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

Prof. John Kotter, Harvard Business Review
Sense of Opportunity

IO - extra value of 55 bn USD

StatoilHydro operates 83% on NCS

Build international growth platforms

Rejuvenate the 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
People

Competence improvement

Efficient onshore operations support
- Discipline specific courses (1.3)
  - Training in collaboration in Operation Support Center

Operations across disciplines and assets
- Transfer across assets
- Discipline specific / integrated teams
  - Competence management
  - Corporate steering tools
- Updated 3D models

Operations anytime, anywhere
- Field competence / holistic understanding
- Certificated individual competence
- Dynamic planning tools
- Virtual collaboration arenas

Production optimization (1.4)
- Condition monitoring of rotating equipment (1.5)
- Maintenance of ICT systems from onshore
- Operational IT support
- Condition based maintenance main equipment
- Standardized tools

Technology

Tools and collaboration arenas
- Active use of real-time data (1.2)
  - Infrastructure for collaboration
  - Wireless technology
- Corporate IMS tools
- Operation Support Center
- Condition Monitoring Portal
- Maintenance of ICT systems from onshore

Organization

Integrated teams
- Transfer across assets
- Discipline specific / integrated teams
- Competence management

Strategy into action plan

Efficient onshore operations support
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Strategy into action plan
Communicating the vision and the strategy
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

Empowering broad base action
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

Short term wins
2007

Oil: 13,81 Mill. bbl
Gas: 1129 Mill. Sm³

1,35 Bill USD

Short term wins
Snorre Field – Rotating Equipment

Effective operational time: 81 to 95 %

Equipment breakdown avoided

Value creation 2005: 18 mill USD

Wide deployment of condition monitoring with onshore engineering support

Short term wins
Improved Well Placement

Increased reserves: 50 Mill USD

Reduced cost: 2 Mill USD

10% increased value

Wide deployment of new drilling design work process

Short term wins
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

Short term wins
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

Short term wins
IO Compliance on:

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

Consolidating gains and producing more change
IO Value Delivery (Åsgard)

Consolidating gains and producing more change
Anchoring new approaches in culture

General courses

- Introduction to Integrated Operations
- ICT tools in collaboration room
- Training in remote collaboration

Specific training

- Well planning
- Concurrent Design Methodology
- Proactive Operation Leadership
• Establishing a sense of urgency and opportunity  
• Creating a guiding coalition  
• Developing a vision and strategy  
• Communicating the changed vision  
• Empowering broad-base action  
• Generating short-term wins  
• Consolidating gains and producing more change  
• 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