Realizing the Benefits of Mobility
Enhanced productivity and reduced risk for Operators and Suppliers. A case study on present and future plans

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1. Introduction & Context (5 min)
2. Mobility Solution Overview (15 min)
3. Innovation Idea (10 min)
4. Summary of Benefits, Lessons Learned & Challenges (10 min)
5. Q&A (5 min)
What is Mobility?

• **Mobility is not** primarily about devices

• **Mobility is about the mobility of data**
  - Getting the right information
  - To the right person
  - At the right time
  - In the right amount
  - In the right format
  - On the right device

• **Mobility is also about changing the way people interact with IT**

• **Benefits**
  - Enhanced decision making due to real-time access to information
  - Improved efficiencies due to automation
  - Enhanced integration with partners and suppliers
Backbone integrates four business process areas – work management, materials management, procurement and finance – into a single end-to-end process solution that drives safe, responsible, reliable and efficient operations through a standardized and rigorous approach to how we:

1. Execute work
2. Get materials to the job
3. Pay our suppliers
4. Manage our spend

The Backbone Mobile solution is an extension of the **Work Management & Materials Management** modules from the office out to the field/warehouse.
Without Mobility

**Backbone Back-End**

- Maximo
- SAP

**Portal**

**Without mobility capabilities, manual processes are required to capture, manage, transfer and analyze data. Inefficiencies here can impact other areas such as the timely payment of invoices.**

**Work Mgmt Processes**
- Receive WO, View work details, Enter meter reading, Enter actuals & Complete WO

**Materials Mgmt Processes**
- Goods Receipt, Goods Issue, Material Transfer, Put-away, Inventory Counts

**Suppliers, Logistics Providers & EPC Contractors**

**Shipping Carriers**

**Firewall**

**Desktop**

**Office**

**Field / Warehouse**
Mobile Solution Overview

Backbone Back-End
- Maximo
- SAP

Syclo Agentry Mobile Platform

Syclo Agentry Client Backbone Mobile App

Suppliers, Logistics Providers & EPC Contractors

Shipping Carriers

Desktop

Firewall

Backbone Mobile Devices Secured by AirWatch MDM

Work Mgmt Processes
Receive WO, View work details, Enter meter readings, Enter actuals & Complete WO

Materials Mgmt Processes
Goods Receipt, Goods Issue, Material Transfers, Put-away, Inventory Counts
Current & Future State

Current Usage

- 100 warehouse technicians across 13 warehouses in Alaska North Slope
- 120 work management field technicians in several North America Gas locations

Future Deployments

- Work management technicians in GOM platforms
- Warehouse technicians in Azerbaijan region
- Potential deployment to North Sea warehouses

Continuous Improvement

- Identifying new & innovative ways to use mobility
- One initiative is a mobile solution for Pressure Safety Valve (PSV) Testing – a critical work procedure
- Potential use in other critical work procedures
Backbone Materials Management Process

- Reserve Stock
- Issue Stock
- Manifest Material
- Manage Mtl. Core/Quality
- Receive Goods/Inspection/Hold In Store
- Warehouse Management
- Return Surplus Mtl. to Stock
- Dispose/Surplus/Obsolete/Transfers

= mobile enabled process

Staging Quality Parts

= mobile enabled process
Materials Management Sample Screens
Backbone Work Management Process

WORK MGMT (MAXIMO)
Planning and Scheduling Work

Identify Work → Plan Work → Schedule Work → Execute Work → Close/Analyze Work

= mobile enabled process
**Work Management Sample Screens**

**Work Order Tracking**
Initial home screen provides visibility into loaded work order’s status, categorizes work order lists, Safety Critical and Overdue work orders found easily, locates any loaded work order.

**Work Order Lists**
Categorized work order lists provides effective management of work, detail information instantly available, scan enabled for easy selection.
Mobility is a Balancing Act

- Innovation vs control
- Needs of an increasingly consumerized workforce vs the needs of the enterprise
- How can IT make things easier for end users while also concurrently meeting the security, compliance and privacy needs of the organization?
Operator/technician tests each valve to ensure that it “relieves” satisfactorily (i.e. “POPs” at the required pressure – this is a critical safety check on all process plant.

This process is repeated 2 more times for POP 2 & POP 3
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proof of Concept – Laptops in the Office)

Opportunities
- Eliminate the usage and synchronization of multiple spreadsheets
- Reduce handling and analysis of data
- Automate entry of data into Maximo & creation of follow-up work orders
- Stop sourcing compliance data from spreadsheets

Field Tech
Start POP1 test after verifying:
- Location
- Model #
- Serial #
- Gauge #
- Expiration date

Service Provider
Complete forms
Forms compiled from multiple locations, scanned and e-mailed to BP

BP
Business logic in spreadsheets calculates pass/fail and fail category

Compliance Data Repository (GOM)
Manual data transfer

Field
Office

This process is repeated 2 more times for POP 2 & POP 3

Paper Work Orders
Procedures
Data collection forms
Data inspection forms

Work Order

Maximo
Follow-Up Work Orders
Meters & Work Log
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proof of Concept – Laptops in the Office)

Benefits / Value
- Improved efficiencies – quicker & easier effort to get data into Maximo
- Reduced compliance risks – ensures compliance data is in Maximo first.
- Reduced data integrity risks – reduce data handling issues and spreadsheet versioning challenges

Start POP1 test after verifying:
- Location
- Model #
- Serial #
- Gauge #
- Expiration date

Forms compiled from multiple locations.

This process is repeated 2 more times for POP 2 & POP 3

Business logic in Syclo calculates pass/fail and fail category

Data transferred to Maximo

If needed, WO created automatically (Real-Time)

Compliance data sourced from Maximo reports

Compliance Data Repository (GOM)

Maximo

Follow-Up Work Orders

Meters & Work Log

Work Order

Paper Work Orders
Procedures
Data collection forms
Data inspection forms

Forms compiled by hand

Deliver forms by hand

Complete forms

Office

Field Tech

Service Provider
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proposed Phase 1 Rollout– Tablet/Laptop in the Field)

Opportunities
- Eliminate compilation & distribution of paper-based work packages to field techs
- Eliminate travelling to the office to hand deliver test results
- Eliminate transfer data from paper forms to the laptop

This process is repeated 2 more times for POP 2 & POP 3

Work Order

Maximo

Follow-Up Work Orders
Meters & Work Log

Paper Work Orders
Procedures
Data collection forms
Data inspection forms

Business logic in Syclo calculates pass/fail and fail category

If needed, WO created automatically (Real-Time)
Data transferred to Maximo automatically (Real-Time)

Work Order

Start POP1 test after verifying:
- Location
- Model #
- Serial #
- Gauge #
- Expiration date

Deliver forms by hand

Complete forms

Forms compiled from multiple locations.

Field Tech

Deliver forms by hand

Complete forms

Service Provider

Manual data entry

Office

Syclo

Business Rules

Field

Office
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proposed Phase 1 Rollout– Tablet/Laptop in the Field)

Benefits / Value
- Real time data from field into Maximo – from weeks to seconds
- Eliminate need for resources to handle data
- Electronic data entry near the asset (bring valve to truck for testing)

Field Tech
Start POP1 test

In the field on a truck
Verifying data on laptop using Syclo:
- Location
- Model #
- Serial #
- Gauge #
- Expiration date
Electronically access to Work Orders on laptop

This process is repeated 2 more times for POP 2 & POP 3

Maximo
Follow-Up Work Orders
Meters & Work Log

Syclo
Business Rules

(Real-Time)
Data transferred to Maximo
If needed, WO created
automatically (Real-Time)
(Real-Time)

Field Office

Business logic in Syclo calculates pass/fail and fail category

Work Order
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proposed Phase 2 Rollout—Windows CE Class1 Div1 Handhelds)

Benefits / Value
- Class 1 Div 1 mobile device enables data entry right at the asset
- Work Management on a mobile OS – currently only on laptops
- Enables GOM to use Backbone WM Mobility solution in platforms

Field Tech
Start POP1 test
At the asset or anywhere in the field
Verifying data on handheld using Syclo:
  - Location
  - Model #
  - Serial #
  - Gauge #
  - Expiration date

Electronic access to Work Orders on handheld

Field Office
This process is repeated 2 more times for POP 2 & POP 3

Maximo
Follow-Up Work Orders
Meters & Work Log

Business logic in Syclo calculates pass/fail and fail category

Compliance Data Repository (GOM)

If needed, WO created
Data transferred to Maximo automatically

Compliance data sourced from Maximo reports

(Real-Time)
Innovation Idea
Pressure Safety Valve (PSV) Testing
(Proposed Phase 3 Rollout– Android Devices)

Benefits / Value
- Less expensive mobile devices
- Better user experience, smaller, lighter

Field Tech
Start POP1 test
At the asset or anywhere in the field
Verifying data on smartphone using Syclo:
- Location
- Model #
- Serial #
- Gauge #
- Expiration date
Electronic access to Work Orders on smartphone

This process is repeated 2 more times for POP 2 & POP 3

Field / Office

(Real-Time)

Business logic in Syclo calculates pass/fail and fail category

Compliance Data Repository (GOM)

Compliance data sourced from Maximo reports

Maximo
Follow-Up Work Orders
Meters & Work Log

Business Rules

Data transferred to Maximo automatically (Real-Time)

If needed, WO created (Real-Time)
Summary of Benefits

• Mobility directly benefits the field worker and indirectly benefits suppliers by contributing to timely payment of invoices.

• Mobility enables real-time use of data in the field.
  
  • Am I receiving the correct item?
  • What are the associated BP POs in this carrier’s shipment?
  • What work do I need to execute today?

• Manual processes have a higher risk of introducing data integrity errors. This includes the hand-off of data between people and the manual transfer of data between systems. The automation of this work reduces the risks which may also impact suppliers.

• Future capability - The use of time stamps and workflow-type mobile screens can provide data that will enhance improved metrics enabling continuous improvements in KPIs.
Lessons Learned & Challenges

1. **Capability over Functionality. Business Outcome over Technology** - Avoid trap of adopting a technology centric approach – one that puts the mobile device or the mobile app ahead of employee workflows and desired business outcomes

   - *Challenge – For IT, technology is the comfort zone. Before discussing technology, mobility SMEs must learn to speak the language of the business and must be passionate about learning the details of how tasks are actually executed out in the field. Empathize with users.*

2. **Consumerization of IT** - User experience is critical. Expectations are shifting and users increasingly expect simplicity and ease of use

   - *Challenge – Making things simple is hard work!*

3. **Innovation & Agility** - Business expects much faster delivery. Long delivery cycles seen as a roadblock to innovation.

   - *Challenge – Finding a way to be agile without risking the stability and security of the production environment.*