

GB is cheaper than man-hours

... or how to save cost through efficient communication

4G OFFSHORE NETWORK FOR THE NORWEGIAN CONTINENTAL SHELF

GCE SUBSEA / NORWEGIAN INNOVATION CLUSTER BREAKFAST SEMINAR

OTC Houston May 3rd, 2016

THE DARK AGES

OIL & GAS TELECOMMUNICATIONS

1.5 Mb
VSAT Connection



- Voice
- Email
- Limited users
- Limited access



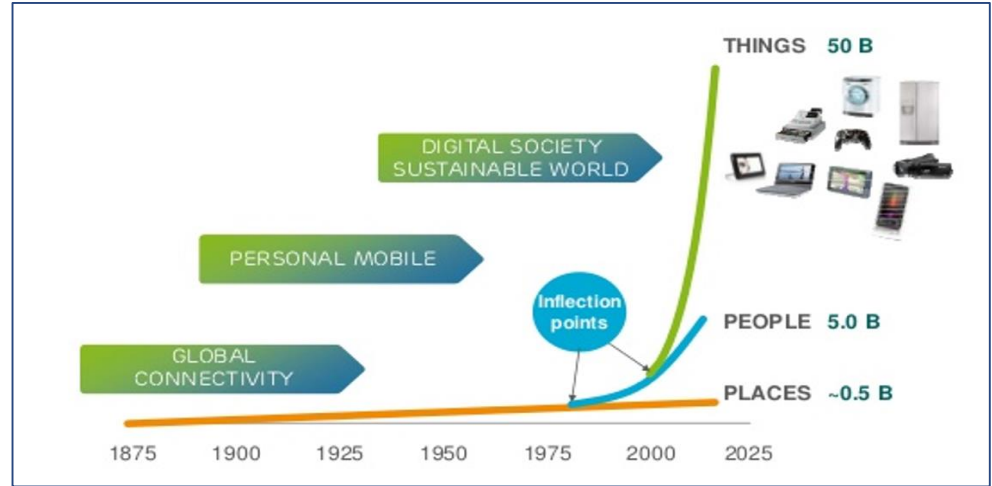
.... on an oil rig that
has 30,000 sensors,
only 1% of the data
is examined....

McKinsey and Partners,
2015

Imagine the future – we work with the leading mobile technology provider
– pioneering next generation



The future speed



The Internet of Things

Why should 4G networks be introduced offshore?

The IT budget

4G is the most standardized communication technology available

- A well define technical framework
- A common roadmap for future development
- Compatibility between networks and manufacturers

Low cost per GB

The cost per barrel produced

Connecting the oil-field operations between

- Rigs
- Unmanned platforms
- Vessels

Enabling smarter ways of working

- Remote operations

Less People on Board

Improved operation

- Increased information flow
- Big Data analytics
- Condition-based maintenance

Predictable production

- Better planning
- Right-time response
- Right competence

Less Non-Production Time

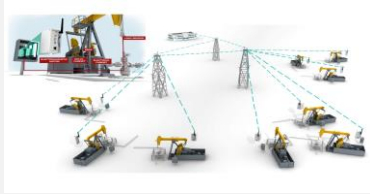
Positioning our customers in the forefront of the digital oil-field operations



Improving oil-field communication



Enabling the digital, mobile oil worker



Support remote operations through Machine-to-Machine communications – «The Internet of Things»



- Driving efficiency
- Reducing Non-production time
- Improved crew welfare

The proof of concept site – Building on experience from our first installation and Statoil deployment



Draugen oil field

- Operated by Royal Dutch Shell
- Located in the Norwegian Sea
- First offshore 4G installation – Dec. 2014
- GSM and LTE 4G



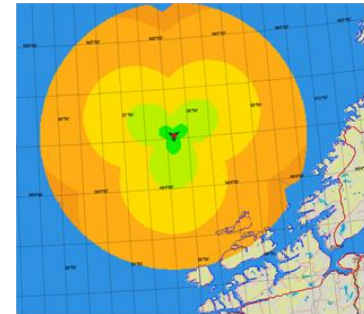
OSV - Siem Pride



OSV - Normand Vision

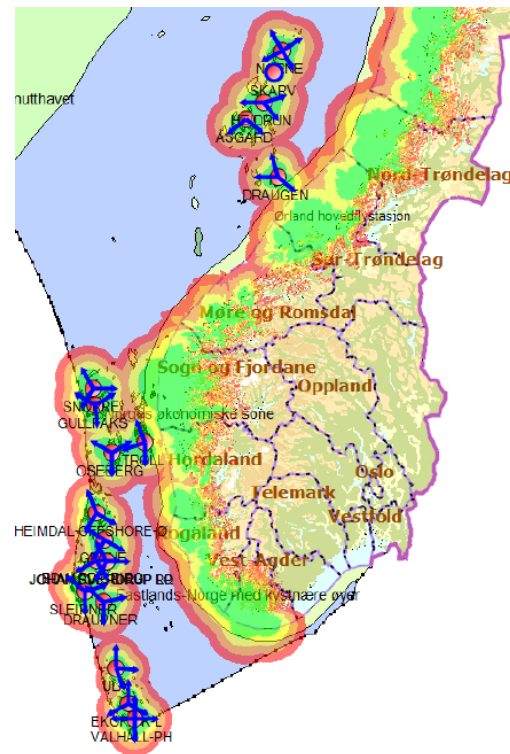


Transocean Barents – Drilling rig



18 months later we complete the deployment of the 4G network on Norwegian Continental Shelf

- Covering all Statoil operated oil fields on the NCS
 - 34 fields – 11 base stations
 - Planned expansion – 3 fields, 3 base stations
 - Global and strategic cooperation
 - 10 years contract duration
- Full coverage on additional 6 oil fields with other operators
 - Continuous expansion of coverage and capacities
- Further expansion into UK, Denmark, Holland and Belgium



The mobile industry has driven radical changes in how we work, collaborate and communicate onshore



- The offshore O&G society has been left behind
 - Hindering innovation
 - Losing productivity gain
- Telenor Maritime is the mobile operator at sea
 - Removes the “digital divide” Supports innovation
 - Enables smarter ways of working
 - Internet for All
- Improving customer experience of mobile usage
- Crew welfare is a key factor to attract the best ones