

Automation & Digitalization in the petroleum industry

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Automation, an ongoing evolution

- **Process control**
 - From pneumatic controllers to integrated computerized control systems
- **Pipe handling & drilling**
 - From manual operated winches to hydraulic cranes and automated well bay machineries
- **Position keeping & tracking**
 - Dynamic position used everywhere
- **Maintenance**
 - From calendar to condition based scheduling
 - Use of RFID and field terminals
- **Personel tracking**
 - Munstering
 - Helicopter check-in terminals



Automation & Control room operators

How does a control room looks like?



Automation & Control Room operators

A control room operator:

- monitors how the processes are running and make production adjustments according to plans
- responds to process and equipment alarms
- handle work permits and cooperates with field operators
- gives the initial PA announcement when general alarm is activated



IO – a step stone for digitalization



North Sea Com Fiber
 Fiber cable at Tampen area
 OLF: eDrift på norsk sokkel
 – det tredje effektiviseringspranget

1999 2001 2003



IO timeline



Reports from OLF in 2005:

- Integrated Work Processes
- Quality Information Strategy

1999 2001 2003 2005 2007

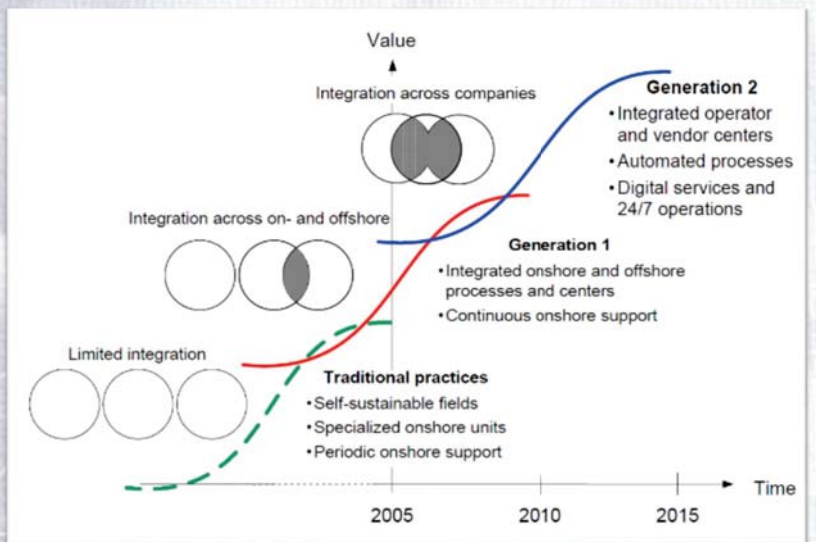


Figure from OLF: Integrated Work Processes, 2005

IO timeline

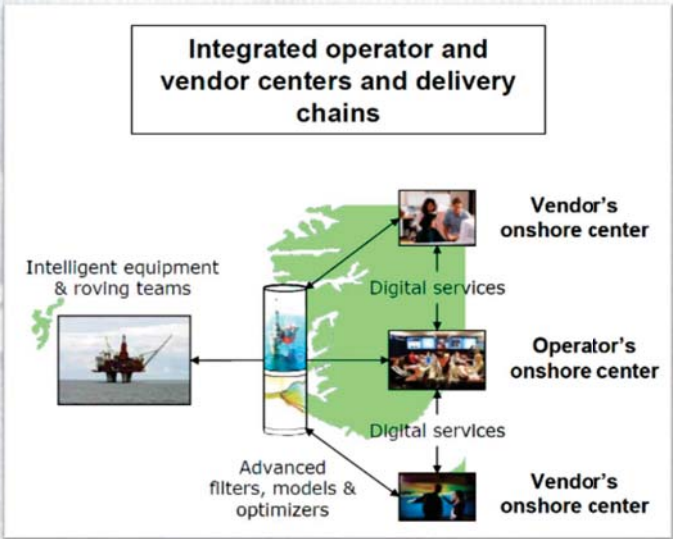
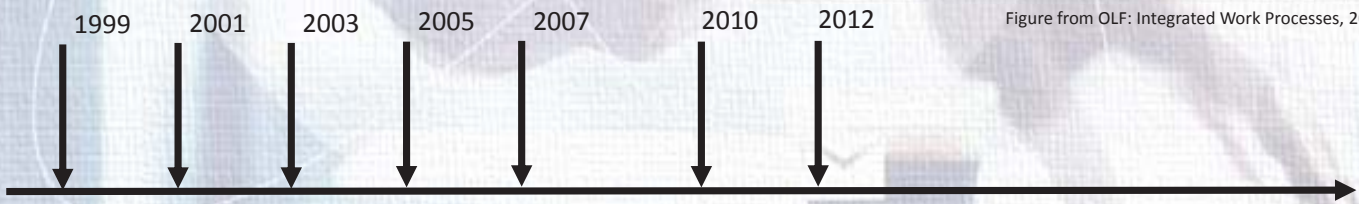


Figure from OLF: Integrated Work Processes, 2005



PSA's view on development of IO



Our mission:

Ensure that the industry players maintain high standards in HSE –
 contribute towards creating the greatest possible value for society

Is IO a part of the answer?



Photo: Statoil, <http://gemini.no/2006/09/det-grenselose-kontoret/>

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From IO to digitalisation

IO:

Same view from any location

Data to the experts instead of sending the expert to the data

Digitalization:

Design data, historical data, real time data

Is domain knowledge required for understanding the data?

Implementing digitalization?

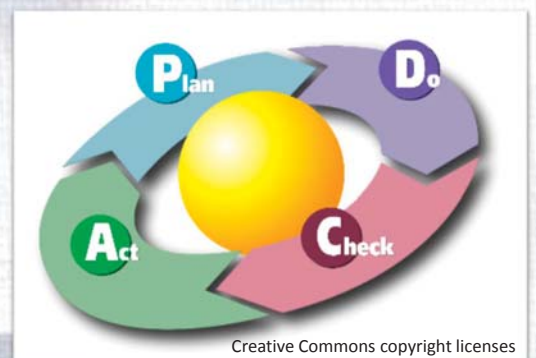
Four factors of fun:

- Innovate something

- Implement solution

- Integrate in organisation

- Improve and maintain





Digitalization in the petroleum industry

"An industry in change"



Name, title og date

An industry in change

- High rate of change in the industry
- Long experience with digital solutions, yet increased focus on implementing digital technology in the industry
- Digitization provides opportunities for efficiency, competitiveness and cost savings, however may also introduce safety risk
- A comprehensive overview of the impact of digitization on HSE risks in the petroleum industry is lacking





Digitalisering Chul Christian Aamodt 06.04.2017 Foto: enerWE

Alle satser på digitalisering, men ikke alle vet hva det betyr

Tydelige krav til effektivisering og kostnadsbesparelser i oljebransjen når det gjelder digitalisering.

DNV GL har gjort en global undersøkelse der de blant annet ser på digitalisering i olje- og gassbransjen. «Short-term agility – long-term resilience» er DNV GLs syn på om utsiktene for olje- og gassindustrien. Den gir et bilde av bransjens fremtid, basert på en spørreundersøkelse av 723 erfarne aktører globalt.

Undersøkelsen viser at digitalisering har rykket raskere frem i olje- og gassbransjen i Norge enn i resten av verden. Fem av ti aktører forventer at digitaliseringen vil øke i egen organisasjon i 2017, mot 30 prosent globalt.

- Les også: Den norske olje- og gassbransjen satser mer på digitalisering

Mange aktører i oljebransjen har altså åpnet øynene for de mulighetene som digitalisering gir. Dette er meldte nylig Norsea Group at de etablerer et nytt selskap for digitalisering.

Investor Energi

Statoil satser milliarder på digitalisering

Statoil vil bruke én til to milliarder kroner på å digitalisere selskapet. Konsernsjef Eldar Sætre er overbevist om at det blir en lønnsom investering.

Morten Ånestad © FBLG MEG
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Souanger Aftenblad

– Oljeselskapene ikke så interessert i ny teknologi

otensial på inntektssiden,

Project goal

- Provide an overview of key trends and drivers of change related to digital technology in the petroleum industry
- Evaluate how changes in digital technology may impact HSE risk
- Identify potential HSE gains
- Prepare and facilitate for follow-up through inspections and regulations
- Input to the prioritization of strategy, research and actions in the industry



Questions?

