

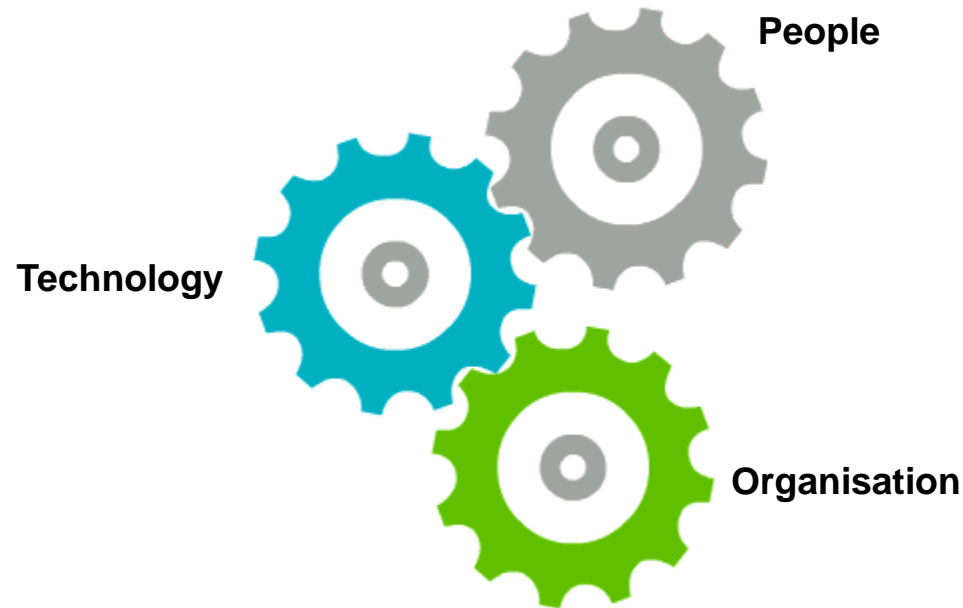
SPE 111470



# **Enablers for the Successful Implementation of Intelligent Energy**

Transforming Offshore Operations - Working with Digital Technology  
Stavanger November 29 2017

# Integrated Operations



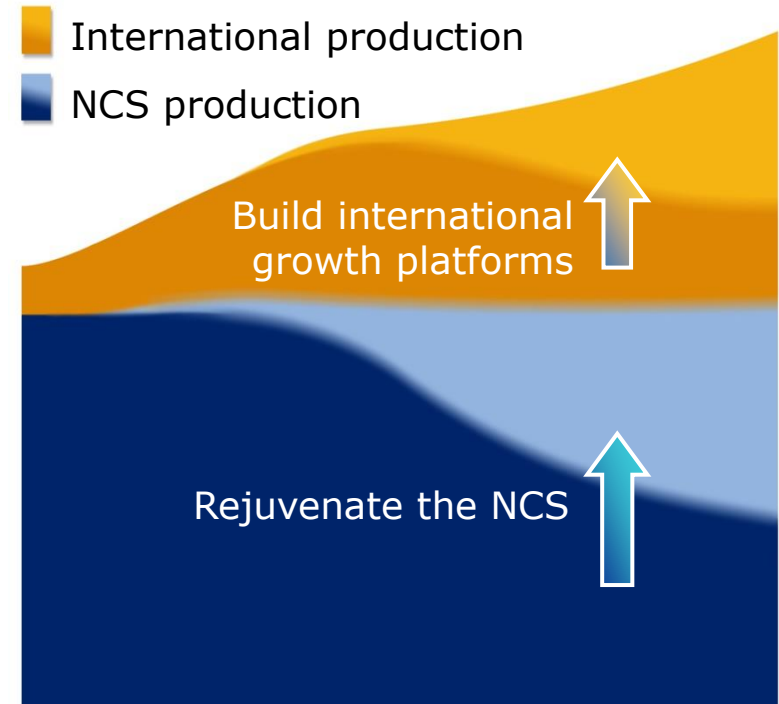
Collaboration across all boundaries !

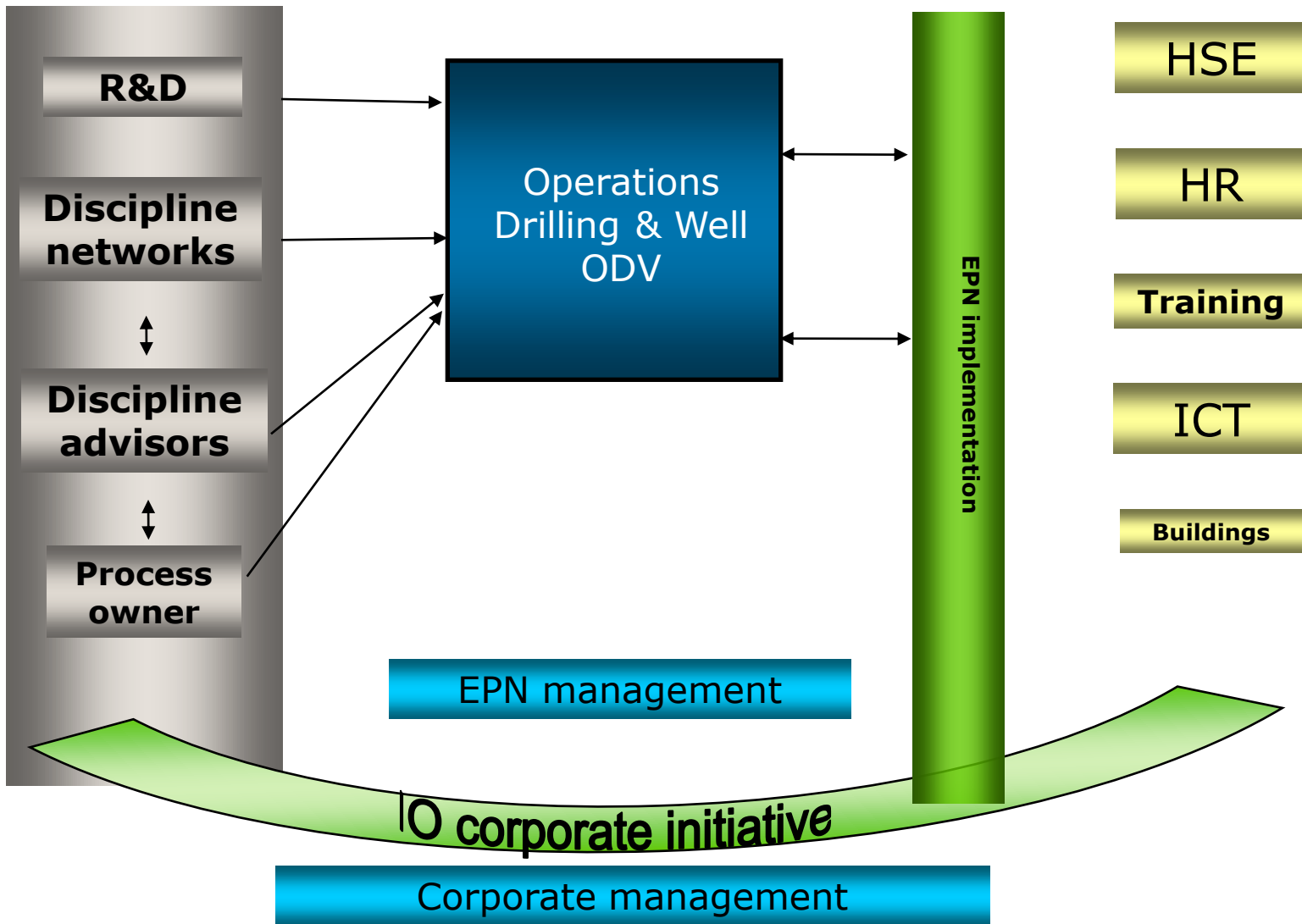
- Establishing a sense of urgency and opportunity
- Creating a guiding coalition
- Developing a vision and strategy
- Communicating the vision and the strategy
- Empowering broad-base action
- Generating short-term wins
- Consolidating gains and producing more change
- Anchoring new approaches in culture

# Sense of Opportunity

IO - extra value of 55 bn USD

StatoilHydro operates 83% on NCS





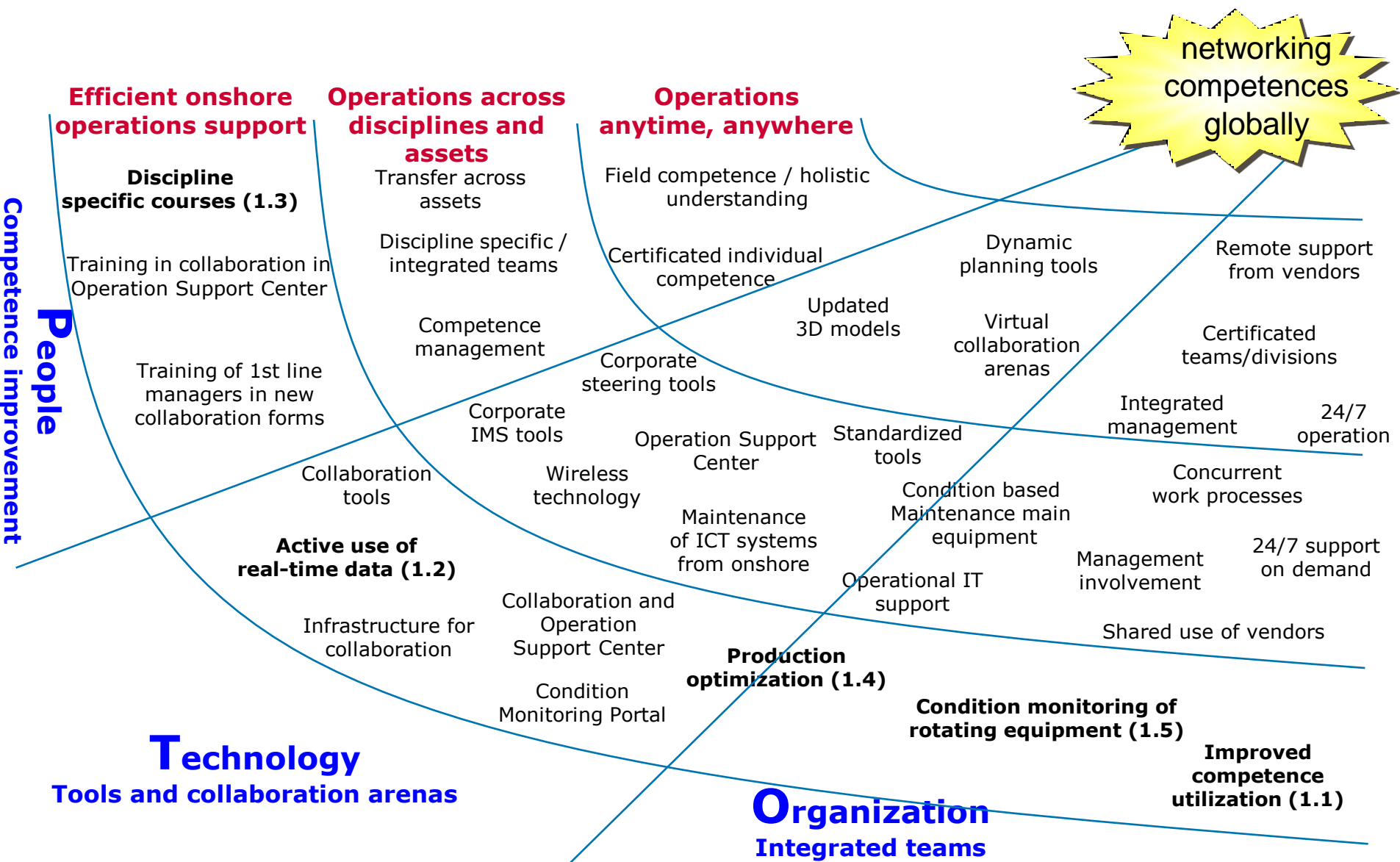
## Networking competences globally

All fields and facilities are IO compliant

Develop a global competence network leveraging IO

Remove boundaries with IO

Realize the potential from R&D projects in operations





## IO Poster



## Fact Sheets



## Movies



## IO Newsletters



## IntraWeb



## WorldWideWeb





# Some of the pilots...

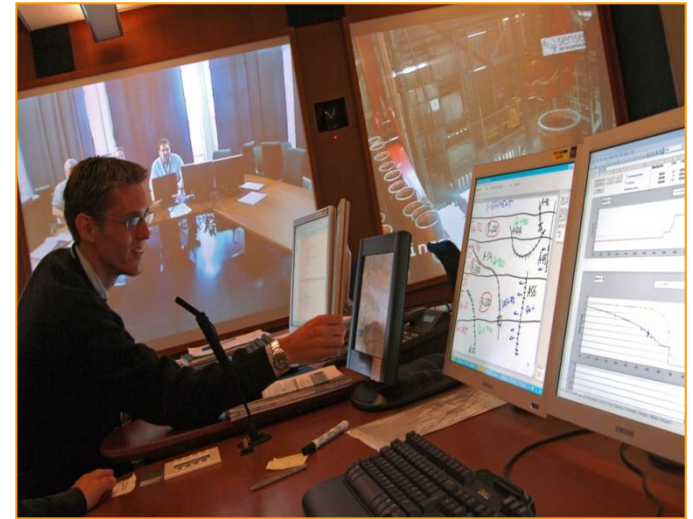
- Visund and Troll : Wired Drillpipe
- Grane: 22 wireless transmitters in the wellhead area and heat exchangers
- Snorre B: Tools for Production and Process Optimization
- Snorre B and Odfjell Drilling: Integrated drilling operation
- Drilling & Well: proNova – performance measurement of interaction people-machine
- Tampen, Bergen Base: RFID – container tracking and visualisation
- Statfjord and Gullfaks: Realtime data integration across facilities and fields
- Kollsnes: Variable Speed Drive Remote Monitoring
- EPN: Turnaround preparedness monitor
- Statfjord: Non intrusive inspection of separators on Statfjord
- Snøhvit: F&G Detector tests by use of PDA

# Heidrun field – real time optimization

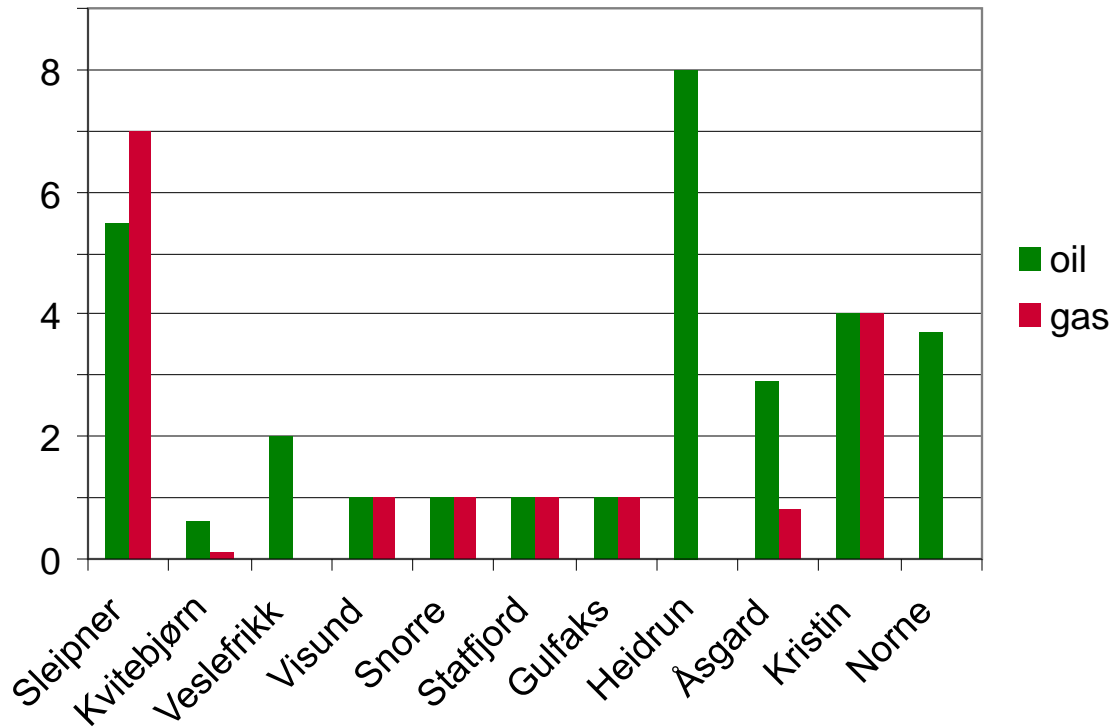
Onshore/offshore - one team

“As being in the same room”

2006: 1,9 mill bbl (6%)



# Production Increase - 2006

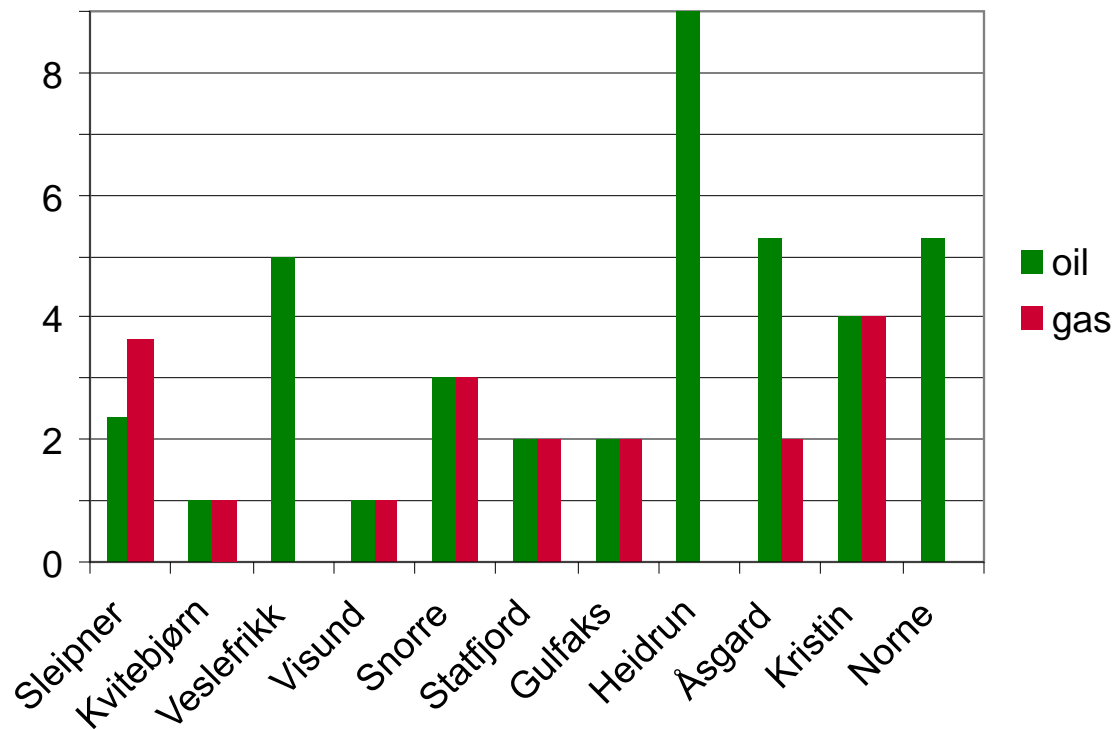


**Oil: 13,24 Mill. bbl**

**Gas: 1680 Mill. Sm³**

**1,5 Bill USD**

2007



***Oil: 13,81 Mill. bbl***

***Gas: 1129 Mill. Sm<sup>3</sup>***

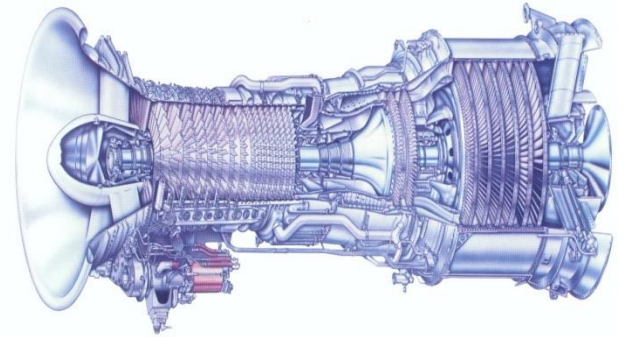
***1,35 Bill USD***

# Snorre Field – Rotating Equipment

Effective operational time: 81 to 95 %

Equipment breakdown avoided

Value creation 2005: 18 mill USD



Real time data available to everybody – everywhere

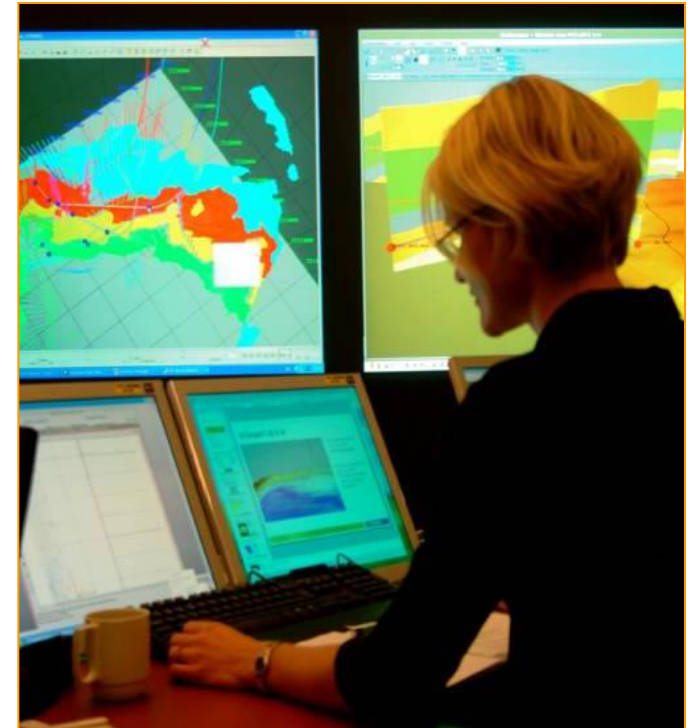
**Wide deployment of condition monitoring with onshore engineering support**

# Improved Well Placement

Increased reserves: 50 Mill USD

Reduced cost: 2 Mill USD

10% increased value

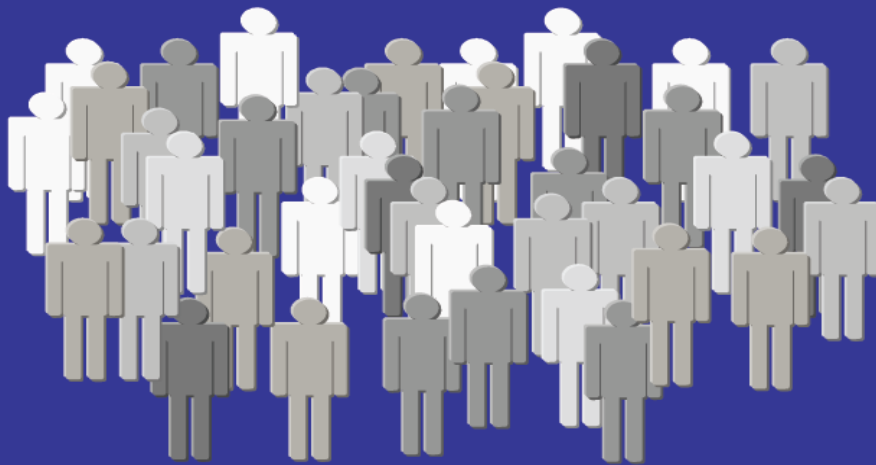


**Wide deployment of new drilling design work process**

# Brage

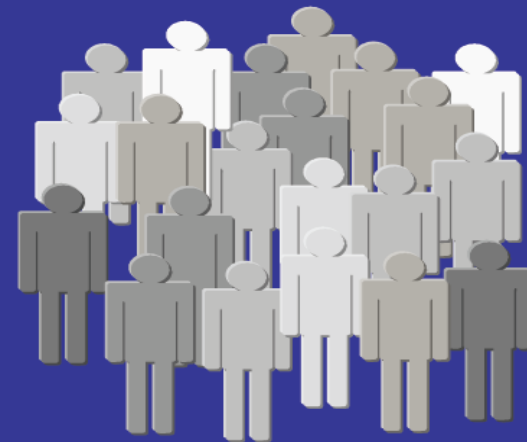
New IO work processes have changed roles, tasks and reduced offshore manning

2004



Fixed manning of 41 persons

2006



Operations Team: 21 persons  
Maint. Campaign Team: 6 persons



# Better Collaboration

Service companies - Statoil's intranet

Better use of resources

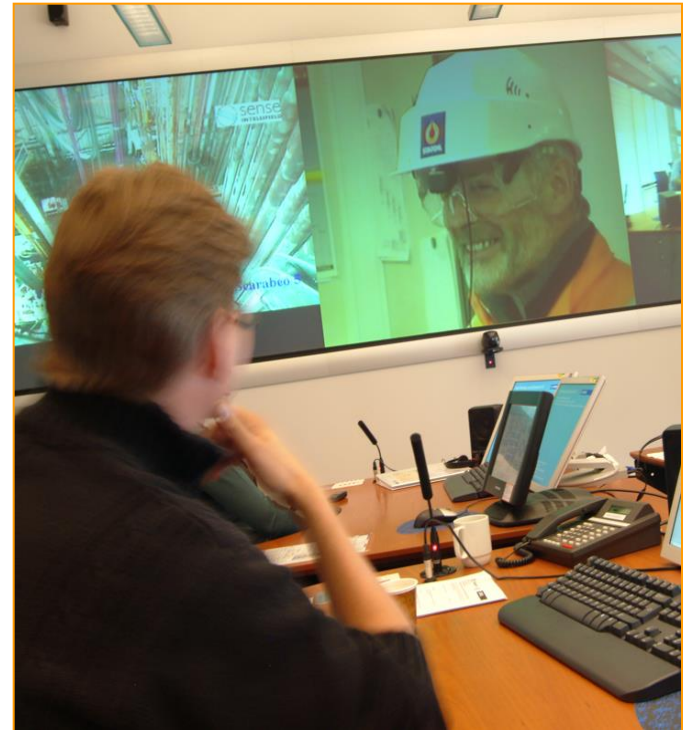
External competence becomes internal



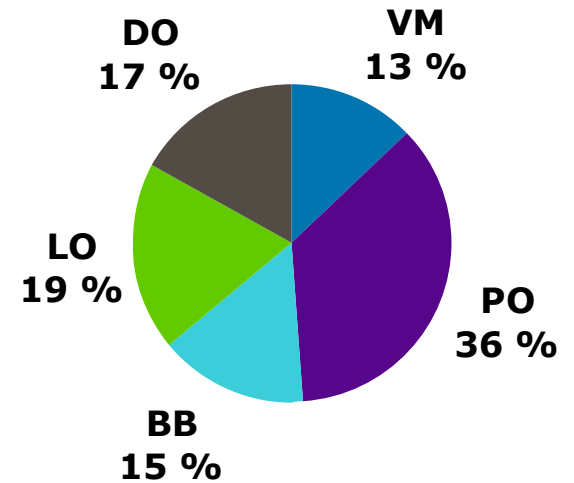
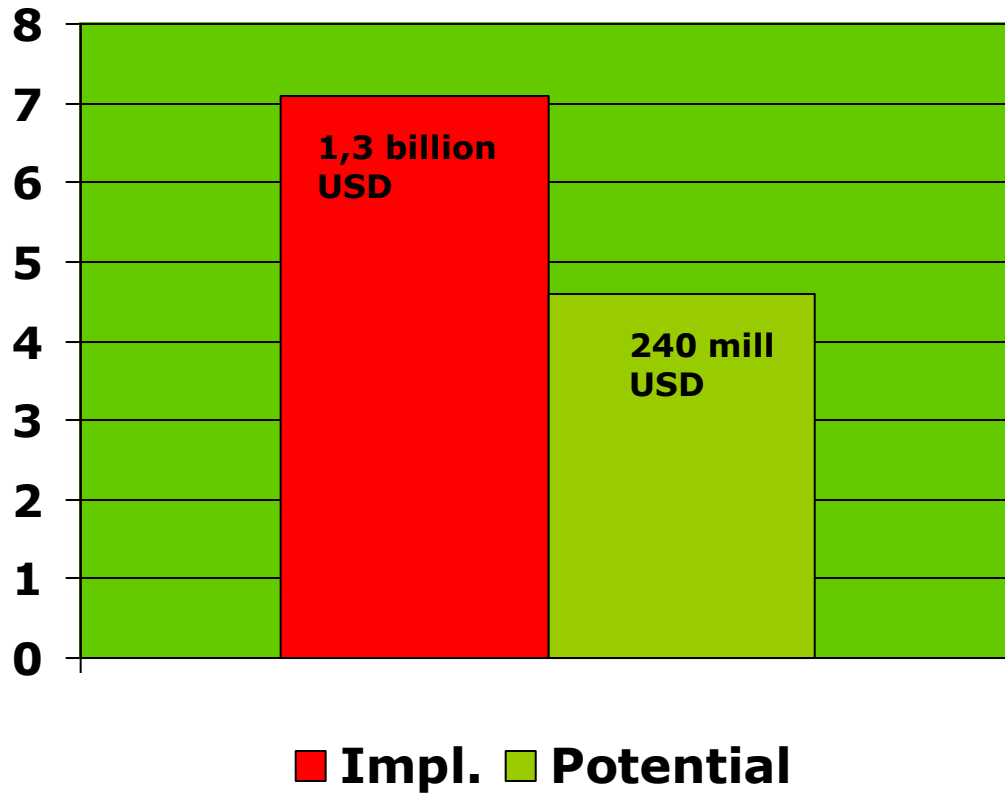
**In all collaboration rooms and operation support centers the partners are a part of the team**

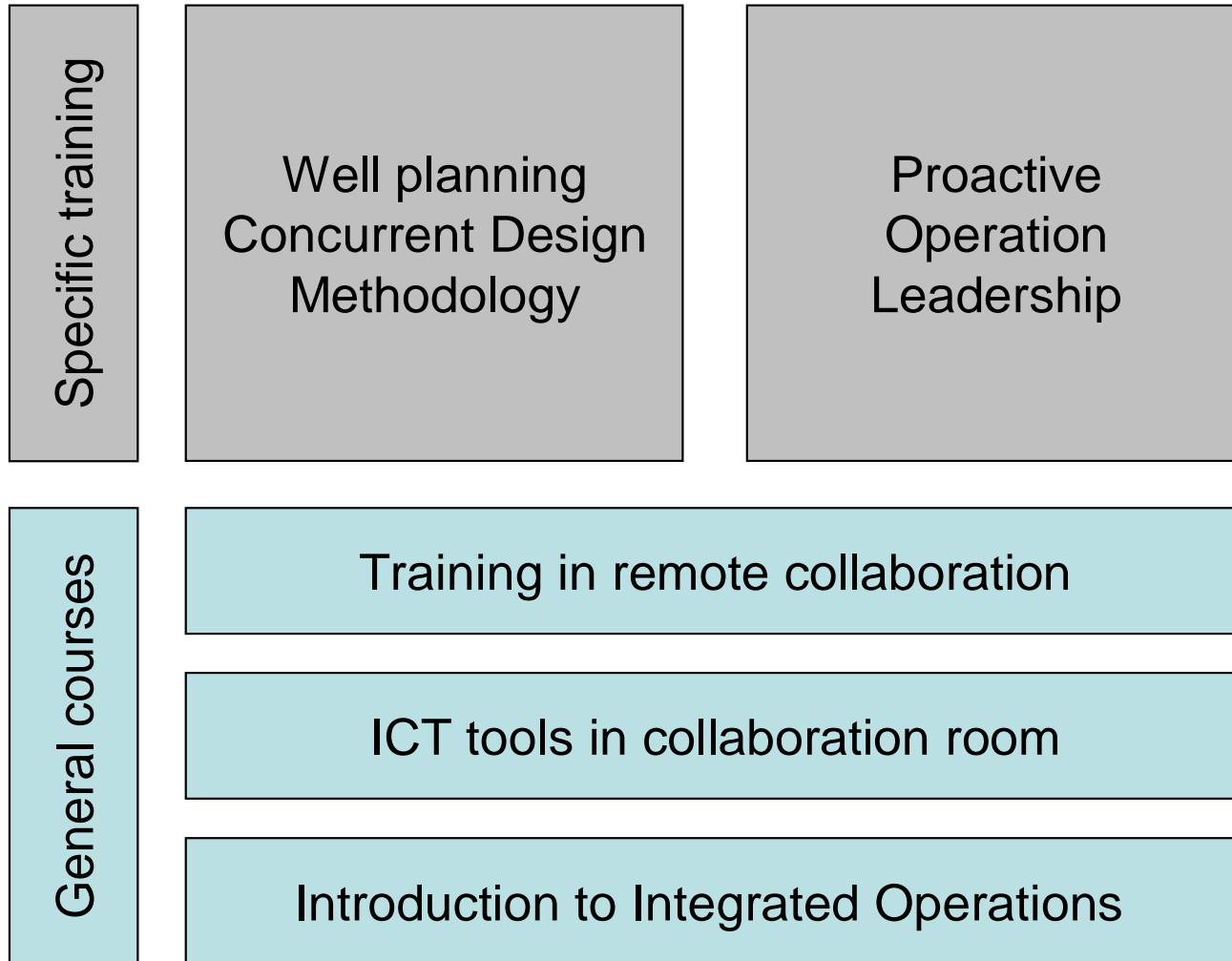
## IO Compliance on :

- Green fields
- Producing fields
- Drilling and Well
- Modifications & Maintenance
- Exploration



# IO Value Delivery (Åsgard)





- Establishing a sense of urgency and opportunity
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- Anchoring new approaches in culture
- 5th of 6, 55 billion USD opportunity
- CEO, EP VP – core team
- Networking global competence
- Newsletter, fact sheets, Intranet
- Pilots.....
- USD 1.5 bn increased production.....
- IO-compliance in all fields..
- Learning solutions, Steering documents, MIS, KPI's