

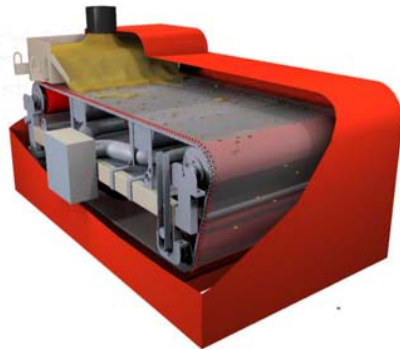
SME Innovation Forum  
2009

*The Importance of  
Innovation Co-operation*

Ole Melberg. 01.10.2009

energy ventures 

# Energy Ventures - An overview



## Industry Trends

- Growth in demand
- Oil and gas remain main sources of energy
- E&P activity set to grow
- Technology - key to bridging the energy gap



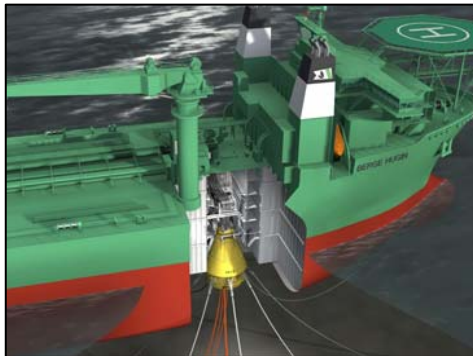
## Strong Management

- Industrial foundation
- Excellent network
- Technology understanding
- Relevant experience
- Business acumen

Four Energy Sector  
Venture Capital Funds with total  
commitments from investors of  
NOK 2,330 / USD 400 million

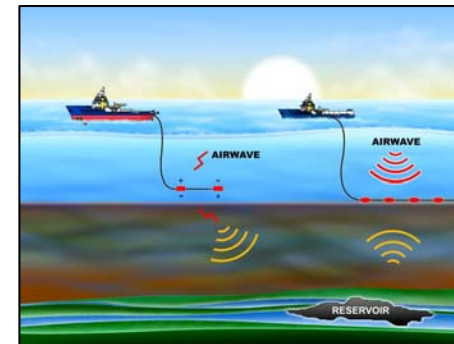
## Main Focus

- High growth oil and gas technology companies
- Unique technologies or solutions
- Combination of capital and competence to create value for investors



## Main Investors

- |                        |                  |
|------------------------|------------------|
| • Ferd                 | • IKM Group      |
| • Temasek Holdings     | • Storebrand     |
| • LGT Capital Partners | • Jebsen         |
| • Gjensidige           | • Umoe           |
| • KLP                  | • Klaveness      |
| • DnB NOR/Vital        | • Hoegh          |
| • Argentum             | • Partners Group |



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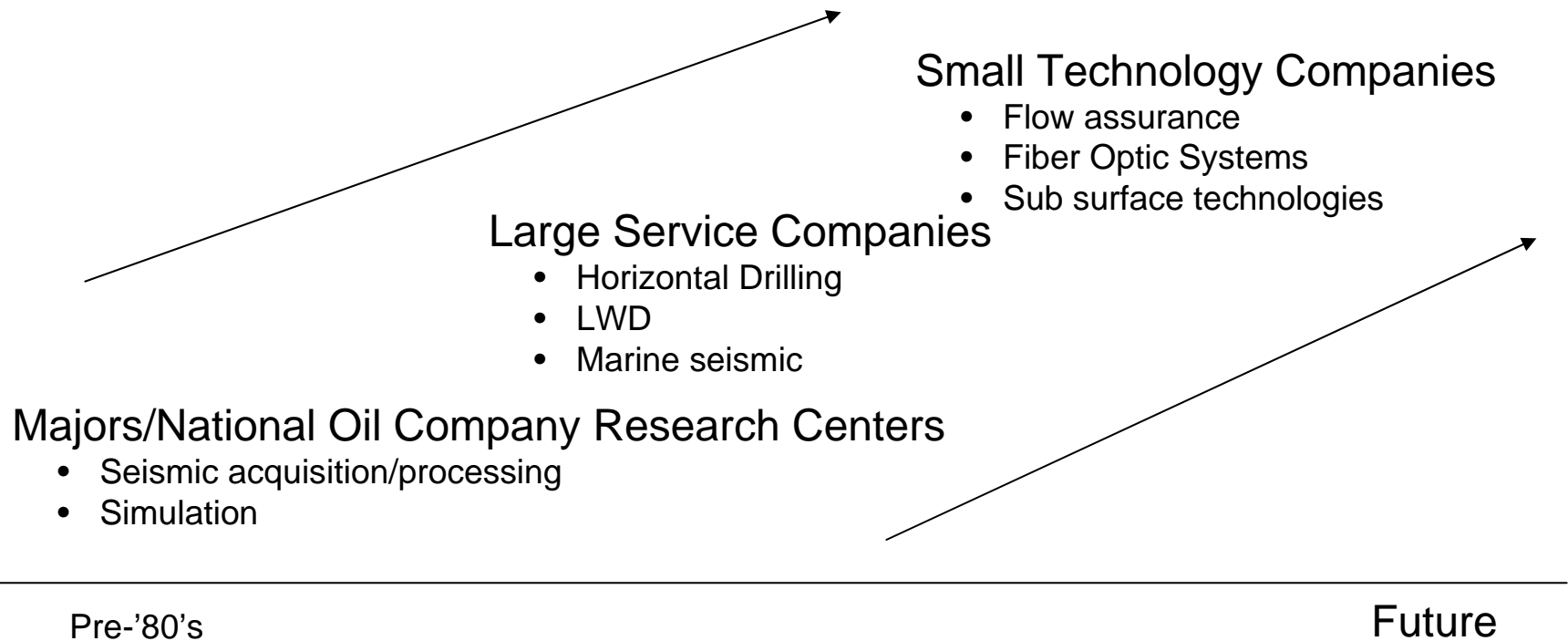
## Sector macro outlook: early October 2009

- The oil price has doubled since it bottomed out in March 2009 and is now in the USD 70 territory. Can this be sustained?
- Uncertainty on energy prices has resulted in stoppage and delays of projects. Most oil companies are investing free cash flows only. Activity levels down. Increased cost focus, which means pressure on margins and changed priorities
- New technology and technology development is still very important and not so much affected by increased volatility. But JIPs are being delayed and willingness to try new technology products is down
- Technology development on the suppliers' side is negatively affected
- E&P spending down in most regions and for most companies; although they claim to be investing through the cycle. The crisis feeling has gone away, but could return as the upturn has yet to prove itself
- Still strong focus on alternative resources / new energy, but affected by the downturn
- Environmental issues call for a cleaner energy mix and for better energy efficiency
- Energy security drives technology and new energy development

The long term fundamentals of our industry remain strong. The volatility creates uncertainty and lack of confidence in the future. Confidence fosters R&D and innovation. Uncertainty puts the breaks on.

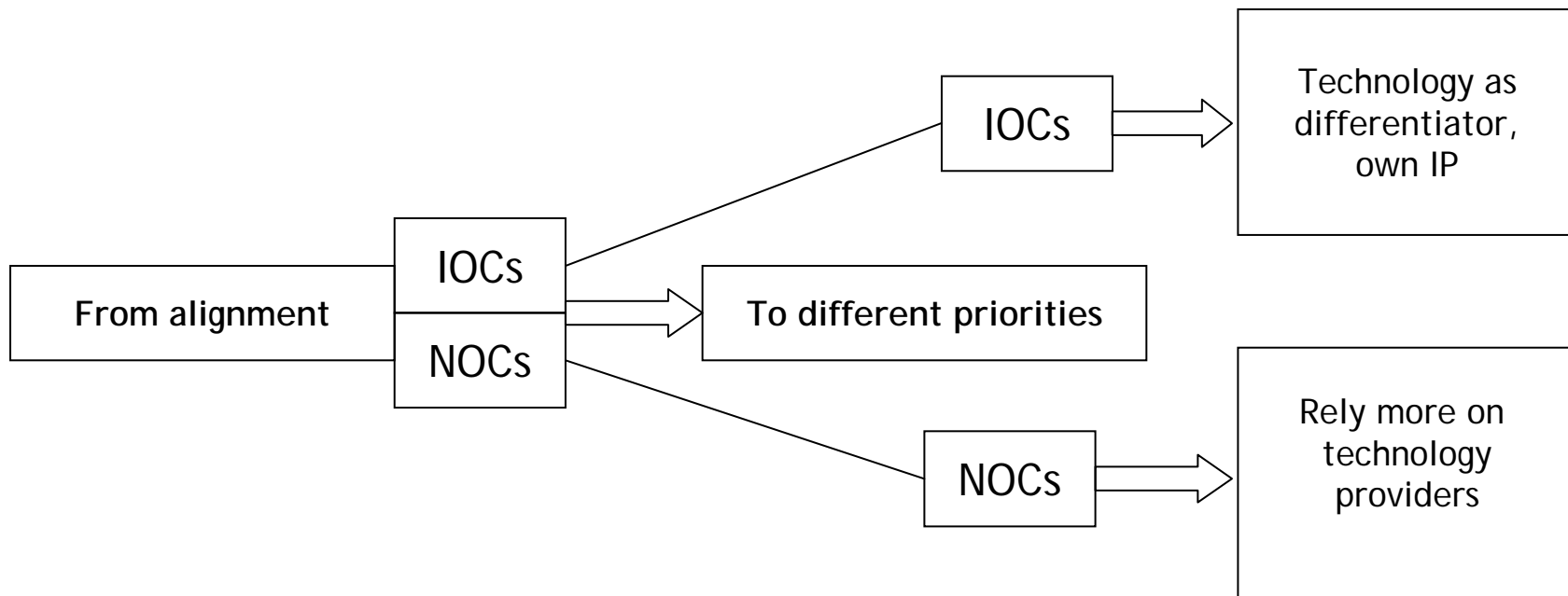
# Technology Development Trends

Majors used to dominate R&D, then Large service companies took over, but that has changed.



# Technology Development Trends

## Recent trend shift



# Innovation is more important than ever

## Technology related concerns



**Strategy:** How can companies build a distinct strategy based on technological capabilities?



**Investments in new technology:** Who should invest in new technology development - and how ?



**Organisation:** How should the interaction be organised to spur technology development?



**Sourcing:** How can the industry work together to maximize value creation from new technology?

## Why is this of current interest:

Many companies fail to leverage their technological strength and use it to competitive advantage

Investments are very cyclical

Less willingness and capacity for new technologies

There are limited incentives for suppliers to push new technologies towards the IOCs

# How to meet the opportunities and challenges in the E&P industry

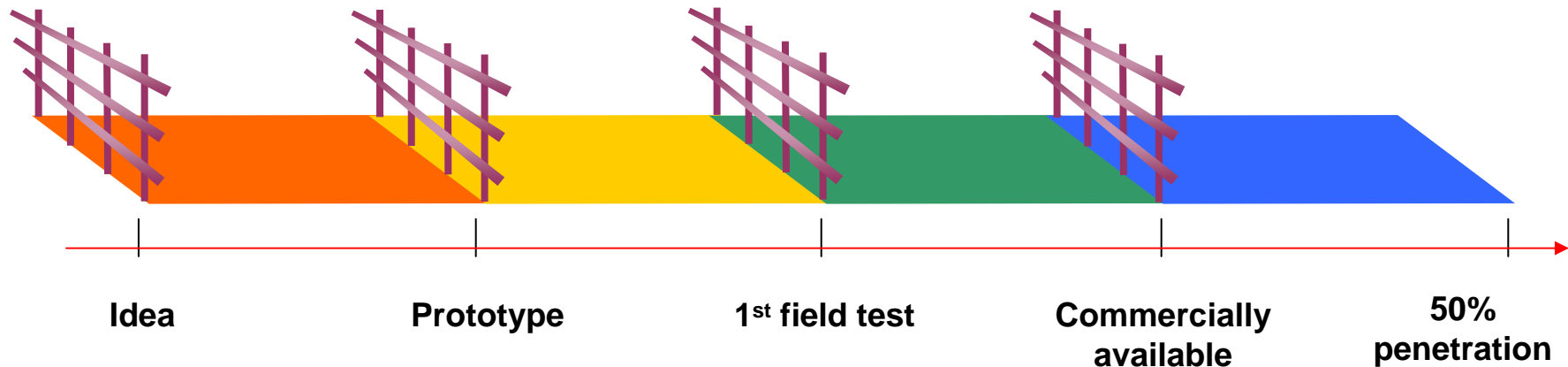
	<b>Business challenges</b>	<b>Possible new technologies</b>
<b>Mature Area/ Brownfield</b>	<ul style="list-style-type: none"> <li>• Increase oil recovery rate</li> <li>• Improve economics of marginal fields</li> <li>• Reduce operating costs</li> </ul>	<ul style="list-style-type: none"> <li>• Smart wells / advanced but simple compl.</li> <li>• Downhole separation</li> <li>• 4C/4D seismic</li> </ul>
<b>Exploration, Deepwater &amp; Frontier</b>	<ul style="list-style-type: none"> <li>• Reduce exploration drilling costs</li> <li>• Reduce development costs</li> <li>• Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Direct Hydro Carbon Indication (DHI)</li> <li>• Dual-gradient drilling / Deep drilling</li> <li>• DW slimhole / monobore /casing drilling</li> <li>• Subsea processing and boosting</li> </ul>
<b>Gas</b>	<ul style="list-style-type: none"> <li>• Reduce processing costs</li> <li>• Reduce transportation costs</li> <li>• Connect gas fields to markets</li> <li>• Tight gas and shale gas</li> </ul>	<ul style="list-style-type: none"> <li>• Gas-to-liquid technologies (GTL)</li> <li>• Sour gas processing</li> <li>• Multi layered fracturing</li> <li>• Gas re-injection</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Reduce CO2 emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon sequestration</li> <li>• New energy</li> </ul>
<b>Productivity</b>	<ul style="list-style-type: none"> <li>• Higher productivity</li> <li>• Demanning offshore</li> <li>• Streamlined work processes</li> </ul>	<ul style="list-style-type: none"> <li>• Broadband communication operations</li> </ul>

# Everyone has a role to play

Oil and gas companies ①	Suppliers, services providers & technology companies ②
Academia. ③	Seed and VC Finance ④

Authorities provide frame conditions for all players with front end loading

# Barriers to technology development

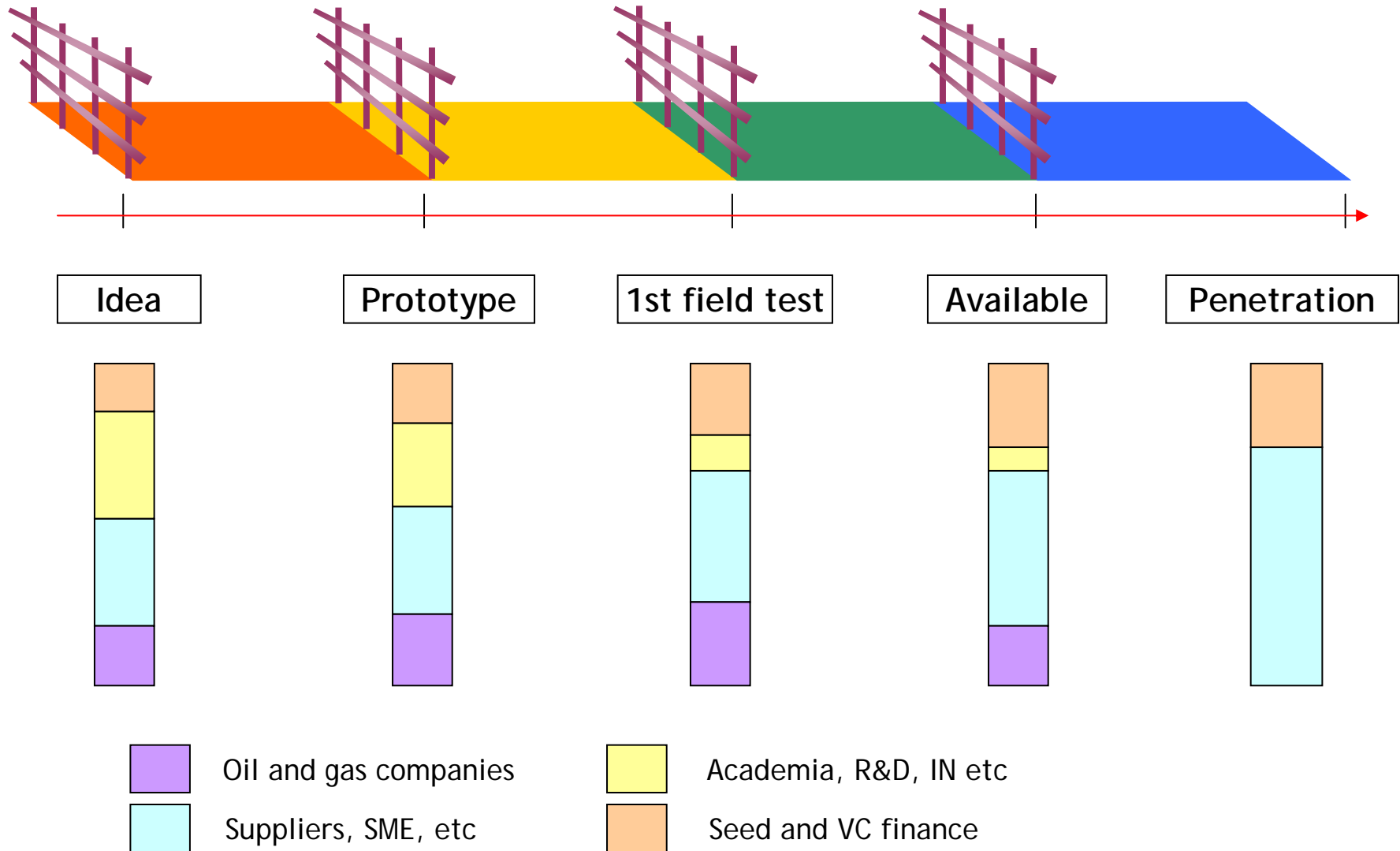


## Barriers

- |  |  |   |  |  |
|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>• Weak understanding of strategic rationale</li> <li>• Lack of facilitators</li> <li>• Lack of funding</li> </ul> | <ul style="list-style-type: none"> <li>• Lack of funding stability</li> <li>• Lack of patent protection</li> <li>• Satisfied if the pilot works</li> </ul> | <ul style="list-style-type: none"> <li>• Organisational conservatism</li> <li>• “Not invented here” syndrome</li> </ul> | <ul style="list-style-type: none"> <li>• Insufficient cooperation</li> <li>• Asset vs R&amp;D</li> <li>• Not in the services business</li> </ul> | <ul style="list-style-type: none"> <li>• Build scale</li> <li>• Organizational dev.</li> </ul> |
|--|--|---|--|--|

EV has looked at 1200 opportunities and invested in 23.

# Who is doing what in a commercialisation process?



# Barriers within E&P companies impede technology development

## Strategy



### *Weak understanding of strategic rationale for being a technology leader*

- Lack of technology-based strategy
- Is technology is core business?
- “Free-rider” notion makes sense
- Lack of taking the “shaper” role

## Funding



### *Lack of stability in funding*

- Cutting good projects / R&D
- Difficult to fund “field test phase”
- Lack of tools
- Limited Venture Capital available

## Organisation



### *Organisational conservatism*

- Less strategic/holistic perspective
- Uptime focus
- Safety, health and environmental issues
- Homogenous demographics
- Lack of talents
- The “not-invented-here syndrome”

Oil and gas companies are not the right sole partner in the commercialisation process.

## Sourcing



### *Insufficient cooperation with technology suppliers*

- Contracts have the wrong incentives
- Independent players have limited access
- Lack of “win-win” incentives
- Difficulties over IP issues

# Why does professional private equity add value to investments?

- Direct ownership approach, including Board participation
- Experienced teams
- Strong industry and financial network
- International business orientation
- Strategic development
- Best financial structure at each given point in time
- Organisational development
- Distribution / JIP / first user introduction
- Action oriented style due to time constraints
- Demanding owners

## Venture Capital in 2009 - Financially distressing times

- The Norwegian Venture Capital Association (NVCA) estimated that there were over 10 000 growth companies in Norway in 2007.
- These contribute to above 14% of the value creation, measured as total salary and operating profit, and close to 20% of the workforce.
- Young growth companies which had VC equity invested in 2003-2005, had a yearly growth in value of 55% in the period 2003-2007 (average in Norway was 15%).
- Risk (or venture) capital is important to secure growth for these companies
- The availability of risk capital has decreased due to the financial crises:
  - Many funds are in a tough situation - not able to continue investing in portfolio companies that are in dire need of capital.
  - Large banks and pension funds are main contributors to VC funds, but as many of these institutions suffer from weakened balance sheets and have lower liquidity, there will be less capital to invest.

Others will have to step in to fill the gap  
Innovation in Norway is doing a tremendous job

## Venture Capital in 2009 - Financially distressing times (cont.)

- Banks are not showing the same willingness to contribute with debt financing, which increases the need for equity investments.
- VC funds expects longer holding period for their portfolio companies - which may lead to reduction in new investments in order to conserve the capital for existing companies
- Without new capital, NVCA has estimated that up to 40 000 work places could be in trouble
- It is therefore important to:
  - Strengthen the access to credit for the growth companies
  - Improving the access to risk capital for the companies
- The equity market is strengthened through the Norwegian Government providing capital for companies like Argentum and Investinor (owned by IN)
- Finance is available from government sponsored / supported initiatives like DEMO 2000, the seed corn funds, incubator funds, corporate start-up funding, private angle investors, Innovation Norway, etc.

Innovation is stopping up / being delayed because of lack of finance  
The paradox repeats itself: The best investments are possible when funds are limited

# How can research, academia, finance and industry work together in early phases of technology development?

- Early stage innovation is by nature very technology driven
- Early phase finance is often provided by the entrepreneur together with soft funding from authorities, industry, angle investors or finance arms of public innovation initiatives
- After the initial development good initiatives qualify for seed corn finance, which often is supported by government risk mitigation or soft funding
- The next typical phase is VC funds which are truly professional equity investors
- Successful companies will after the VC phase normally be able to finance themselves or will end up being merged into already existing large industrial or financial buyers
- An excellent sponsor could be the E&P companies' incubator programmes

Good projects managed by good people will always be financed

## Recommendation 1. General

- Strengthen DEMO 2000 OG 21 and similar initiatives
  - Stronger focus on smaller technology companies
  - Open for non-Norwegian technology companies to be sponsors of DEMO projects which are relevant for the NCS
  - Map technology needs outside of the NCS also to help Norwegian technology companies grow and focus on international markets
- Help argue for giving Petoro the resources they need to develop their portfolio and push technology in a way which is commensurate with their size and significance
- Nurture entrepreneurship in large corporations as well as individually
- Develop a professional relationship with the professional energy sector technology seed and VC funds. Bring us in early
- Create a financial arm in DEMO 2000 / OG 21 / NRC
- Work together rather than against one each other
- Norway is a small country with often too many initiatives

## Recommendation 2. Professional Equity

- Make funds available
- Bring professional equity providers in early
- Entrepreneurs / SMEs need more than capital. They need competence and network too
- Professional equity needs to sell their product better
- In order for a relationship between an entrepreneur / SME to work well it should be organised as a partnership
- Be open and honest when the partnership is established including alignment on the objectives

## Recommendation 3. The E&P and oilfield services and technology industry

- Establish new and work on established relationship with academia / R&D institutes. Establish milestones
- Be open to relationship with entrepreneurs / SMEs / Seed funds and VCs
- You need both what you develop from within and what is available from the outside
- Watch the "not invented here syndrom" which seems to ride part of your organisations. The more so the closer you come to the Assets / Business Units
- The main IP principle ought to be that IP should rest with the party which use the same IP in their international market efforts
- Develop better relationship internally so that you are aligned on the importance of technology development; including a uniform way to foster and handle it. R&D and line.



Thank you for your attention