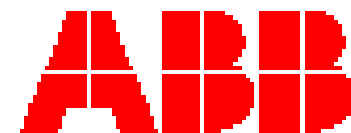
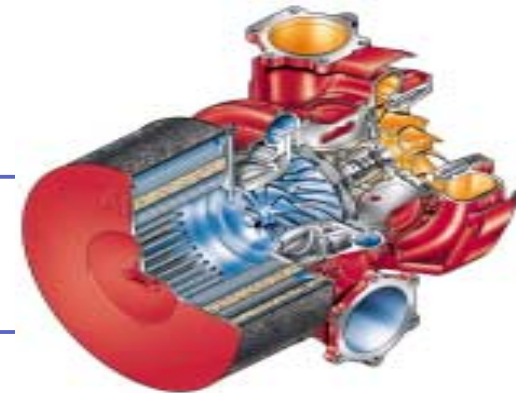


Internationalisation of Norwegian O&G Industry- The Technology Route

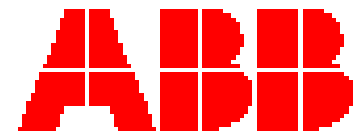


DnV 30.11.2001
Rune Strømquist
Senior Vice President Technology

Presentation Overview

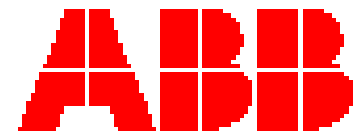
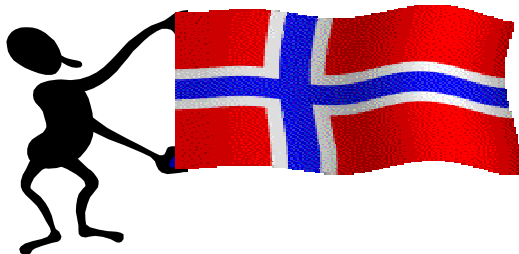
- **Goals and current status**
- **The challenges**
- **The way forward**
- **Conclusions**

**Internationalization of
the Norwegian Supplier
Industry, the technology route**



Main targets for Norwegian Offshore Industry

- **Increase value creation on the Norwegian Continental shelf**
- **Attract capital to Norwegian Industry and The Norwegian Continental Shelf**
- **Make Norwegian Operators and Contractors competitive in Norway and internationally**



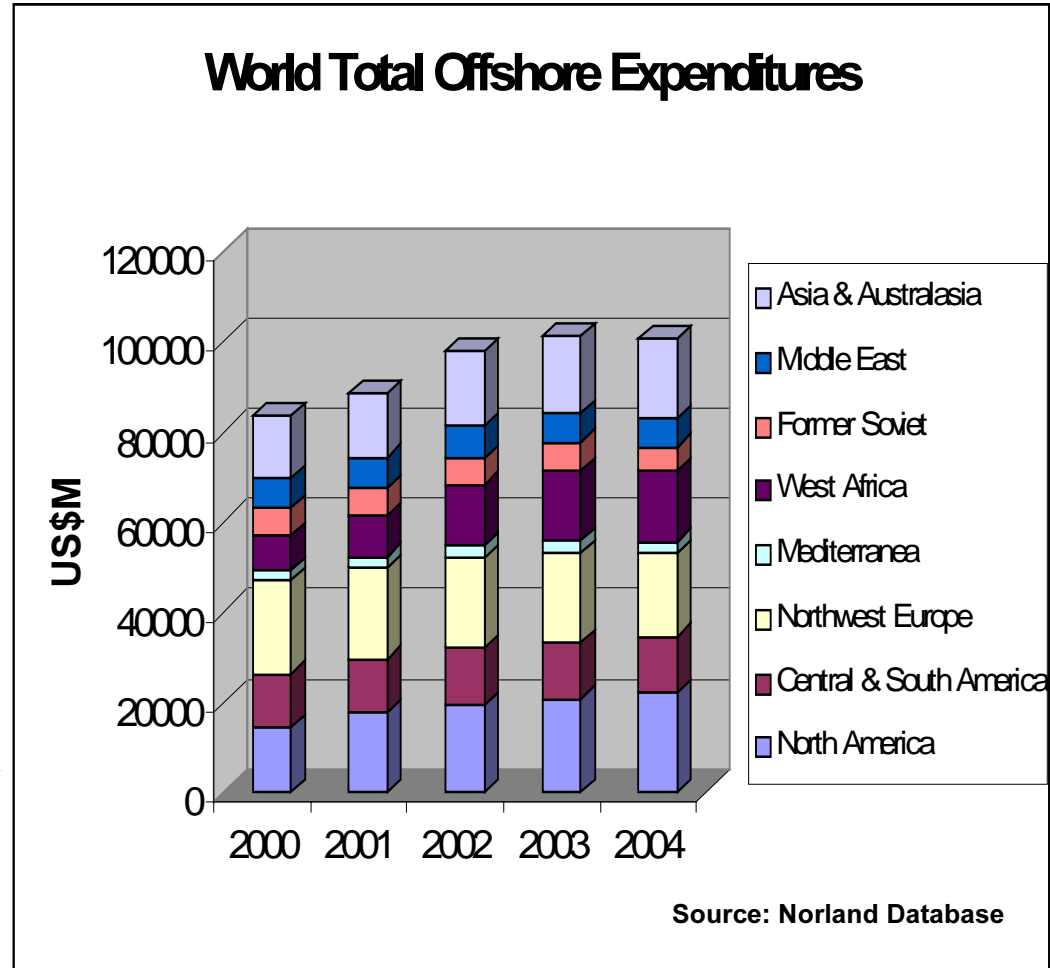
Internationalization for sustainable growth

- The world offshore market is expected to grow some 20% from 2001 to 2004

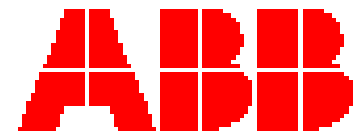
- **Norway** 5%
- **West Africa** 65%
- **North America** 30%

- Growth driven primarily by

- Deepwater
- West Africa & North America
- In the NS, M&M and field life extension

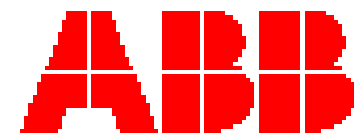
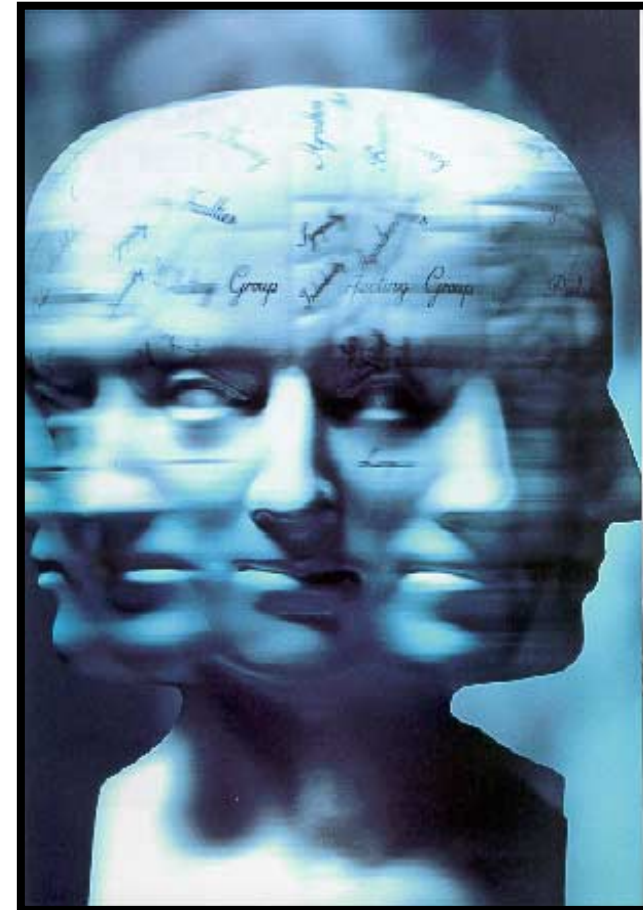


To utilize current capacity and to achieve growth, Norwegian suppliers must succeed both “at home” and internationally



Internationalization for competitive edge

- Customers first choice
 - State of the art technology
 - Local presence
 - Financial strength
 - Sustained customer satisfaction
- Employees first choice
 - Exiting work tasks
 - Development / career opportunities
 - Secure employment



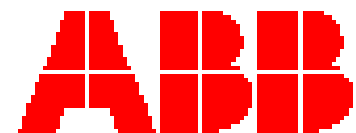
Norwegian supplier industry well positioned but loosing ground

- NS is the largest offshore province in the world
- 23% increase in foreign revenues 1997 - 1999 (SNF)
- Leading technology innovators
- World class competence
- Norwegian industry dominates the high end part of the world market

But the competition do not sleep :

- **Major technology drive in US, Brazil and UK may create an environment of protectionism and preference of domestic technology**

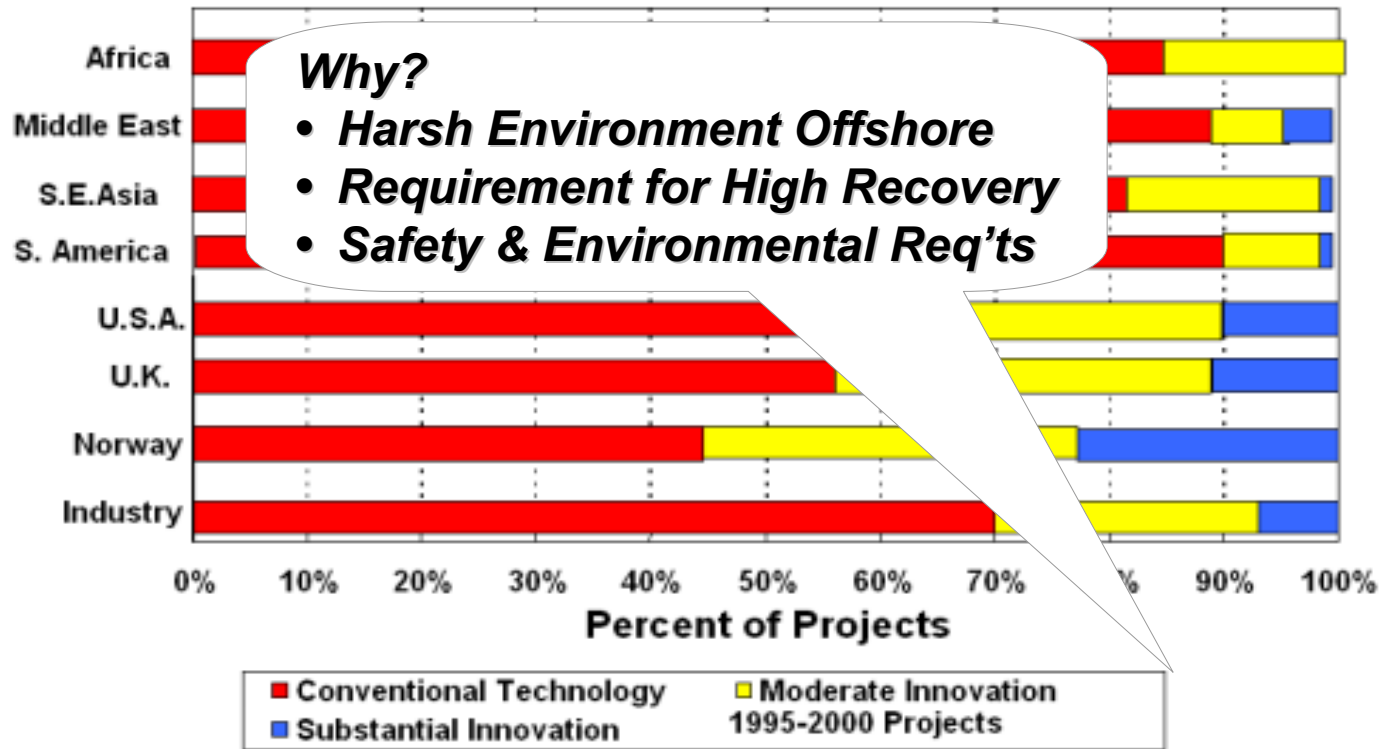
➔ **Strong pull from Norwegian Government and Operators are required!**



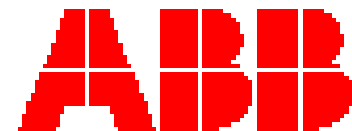
Let it be documented.....



Norway is Best-In Class in Use of New Technology for Facilities



IPA



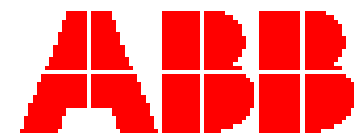
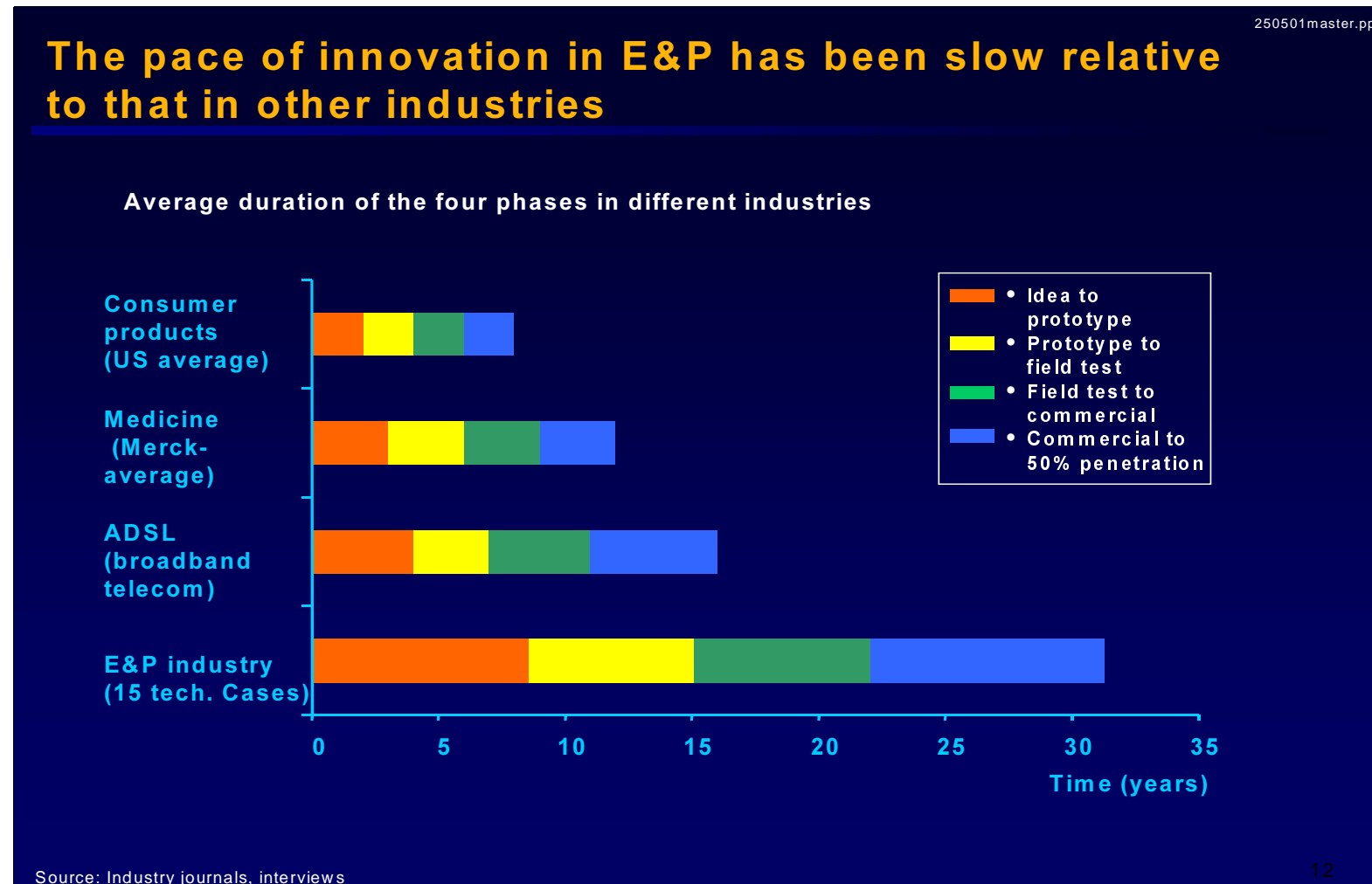
Presentation Overview

- Goals and current status
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- Conclusions

Faster and safer implementation
of new technology

ABB

We are slower than most other industries.....

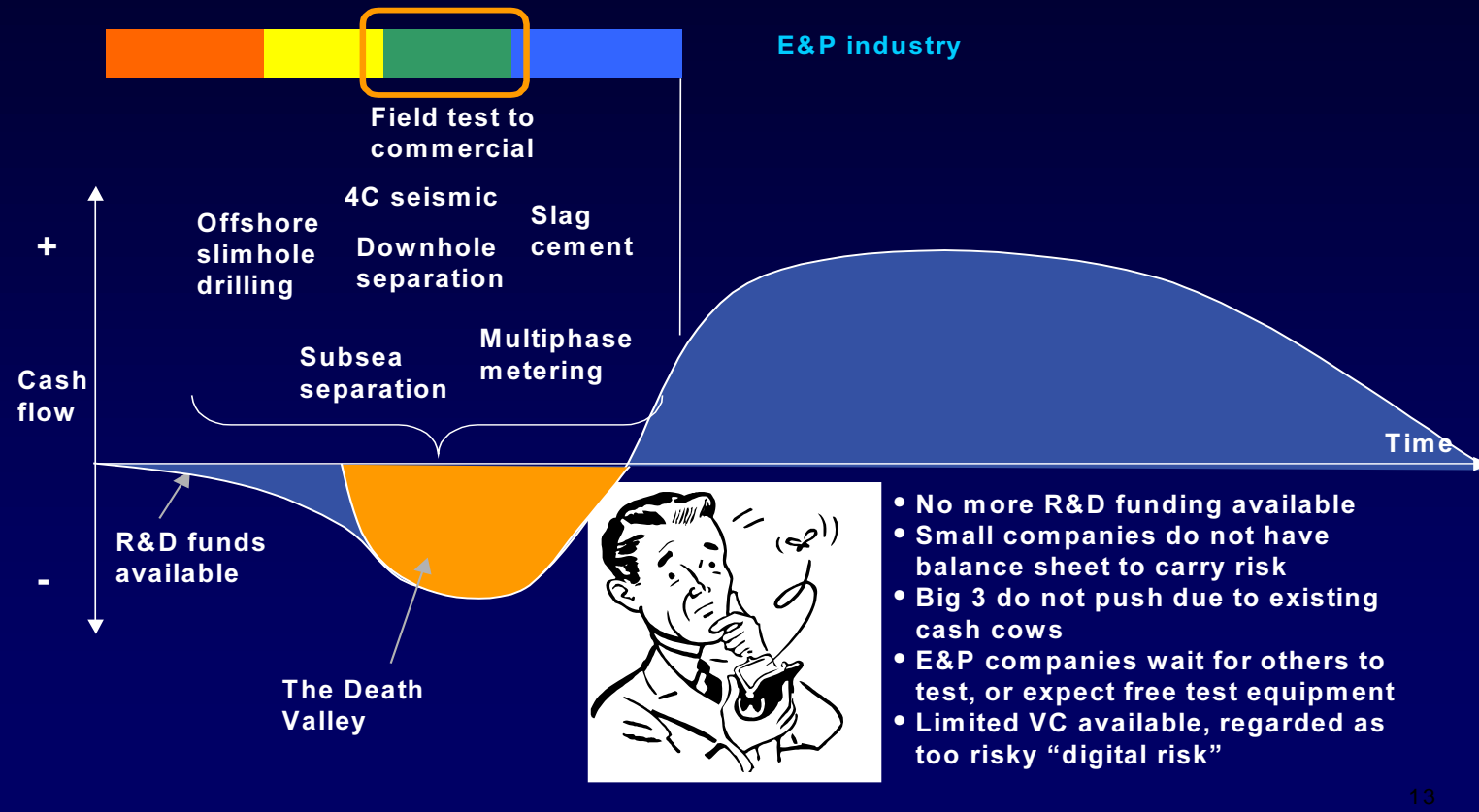


we dont run the full distance.....

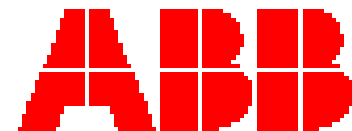
Capital intensive technologies are often stranded in a funding “Death Valley” for years



250501master.ppt

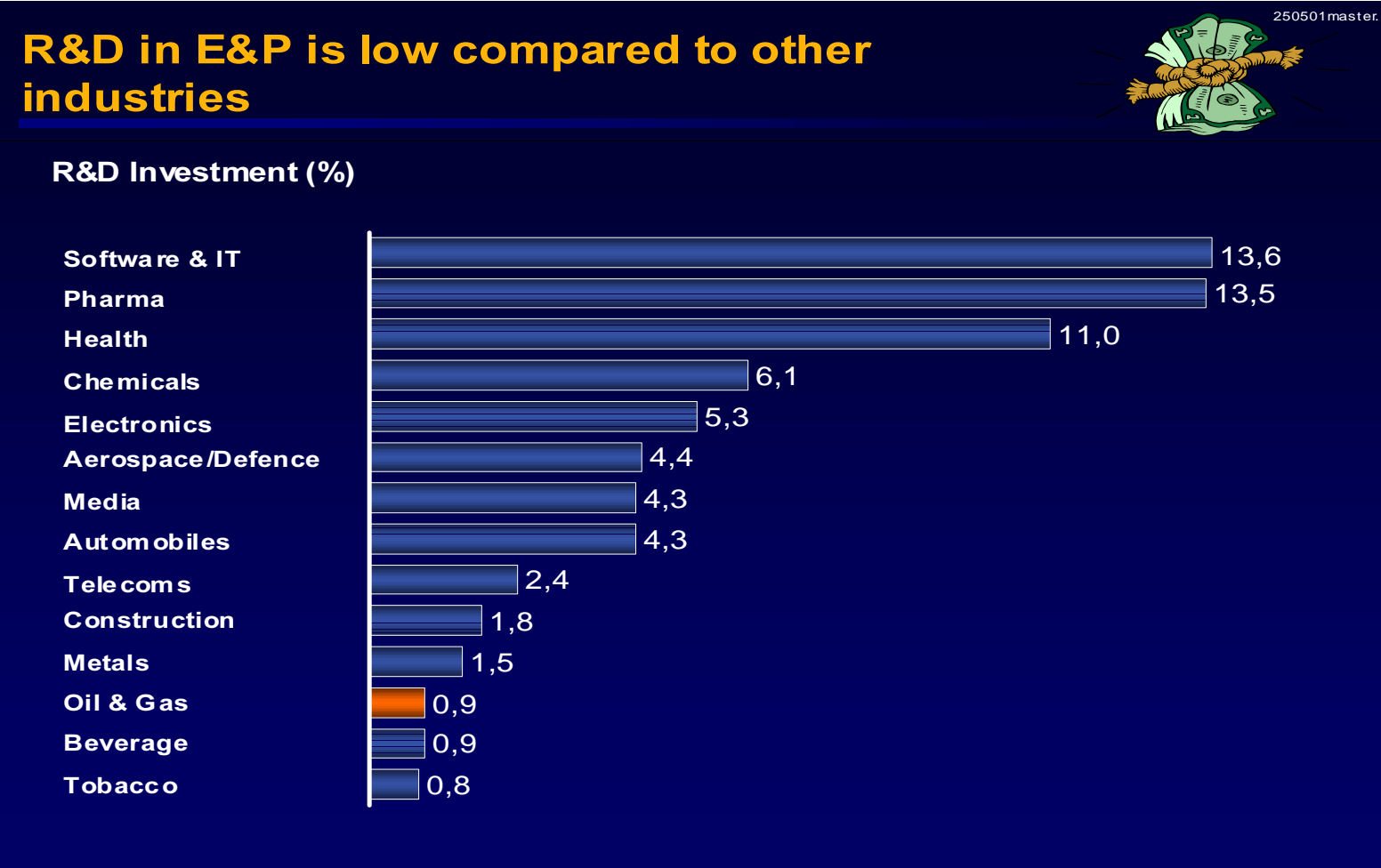


13

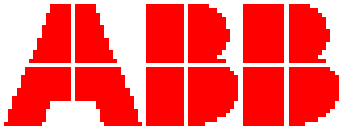


Source : KcKinsey

we do not invest enough money.....,



Source : McKinsey

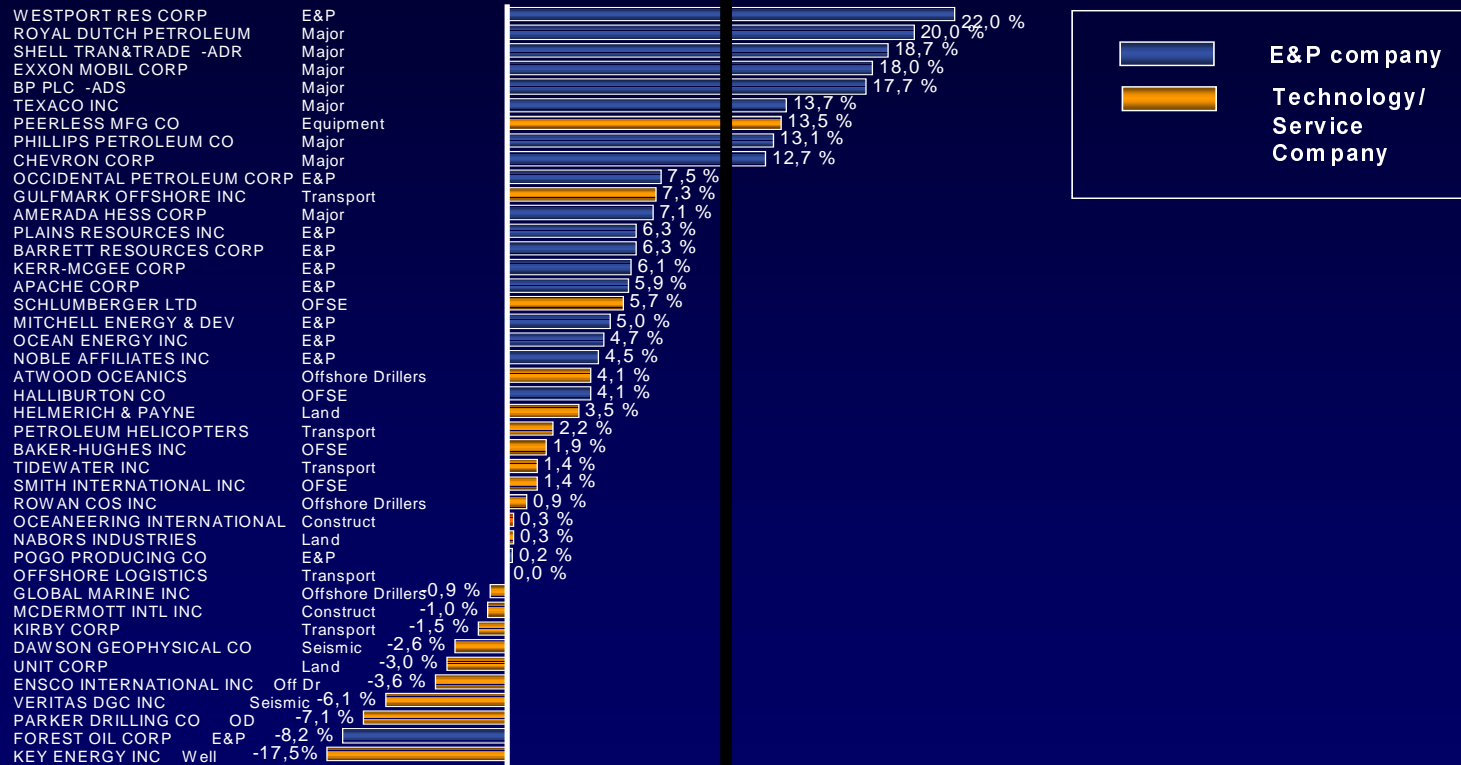


and, those who invest do not make money.

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Oil and Gas companies have created much more value than technology companies over the last 20 years

Average annual share price development 1981-2000, Percent p.a.

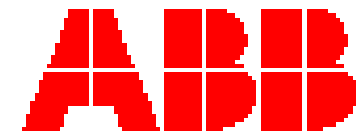


© Company name - 12

Source : McKinsey

Losers

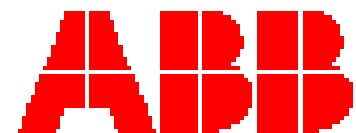
Winners



Therefore we have to

Qualify and commercialize new and advanced technology for the growth markets, fast and safe, by :

- **Joint qualification projects with operators and competitors**
- **Test technology on low risk applications**
- **Create risk/reward models related to added value**



Presentation Overview

- Goals and current status
- The challenges
- The way forward ?
- Conclusions



COLLABORATION & TRUST

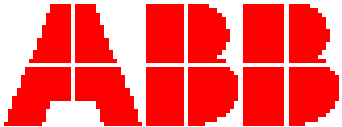


ABB
ABB

Technology to fit field characteristics

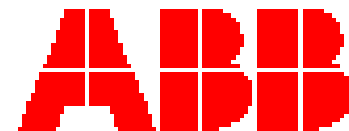
- Joint qualification programs, utilize the clusters
- Real life testing
- Low risk test sites

TYPE OF COMPANY	Reservoir/ Seismic	Offshore Drilling	Drilling Equipment	Down-hole and Well Services	Subsea	Platforms/fixed/floaters	Field Operations and Transportation	Decommissioning
Oil Companies	Seismic & Reservoir	Drilling				Platform design		
Main Contractors				Down-hole and Well Services	Subsea	E,I&T	MMO	
System Integrators								
Product Suppliers			Drilling Equipment					
Service Companies						Marine Equipment		

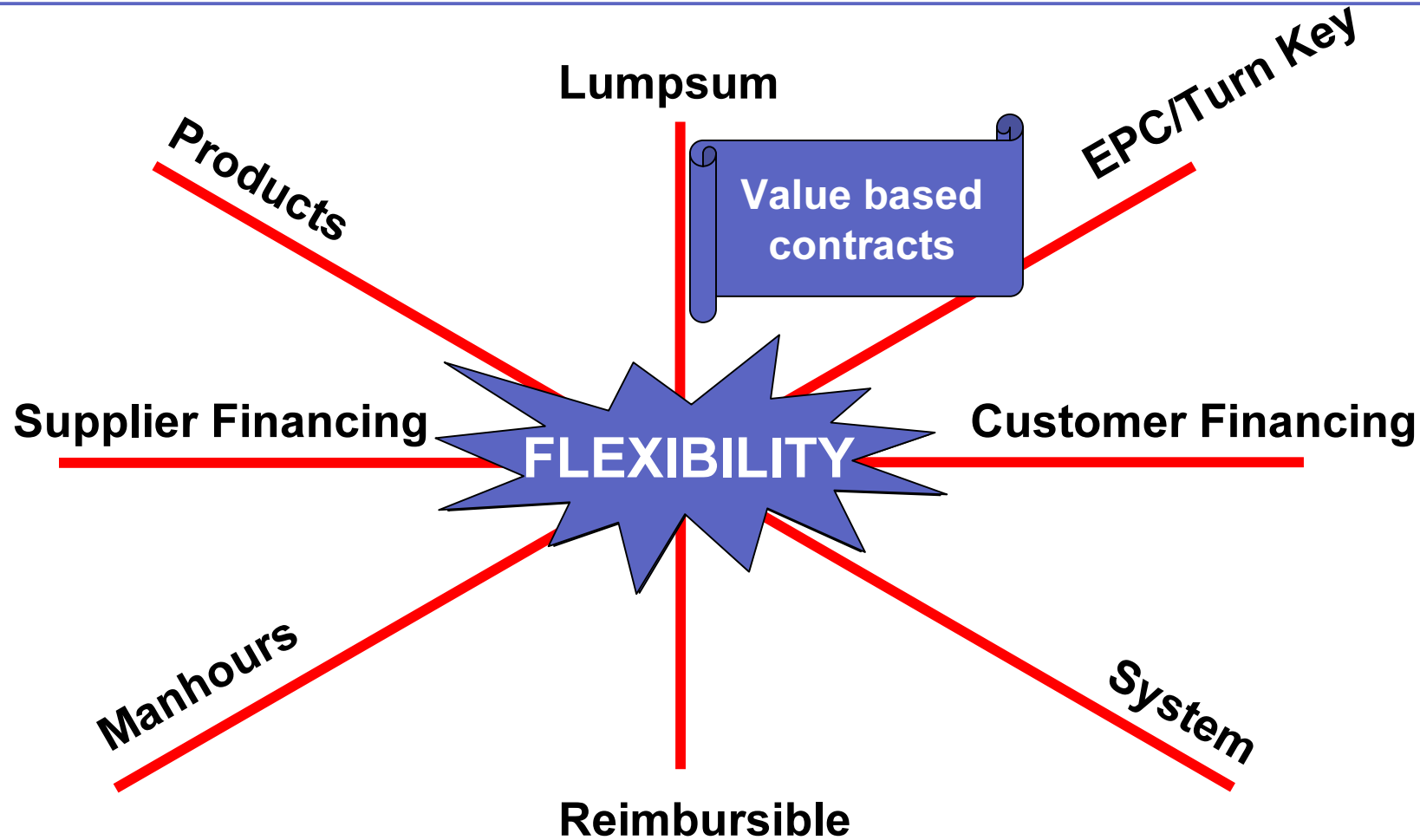
- Emerging Clusters
- Established Clusters



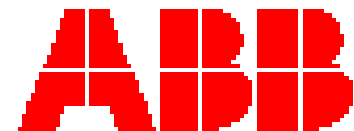
Source: Intsok



Flexible contracting strategies



Risk and reward sharing !

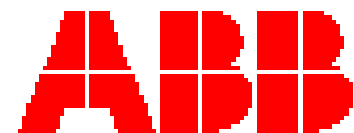
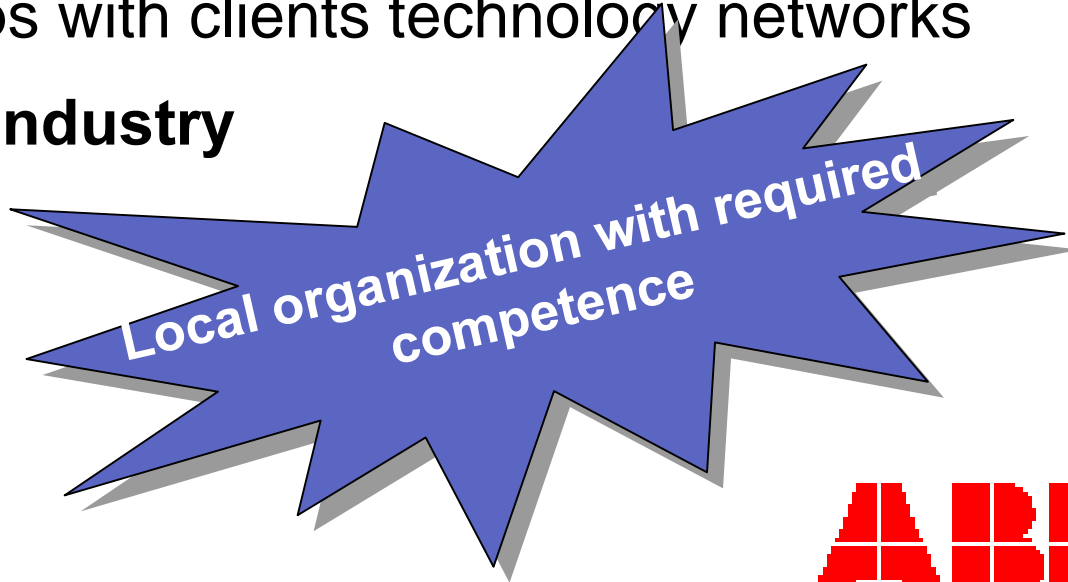


Local presence and technology content

Closeness to customer

- Front end / field development and operations
- Technology adaptation to local requirements
- Service organization locally
- Good relationships with clients technology networks

Evolution of local industry



Attract and protect the best resources

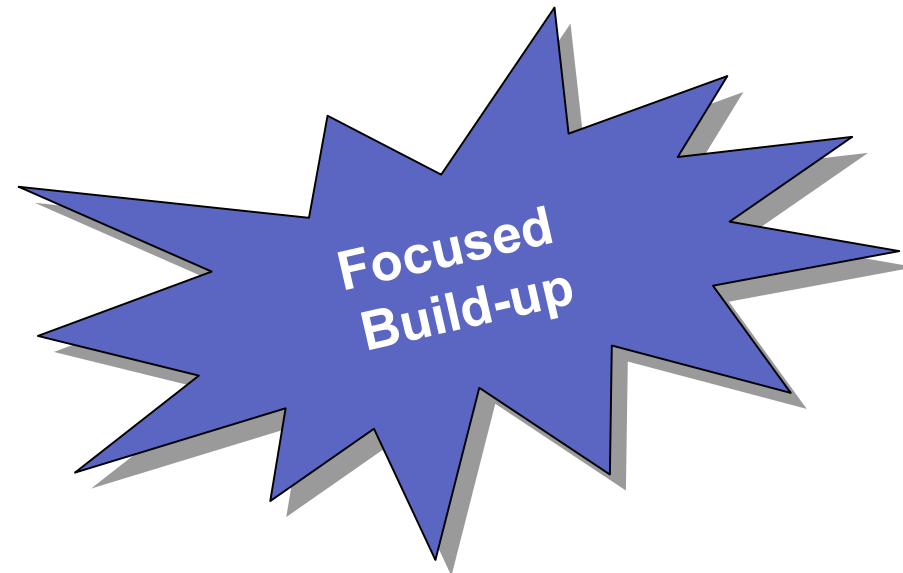
Growth constraints:

■ Human Capital

- Availability at the right location
- Capabilities

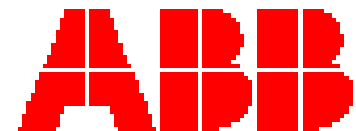
■ Financial

- Financial strength
- Project financing



Select the best partner

- The avenue to meet the overall challenges
 - Project based
 - Long term , strategic
- Very few (if any one) can do it all on their own
 - From Reservoir to consumer
 - Technology
 - Human Capital
 - Geography
 - “Paradigm” Shifts



Seafloor Processing Collaboration → Example

GOAL - Develop a new asset development option based on Seafloor Processing

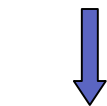
TECHNOLOGIES - Seafloor processing systems and products

PARTNERS - BP, Chevron, ABB and Kvaerner

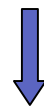


2000

Technologies
→
Applicable to Conventional Assets



2001



2003



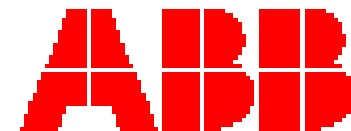
2005



2006

- Compact O/W/G Separation
- Process Control
- Facilities Reliability
- Flow Conditioning

- Oil-in Water Metering
- Process Modeling
- Solids Management
- Power Distribution

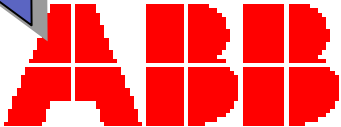


Presentation Overview

- Vision and opportunities
- The challenges
- The way forward ?
- **Conclusions**



We can make it !!!!!



ADB
ADB

Summary and Conclusions

- Internationalization is a key challenge for the Norwegian Supplier Industry, but a must for introduction of new technology in any scale
 - Sustainable Growth
 - Competitive Edge
- Norwegian Supplier Industry well positioned but loosing ground
- We must establish a business environment where also technology companies make money
- Technology must relate to Field Characteristics, Contracting Strategies, Local Presence and Content, Resources and Partnering
- From its Norwegian base, ABB has become a global technology provider
- This is possible also for the rest of the best in Norway

