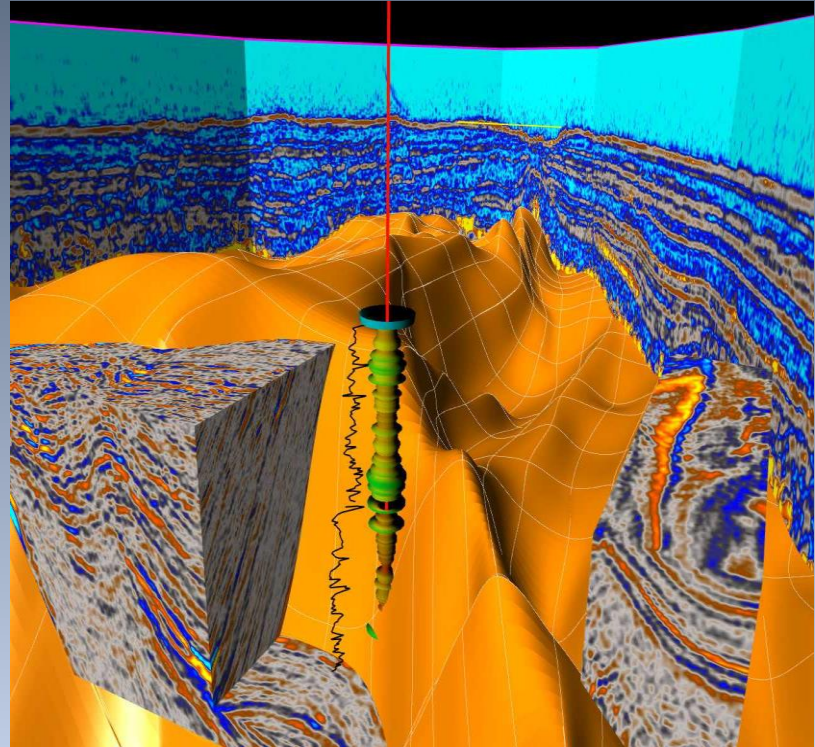
Exit Strategy Matters

History Lessons

The Magic Earth Story

- Texaco in house technology
- Offered to seismic industry with no takers
- 1999 startup with Texaco scientists
- Potential to increase productivity and exploration success rates
- Sold to HAL for \$100M in 2001

Source: Magic Earth





Startup to IPO in 15 Months: Monetization matters!



How to beat the odds

- Exit strategy – discuss at every BOD/partner meeting, speed matters
- Incentivize everyone who makes a difference
- Proper capitalization – avoid an unwanted second round
- Use greed to your advantage – sponsor wants to get paid
- Just because the technology is great, it doesn't mean you will make money
- Management team needs to evolve with the business
- IPO is a valuation event – not a liquidity event