IOT + BLOCKCHAIN
IMPROVING WATER HAULING IN US O&G

LONDON
13 JUNE 2017
AMALTO TECHNOLOGIES
THE O2C COMPANY

- LEADER IN B2B INTEGRATION
- OPERATING FULLY MANAGED PRIVATE CLOUD PLATFORMS
- 50 N.A. CUSTOMERS IN O&G
- HOUSTON, CALGARY AND PARIS

ENTERPRISE

ERPs, legacy systems, accounting solutions, databases...

Support, monitoring and application management

Customers
Suppliers
Saas Solution Providers
Logistics Providers
Banks
Field Operations

Sales Order
Accounts Receivable
Logistics
Field Data Capture
System Integration

e-Business Cloud™
Figures not including hydraulic fracking

**10 times** more “produced water” than oil

Thousands of operators and hundreds of water haulers

Specific challenges related to **unmanned locations**
50 to 100 million truck rotations per year between the wells and the recycling sites to dispose of the produced water.
A POORLY OPTIMIZED PROCESS

Payment
Invoice
Field ticket
Truck dispatching
Service request

OK HAND, REMEMBER GREEN FLAG
KEEP PUMPING, RED FLAG
TANK IS FULL.
✓ **Truck scheduling** and dispatching not efficient
✓ Very labor intensive
✓ **High DSO** (80 to 100 days)
✓ Poor cash flow management
✓ Poor auditability
✓ Limited compliance to EPA rules
CONNECTING ALL STAKEHOLDERS AND ASSETS TO A DISTRIBUTED CLOUD PLATFORM

IoT devices on water tanks

Smart contracts in blockchain

Alert

Service Request

Field Ticket

Invoice

Payment

Field Ticket

Invoice

Producer

BANK

Water Hauler

IoT Cloud
ONDIFLO SOLUTION : FROM SR TO FTKT

Amalto e-BC with smart contracts in blockchain:
- Producer blockchain node
- Water hauler blockchain node

- SR: Service Request
- SR Ack: Service Request Acknowledgement
- FTKT: Field Ticket

1. Alert
2. SR
3. SR Ack
4. Dispatching + SR
5. Discharge
6. Driver ID + tank ID
7. FTKT

Water level
thingworx
Producer
Water Hauler
IOT PLATFORM (THINGWORX FROM PTC)
ONDIFLO SOLUTION: FROM FTKT TO PAYMENT

- Producer node
- Water hauler node
- Bank node

FTKT: Field Ticket
FTKT R: Field Ticket Response
INV: Invoice
ER: Evaluated Receipt (OK to Pay)
RA: Remittance Advice

1. FTKT
2. FTKT R
3. INV
4. ER
5. RA
6. Payment by

7. FTKT
8. FTKT R
9. INV
10. ER
11. Payment
12. RA
ALL STAKEHOLDERS SHARE A DISTRIBUTED LEDGER BUT TRANSACTIONS ARE PRIVATE- PERMISSIONED BLOCKCHAIN

Regulator

Producers

Service Providers

Banks

ONDISFLO by amalto
Collaboration between untrusting parties (disputes)

Increased transparency desired (with regulators, partners)

Synchronicity across locations/ functions/ entities (from the field to the back-office/ operations and finance/ producers and service companies)

Full auditability (at all points of history) needed

No central hub (that rules them all)

Immediate connectivity to all parties
THANK YOU
QUESTIONS?