

Introduction to

The Material Management Product Portfolio

Solutions delivered in Digital Collaboration with
the Sharing Economy Program and
Norwegian Oil & Gas Association



Index

1

Introduction

2

Product Portfolio

3

Product 1: Critical Material Requirement

4

Product 2: Surplus Marketplace

5

Product 3: Virtual Inventory

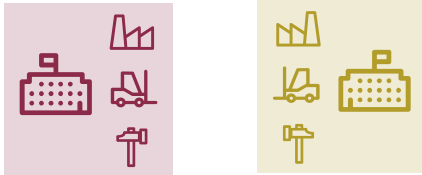
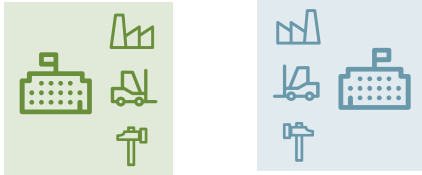
6

Going Forward

The Background for Sharing Economy

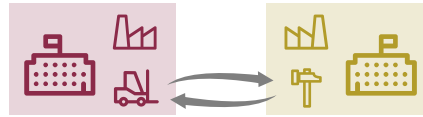
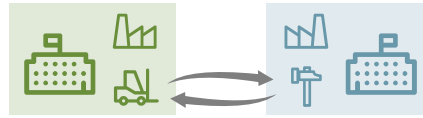
Any idle asset is a business opportunity

Conventional



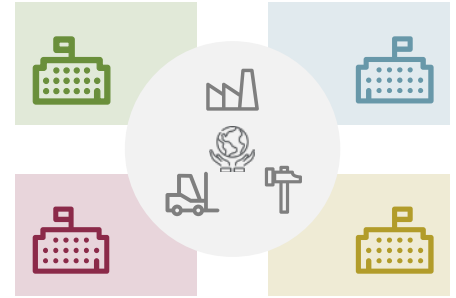
Low asset utilisation

Asset Sharing - Current



Low asset utilisation

NCS Sharing Economy



High asset utilisation



We are owners in each other's licences and will all benefit from sharing and collaboration on NCS

NCS Sharing Economy Program

Significant potential for improvements through more standardised collaboration and sharing of resources

NCS Material Management

Estimated potential of ~30% inventory reduction on NCS

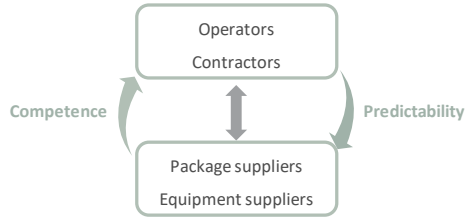


Vision

Virtual availability of equipment and capital spares across operators.

Standardised Supply Chain Behaviour

Reduce supply chain cost by >15%
Maintain sustainable margins

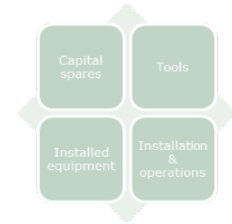


Vision

Lean integration of standardised information – integrated collaboration through all tiers in the supply chain, enabling major reduction in cost and lead time.

Subsea

Value potential estimated to over 1,8 BNOK in CAPEX reductions alone



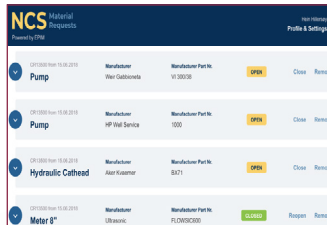
Vision

Maximise value from pool solutions and enforce standardisation of new equipment.

Value potential conservatively estimated to ~ **3 BNOK** annually, in addition to ~ **8 BNOK** in potential inventory reduction across NCS

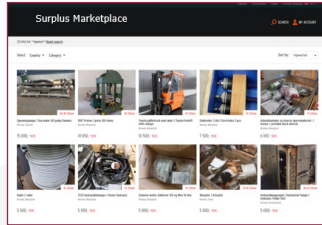
NCS Material Management

The product portfolio



1 Critical Material Requirement

- Online portal for requesting material from other Operators in critical situations.
- ✓ Avoiding production loss.
- ✓ Sharing & collaboration across Operators.



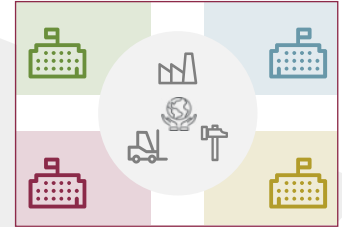
2 Surplus Handling

- Publishing material for sale on a 3rd party platform.
- ✓ Maximise surplus value through sales.
- ✓ Positive environmental impact.
- ✓ Reduce scrapping cost.

| ID | Name | Material | Attributes | Part Number | Mount Area | Stock Level | Location | Unit |
|----|------|----------|------------|-------------|------------|-------------|----------|-------|
| 1 | 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 2 | 200 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| 3 | 300 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 |
| 4 | 400 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 5 | 500 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| 6 | 600 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 7 | 700 | 7000 | 7000 | 7000 | 7000 | 7000 | 7000 | 7000 |
| 8 | 800 | 8000 | 8000 | 8000 | 8000 | 8000 | 8000 | 8000 |
| 9 | 900 | 9000 | 9000 | 9000 | 9000 | 9000 | 9000 | 9000 |
| 10 | 1000 | 10000 | 10000 | 10000 | 10000 | 10000 | 10000 | 10000 |

3 Virtual Inventory

- Virtual availability of equipment and capital spares across Operators.
- ✓ Sustainable inventory levels on the NCS.
- ✓ Increased safety through higher spare part availability.
- ✓ Reduced OPEX, annual inventory holding cost is ~15% of stock value.



Digital Collaboration

- Enable synergies among the products.
- Harvest full scale benefits.

Product 1: Critical Material Requirement

A tool for requesting critical material between operators on the Norwegian Continental Shelf

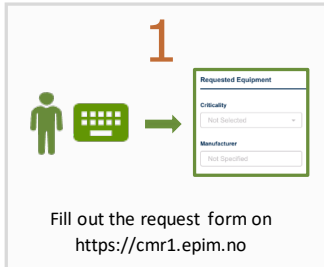
What it is

- The portal is used in situations where there is a risk of production loss due to an absence of critical material.
- The portal consists of two functionalities:
 - 1) An online web form for submitting requests.
 - 2) A case handling portal for a group of dedicated request handlers from each Operator.

Case Example

- One Operator experienced a potential production loss on one of their fields due to lack of critical materials.
- The production loss cost was estimated to 50 MNOK per day.
- Informal dialogue revealed that another Operator had suitable spare parts available. The spare parts were collected offshore and transported by helicopter to the field at risk of production loss. The issue was resolved, and millions of NOK were saved.

How it works



Product 2: A Surplus Marketplace

An online sales platform for value maximisation of surplus materials

What it is



- The Surplus Marketplace service enable Operators to get third party assistance on the whole marketing and sales process of surplus material.
- The service is provided by a professional third party sales organization with an extensive network to potential buyers.

As is

- Scrapping costs.
- Long supplier lead time.
- Full warehouses and high warehousing costs.
- Unnecessary production of new equipment.

To be

- Sales revenue.
- Decreased lead time.
- Only the equipment you need, only when you need it.
- Environmentally friendly re-use.

How it works

1



Identify surplus equipment



2



Notify Marketplace supplier about the surplus equipment



3



Supplier collects information and lists the equipment on the online marketplace



4



Receive payment from buyer

Product 3: Virtual Inventory

Enable digital collaboration within the NCS Oil and Gas value chain by making inventory accessible across Operators and shared through a Virtual Inventory to secure NCS competitiveness

What it is



A Virtual Inventory is a cloud based information storage and management service for NCS inventory. The aim is to access, visualise and buy/sell material between Operators.

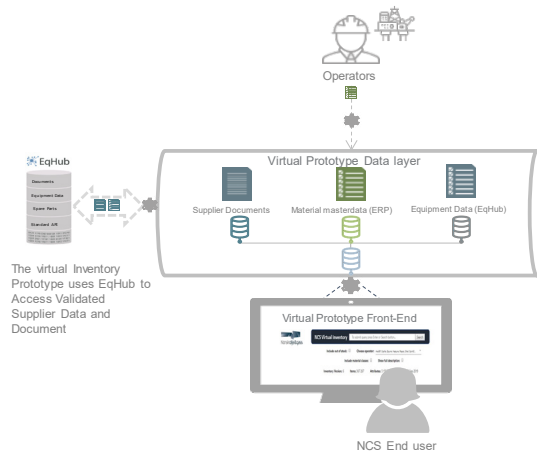


A Prototype is established to reduce operational risk and uncertainty. Proving further sharing capabilities among the NCS Operators must be tested before any further investments and/or scaling is considered.



The long-term vision is to reduce the Operators' environmental footprint through enabling re-use of material in stock and increase operational safety by enabling an understanding of verified material candidates. A virtual inventory will in addition strengthen collaboration in the NCS Ecosystem and enable synergies between services in the Norwegian Oil & Gas portfolio.

Virtual Inventory Prototype



Virtual Inventory and EqHub

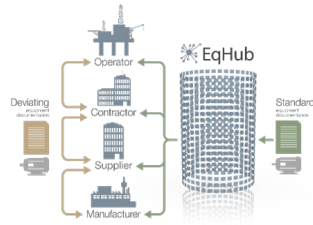
The Virtual Inventory Prototype uses EqHub to access validated supplier data and documents

What EqHub is

- EqHub gives access to pre-qualified, classified and quality assured information when needed.
- Improves quality of equipment data and documentation, and avoids non-value adding duplication.
- A delivery mechanism for standard equipment data and documentation that digitalise and simplify deliveries.
- Following common standards, the information is re-usable across Operators and vendors, for projects and operations.

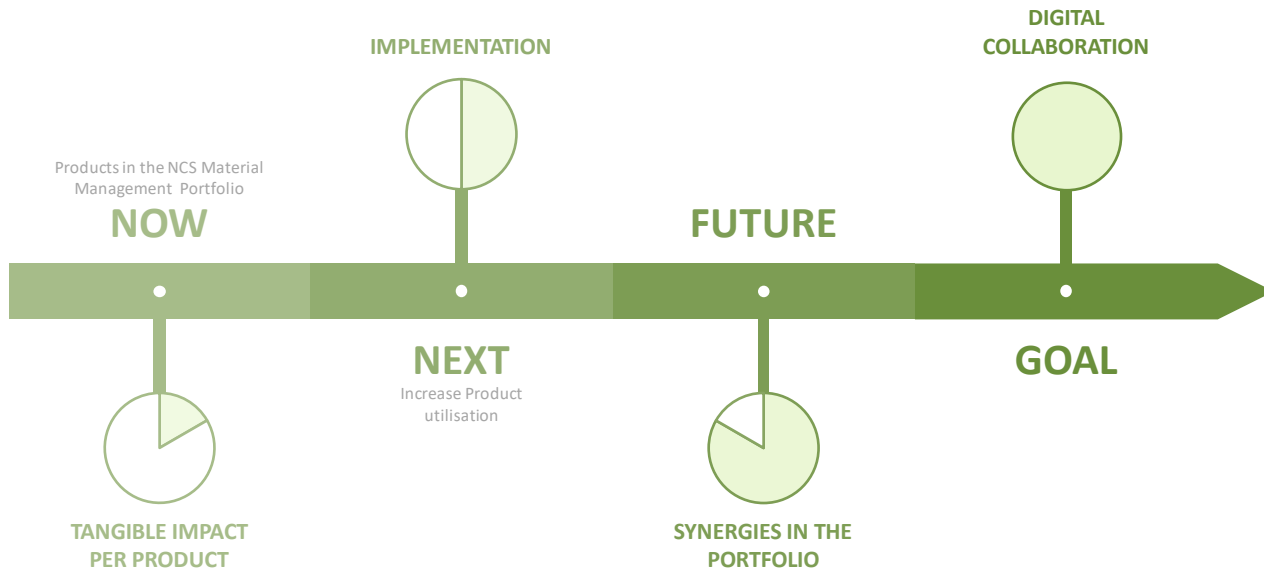
Benefits with EqHub

- Enables the manufacturers to deliver standard equipment data and documentation through a single source once, eligible for re-use.
- Reduces time spent on data and document deliveries, review and handover processes.
- Improves and secures equipment data quality for supply chain and engineering processes.
- Common industry standard verified throughout the internal product catalogue.
- Enables Operators in the Virtual Inventory to go from spare part candidate to a verified match.



The Material Management Project

Strategic direction



Want To Know More?

Contact details



Yngve Nilsen

Service Portfolio Owner
Yn@norog.no

Lars Petter Lundahl

Senior Operations Advisor
Lpl@norog.no

Henning Danielsen

Project Manager from Operators
Henning.danielsen@akerbp.com

Tore Lohne Johannesen

Sharing Economy Program Manager
Torjo@equinor.com

