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# Working Together for Sustainable Cost Reduction



Eric Walton

*Vice President Sales – Production Systems*

OneSubsea

Supply Chain Innovation



@oilandgasuk  
#OGConf16



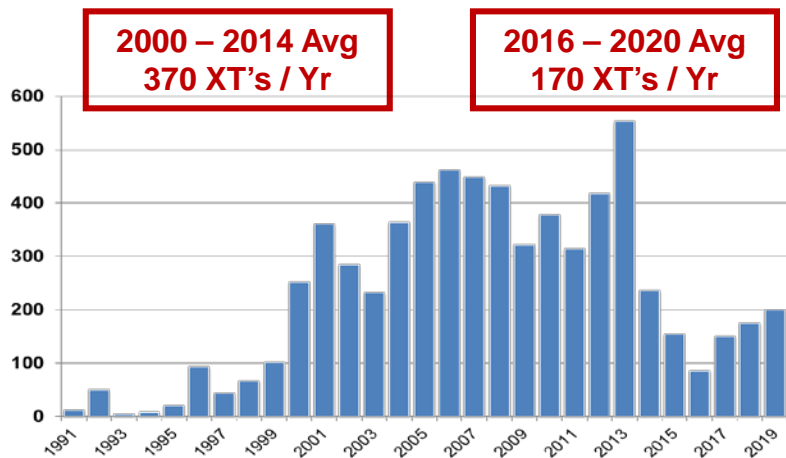
# Working together for Sustainable Cost Reduction

Eric Walton

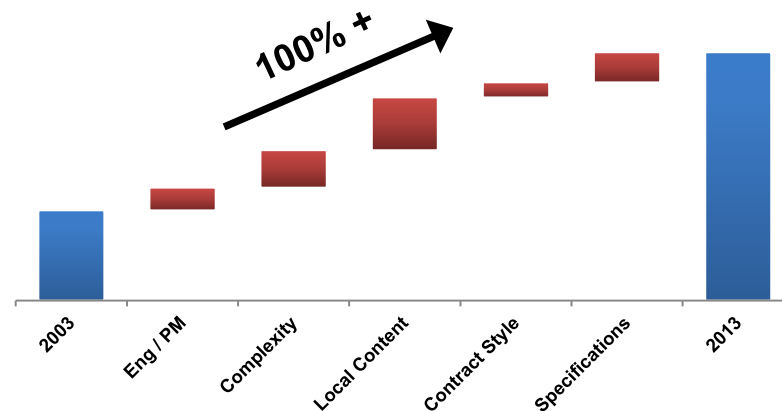
Vice President Sales, Production Systems - OneSubsea

## Key Topics

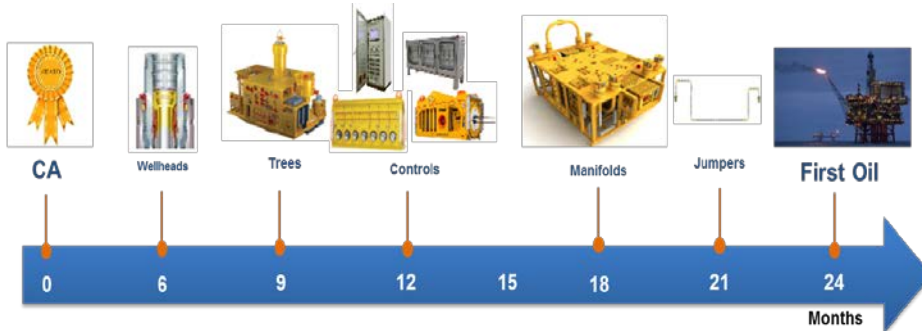
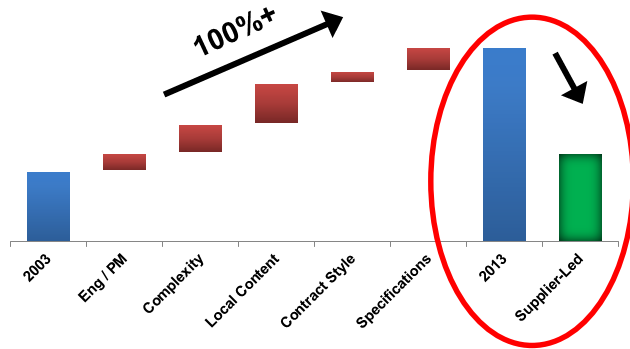
- Need For Change
- Standardization
- Boosting Technology
- Case Histories



## Cost Growth Thru 2013 (\$M per Well)



## Supplier Led Solution

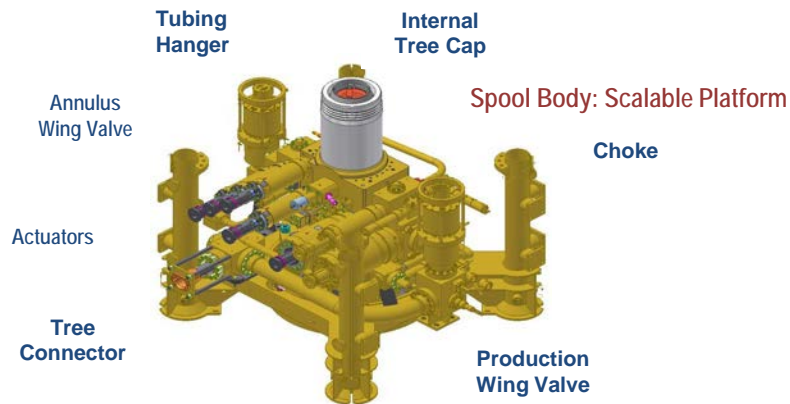


## Enablers to Supplier Led Solutions

- Portfolio of Standard Products
- Robust Quality Management System
- Configurable to create Full System Solutions
- Client Demonstrated Commitment to Change
- Client Issued Functional Requirements

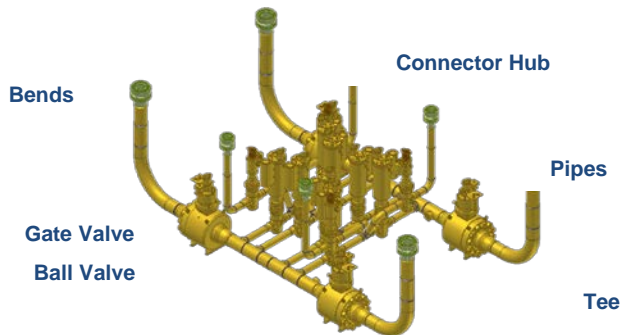
## Standard products create differential value thru:

- Safety. Repetition = lower incidents.
- Proven reliability.
- Shorter lead-times.
- Significant cost saving



- 1) Standard Material, Quality & Welding Specs
- 2) Standard designs, including FDS
- 3) Fully Qualified components
- 4) Released sub assembly BOM's
- 5) OSS approved suppliers (AV)

**“Module” Strategy = Scalable Platforms + Qualified Modules**



**“Building Block” Strategy = Qualified Modules**

Reliability of Standard Product Offering			
	Units in Service	Run-Time (Years)	MTBF (Years)
Standard XT	63	378	378
Standard SCM	126	404	202
Standard CVC	1,403	10,293	188

## Quantified Cost Savings

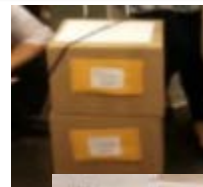
Cost Drivers	Project Specific	Client Standard	Supplier Standard
Design and Functionality	Client Defined	Client Optimized	OneSubsea Involvement
Specifications	Client Standards	Client Optimized	OneSubsea Standards
How We Work	Client Defined	Client Optimized	OneSubsea Standards
<b>Cost Saving</b>	<b>0% to 5%</b>	<b>5% to 15%</b>	<b>20% +</b>

## Standard Product Range Lead Times

Wellheads	Trees	Controls	Manifolds	Connectors
				
6 Months	9 Months	12 Months	18 Months	6 Months

## Tendering to Functional Requirements

200+ Docs to Review  
10,000+ Hours to prepare tender



30 Docs to Review  
2,850 Hours to prepare tender



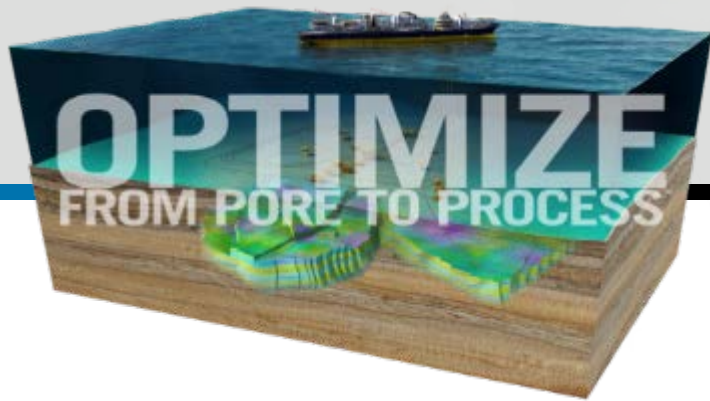
## Demonstrated Commitment to Change

“We want your standard solution that you provide off the shelf where you have incorporated learnings from operators, projects, and regions.”

“Green light to raise your hand and make changes that will benefit the greater good”



“We will be relying more and more on your systems, procedures, and people.”



## BOOSTING TECHNOLOGY

# Subsea Boosting to Increase Recovery

*More than 25 years of project experience.....*

 SHELL STONES	 TOTAL MOHO	 EXXONMOBIL	 TOTAL GIRRI Expected to Increase Recovery by 42 MMBO	 STATOIL Expected to Increase Recovery by 22 MMBOE	 CHEVRON JSM Expected to Increase Recovery by 50-150 MMBO
 SHELL DRAUGEN	 TOTAL CLOV	 PETROBRAS Production increase of 40%, 14000 to 20000 bpd	 PETROBRAS Production enabler	 REPSOL MONTANAZO	 CNR LYELL Production increase from 600 to 2400 BPD
 TOTAL PAZFLOR	 MURPHY AZURITE Production increase 30%	 WOODSIDE VINCENT Increased recovery from 49 to 55%	 STATOIL TORDIS	 OILEXCO BRENDA	 CNR LYELL Production increase from 600 to 2400 BPD
 CNR COLUMBA E	 SANTOS EXETER & MUT.	 HESS CEIBA FFD	 HESS CEIBA C3/C4 Estimated Increase in Recovery 27 MBO	 EXXONMOBIL TOPACIO Production enabler	 STATOIL LUFENG

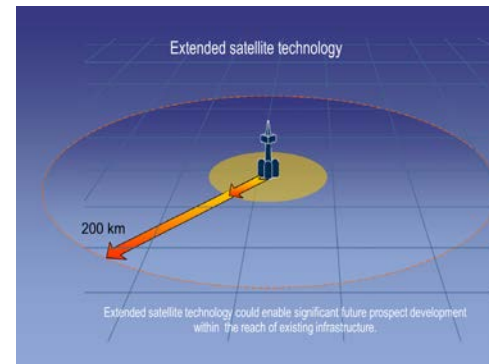
Impact on Recovery - From enabling to 30 – 100% increase

Technology That Has A Global Track Record

- Projects > 30 (85 systems)
- Supplied all multiphase systems in operation

Proven Technology

- Cumulative operating time > 200 yrs
- Pump system reliability MTTF > 10 yrs
- Operating range Gas/Liq ratios 0 – 100%
- Light well intervention access



***Pump capabilities now 200bar, enabling 200km tiebacks***



3 types of application of the technology in the UKCS at the current time:



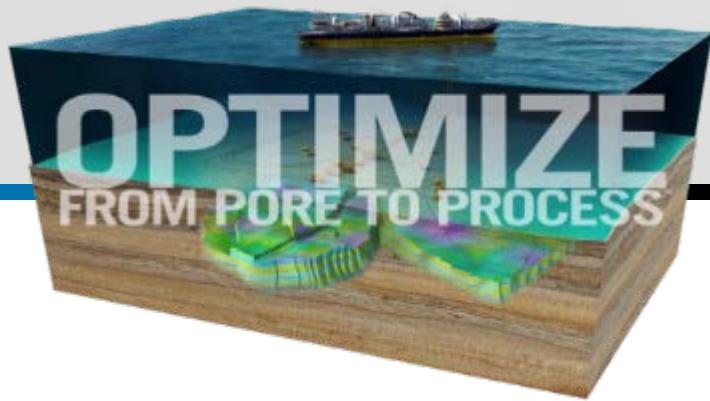
- **Incremental Production Increase** – through either increased recovery or extended production plateau from existing Brownfield assets, with real potential to defer abandonment or alternatively recover more oil prior to planned/committed abandonment.



- **Improved Water Injection Efficiency** – injecting water at source to maintain efficient reservoir pressure as an alternative to existing, aged and underperforming platform injection systems, or even create a new water injection system through the conversion of an existing production well.

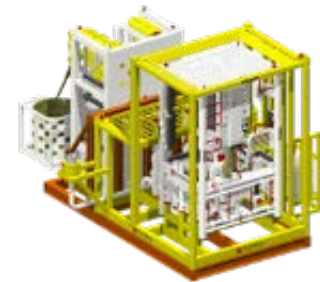
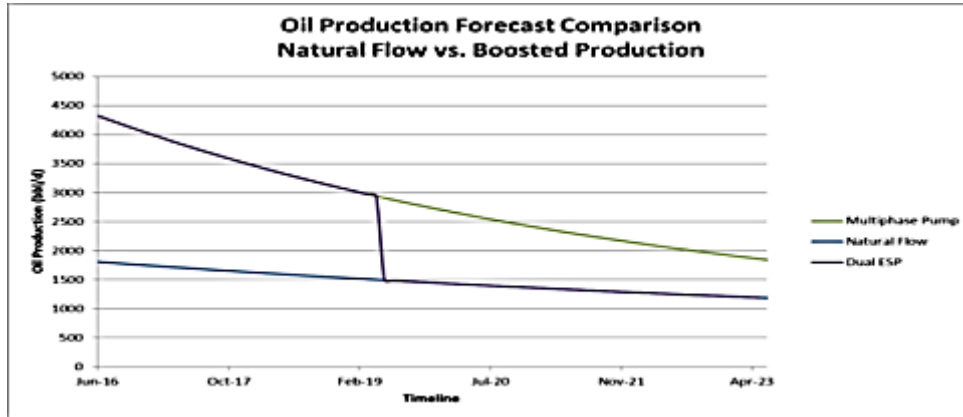


- **Production Clusters / Hubs** – enable stranded or marginal reservoirs to be clustered together and boosted back to existing infrastructure for either single or multiple operators by using boosting technology to form a centralised hub.



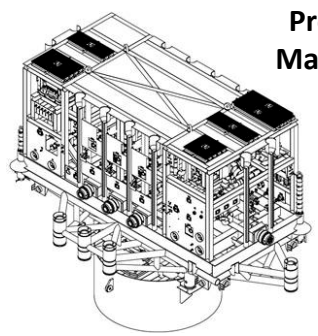
## CURRENT ENGAGEMENTS

- Asset in its latter stages of field life
- Asset is not producing at optimum Levels
- Impacting Revenue streams
- MPP will Increase recovery by 30%
- Defers Abandonment by 7 years
- Funded from additional production revenue
- Alternative commercials
- Additional net improvement NPV of \$44 Million (based on \$50bb)

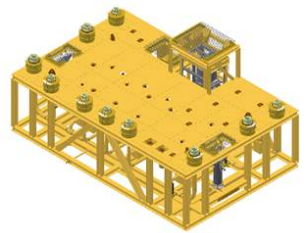


SINGLE WELL BOOSTER PUMP

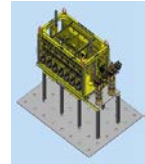
# Client Repeat vs Supplier Led Solution – West Africa



**Project  
Manifold**



**SLS  
Manifold**



**SLS  
SDU/UTA**

**CAPEX SAVING = 18%**

**104 tons lighter  
lower installed cost**

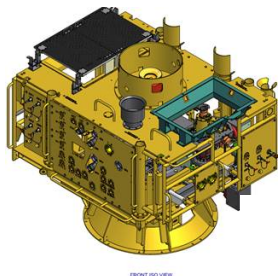


**Project  
Multi-bore  
Connector**



**SLS  
Connector  
+ Flying Leads**

**Significant Installation  
advantages**



**Project  
Vertical  
Tree**



**Project  
PGB**



**SLS  
Horizontal Tree**

**32 tons lighter  
Simplified Installation**

## Challenges

- Project uneconomic at today's oil price

## Mandate/Scope of Work

- Defined engagement
- Reduce cost and drive project economics
- *Both teams were well-aligned on the urgency...*

## Results

- VMXT went to a previous HXT design
- Manifolds Simplified
- Connections System – 3rd Party to SLS
- Tooling use from previous projects
- Sparing Philosophy aligned to use previous projects
- Testing aligned to use of previous designs



CAPEX SAVING = 25% +

- Demonstrated Cost savings can be achieved in Subsea Projects
- Success dependent on collaborative behaviour
- Suppliers have to perform to earn Operator trust
- Discipline needed as commodity prices increase

**THANK YOU**