

## Maximising value from the UKCS well stock through industry collaboration

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Co-Chair, Reservoir & Wells Optimisation Task Group

# Agenda

- 1 Reservoir & Wells Task Group – Objectives & Interfaces
- 2 The value of benchmarking
- 3 A collaborative, cross discipline approach to raising reservoir potential and optimizing production
  - Understanding
  - Selection
  - Application
  - Case Studies
- 4 Industry call to action

# Reservoir & Wells Optimisation

Reservoir &  
Wells  
Optimisation  
Task Group

Data insights

Understand challenges

Identify opportunities

Cross industry-cross  
discipline collaboration



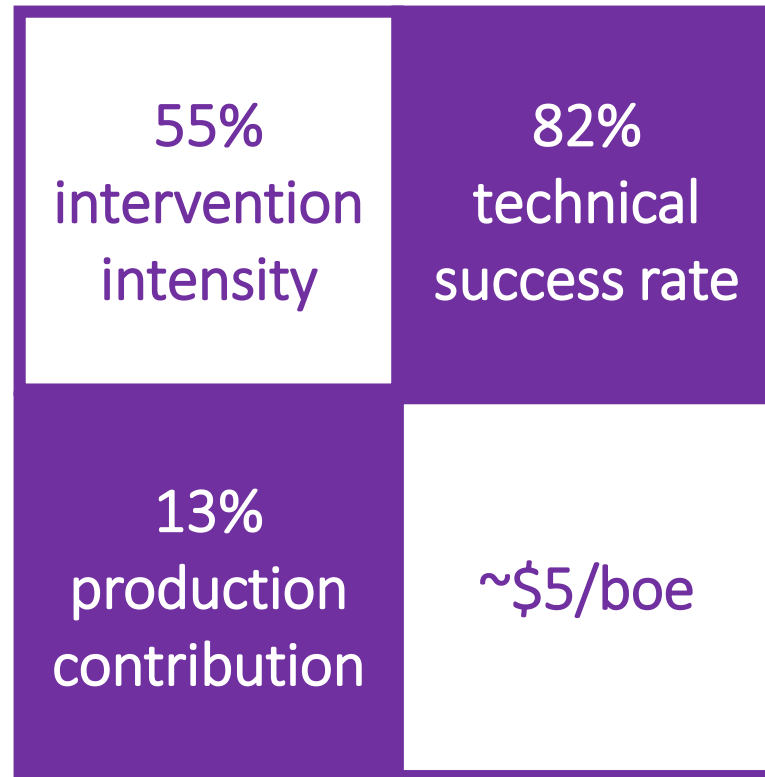
...

Raising the  
potential  
Maximising  
production

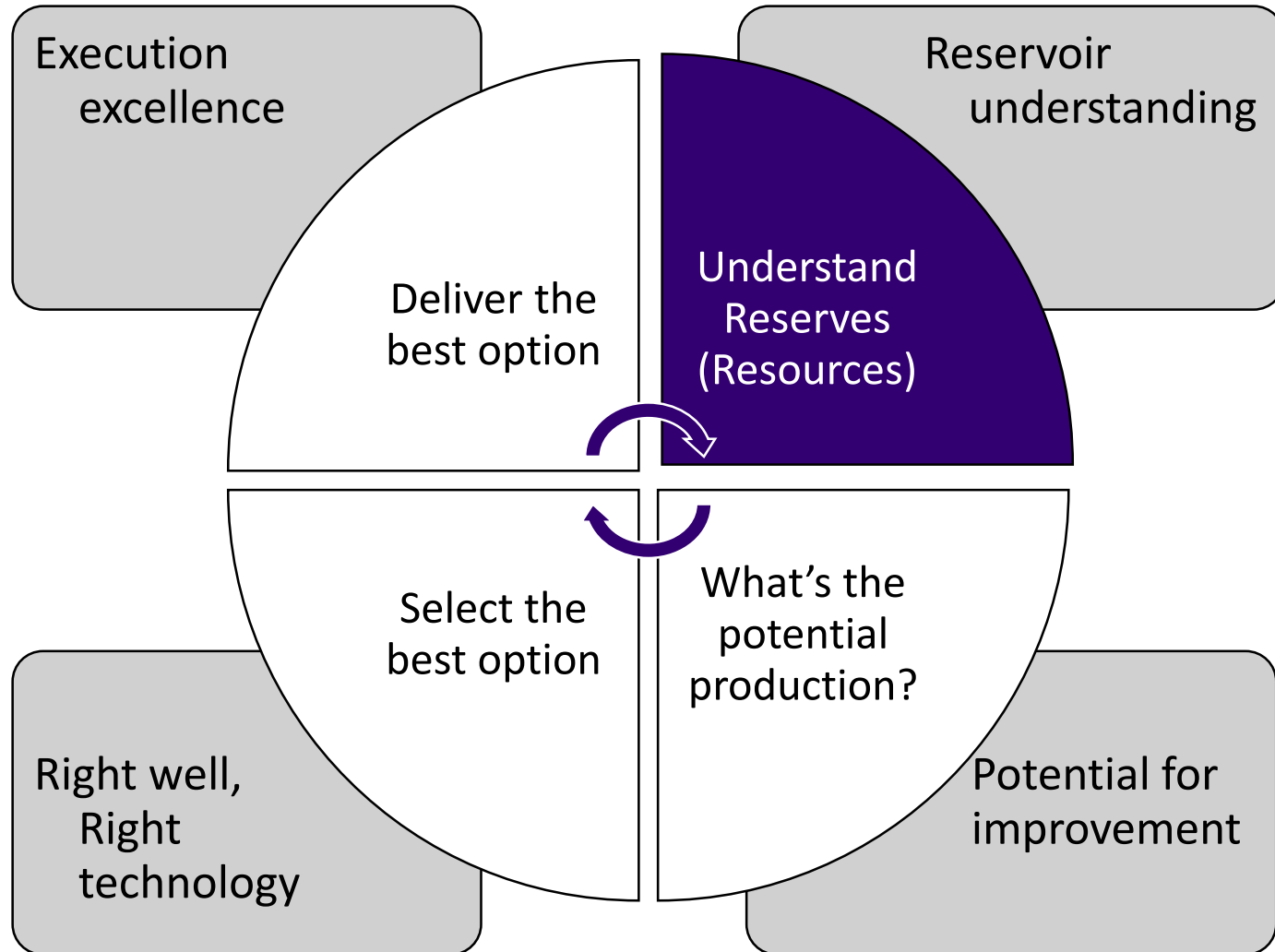


# 2015 Oil & Gas UK Well Interventions

## Benchmarking data illustrate the value of production optimisation activity



# Breaking down the silos... improving reserves recovery through a cross discipline approach, better use of data and improved processes

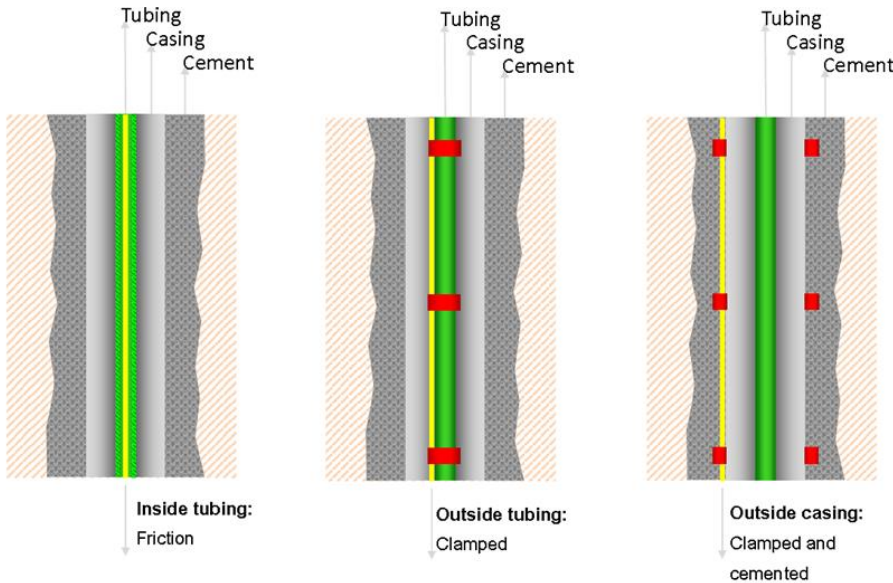


# Optimising the use of subsurface data...

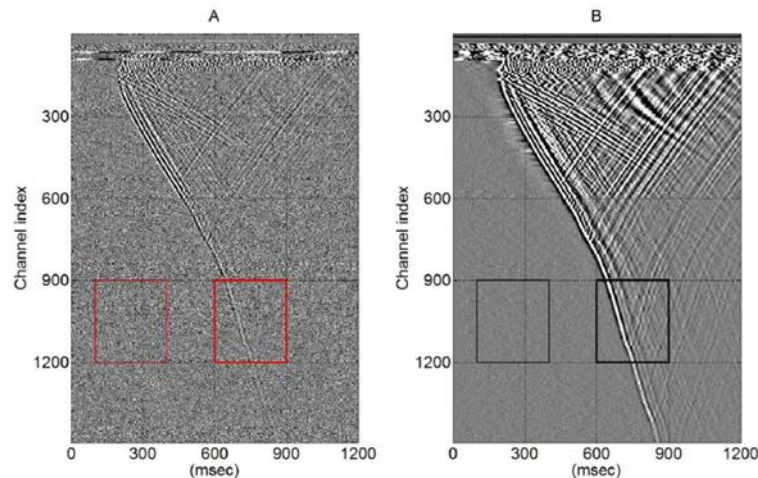
**new/refreshed data can reduce risk, improve certainty  
and ultimately serve to improve ultimate recovery**

- What was initially in place at project sanction ?
  - 4D
- What has the reservoir produced so far ?
  - Saturation logging
  - PLT (gen 2)/tracers
- How has it changed over field life ?
  - Individual well allocations
  - Well x Well volumes
- What is remaining ?
  - Zone x Zone production history
- Where is it ?

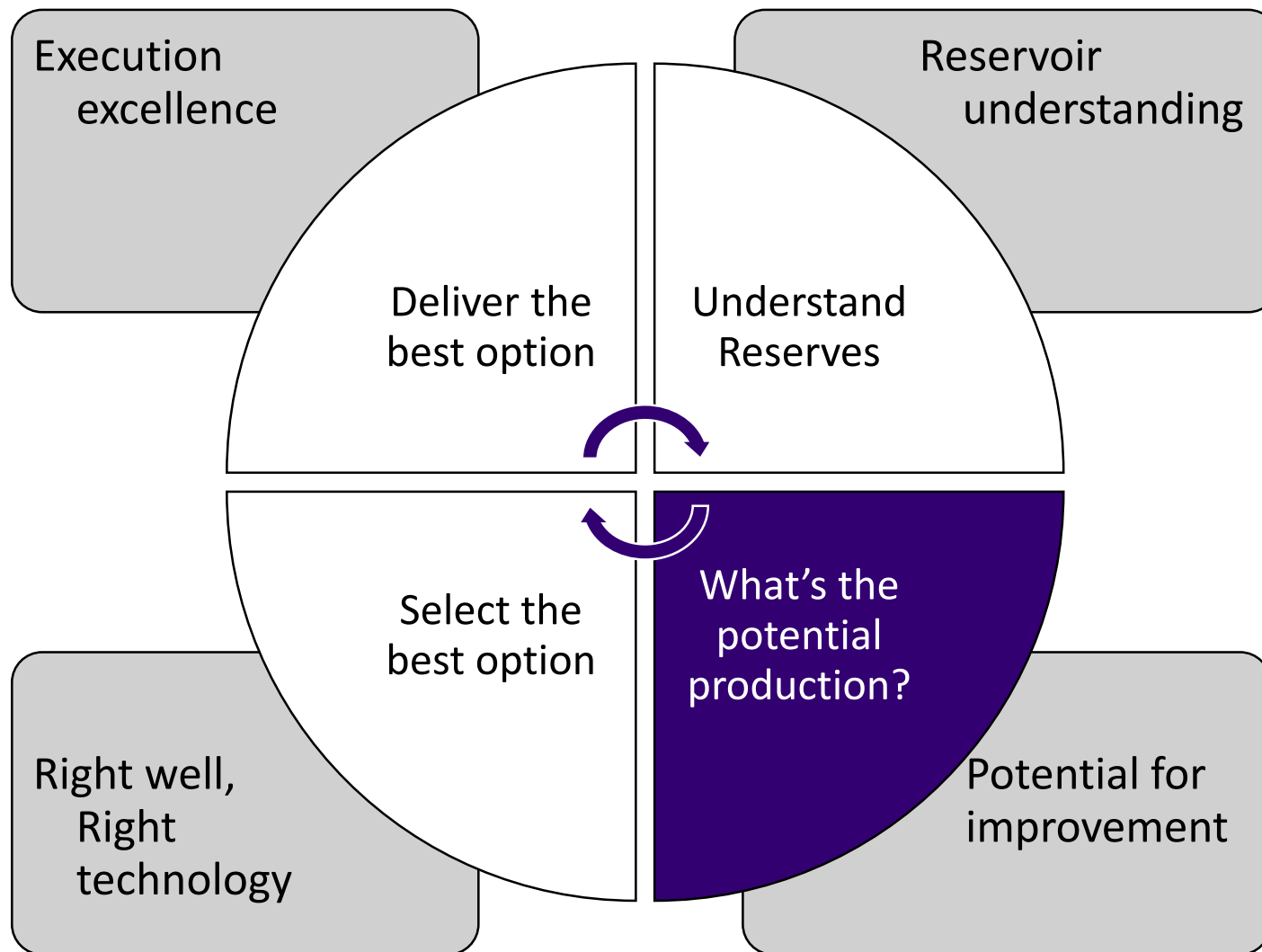
# Distributed Fibre... a cost effective means to acquire 4D seismic data?



- Emergent technology → Early stage in the learning curve
- Significant savings and uplift in the field reservoir monitoring
- Improve reservoir understanding
- Improve production optimisation

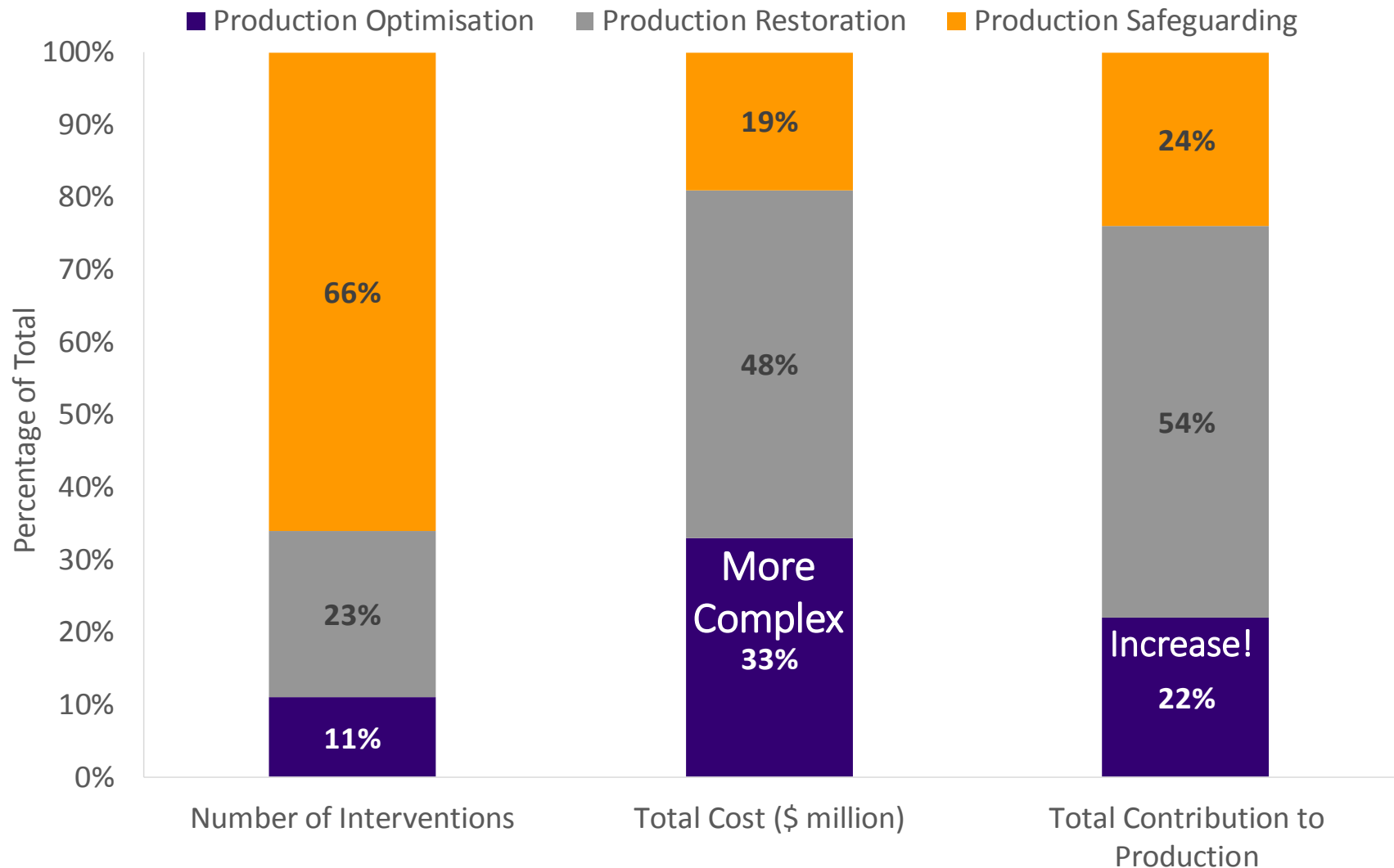


# Good practice ensures we understand where improvement opportunities exist...





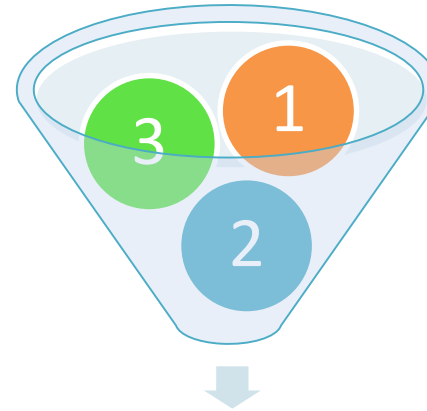
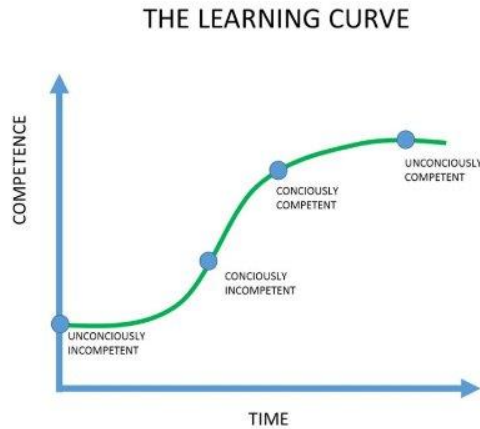
# Production optimisation... the UKCS has a significant opportunity



Source: Oil & Gas UK

# Good practice... a systematic approach to deliver production optimisation

## What does your Well Review Process look like?



Opportunity Summary Matrix  
Asset:

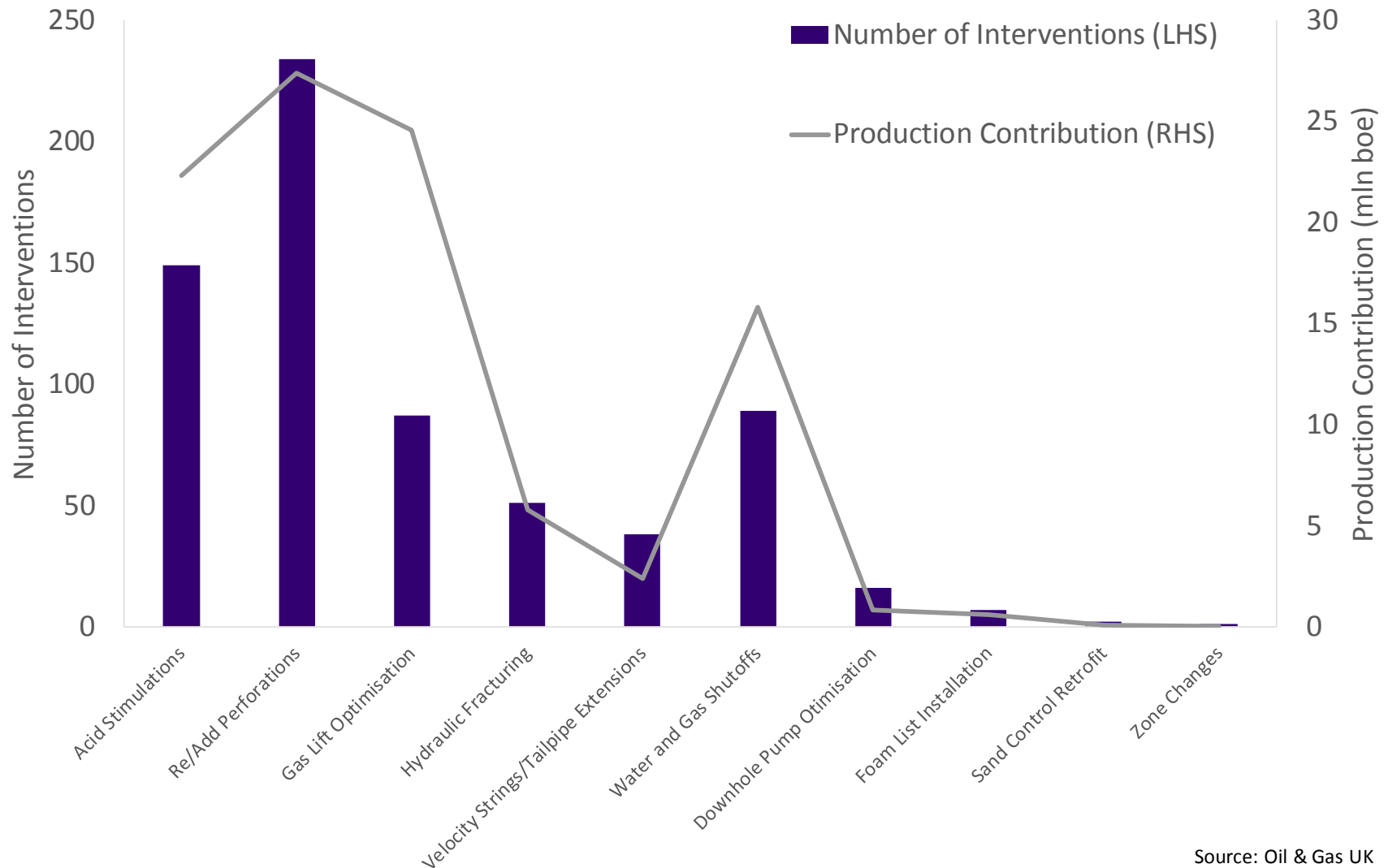
Ranked Opportunities

Activity	Barrel Restoring (Restoration)							Barrel Adding (Generation)							Barrel Protecting (Safeguarding)			Reservoir Surveillance													
	Well Reactivation - Integrity Repairs (Straddles, Velocity Straps)	Tubing Scale Removal	Well Reactivation - Integrity Repairs (NRV Installation)	Monitoring	Tubing & Casing Integrity Replacement or Monitoring	Xmas Tree Repair/Removal	Re-activation of Suspended or Shut in Wells	SCSSV/A-DHSV Repairs	GLV Repairs	Integrity Recompletion	Artificial Lift Performance Improvement (Pump size, point of injection, IMO etc.)	Reperforation or Add Opportunities (including abrasion jetting & proppant - "Stingun" or "Bluespark")	Retrofit downhole jet pumps	Surface Jet Pumps/Reducers	Plunger Lift	Matrix stimulation/treatment (chemical or propped fracture)	Inflow conformance - water or gas shut off or zonal isolation (mechanical plug, chemical WSO)	Testing & multirate well testing	Drill, reduce deployment (export or infield pipelines, water or injection systems & wells)	Injection support or areal sweep efficiency	Production well turnaround to WI duty	Scale squeezes	Water washes	Foam lift, soap capillary strings	Mechanical sand/dbris/asphaltene removal	Scale CT jetting	Multi-finger tubing & liner caliper	PIT (SRD or sideline, injection "warm back" etc.)	Cased hole resistivity	PDV/ST, pulsed neutron logging	

Legend

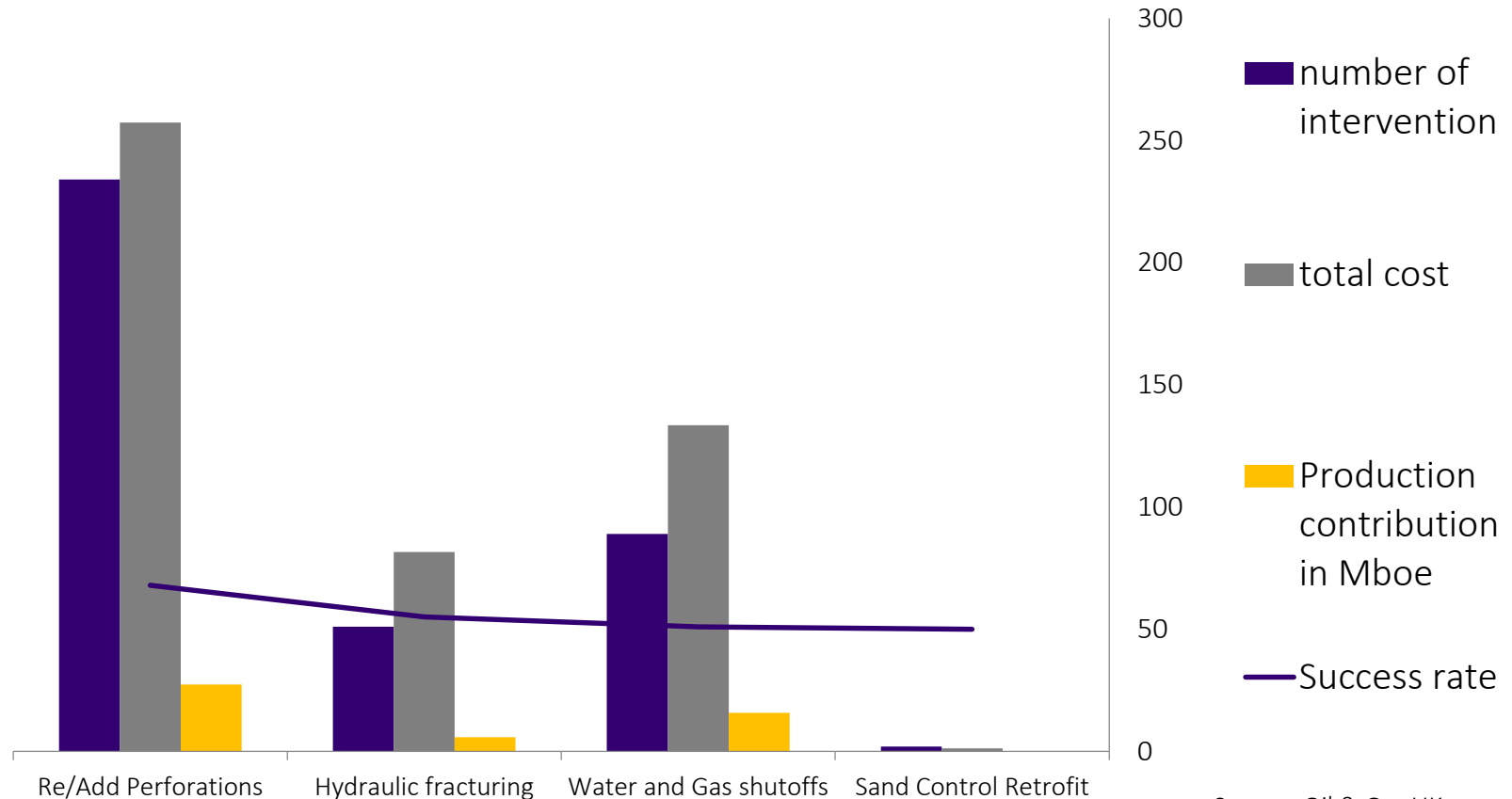
P	Priority Recommended Application
A	Applicable
N/A	Not Applicable

# The value of benchmarking... What type of interventions have added production in recent years?



Source: Oil & Gas UK

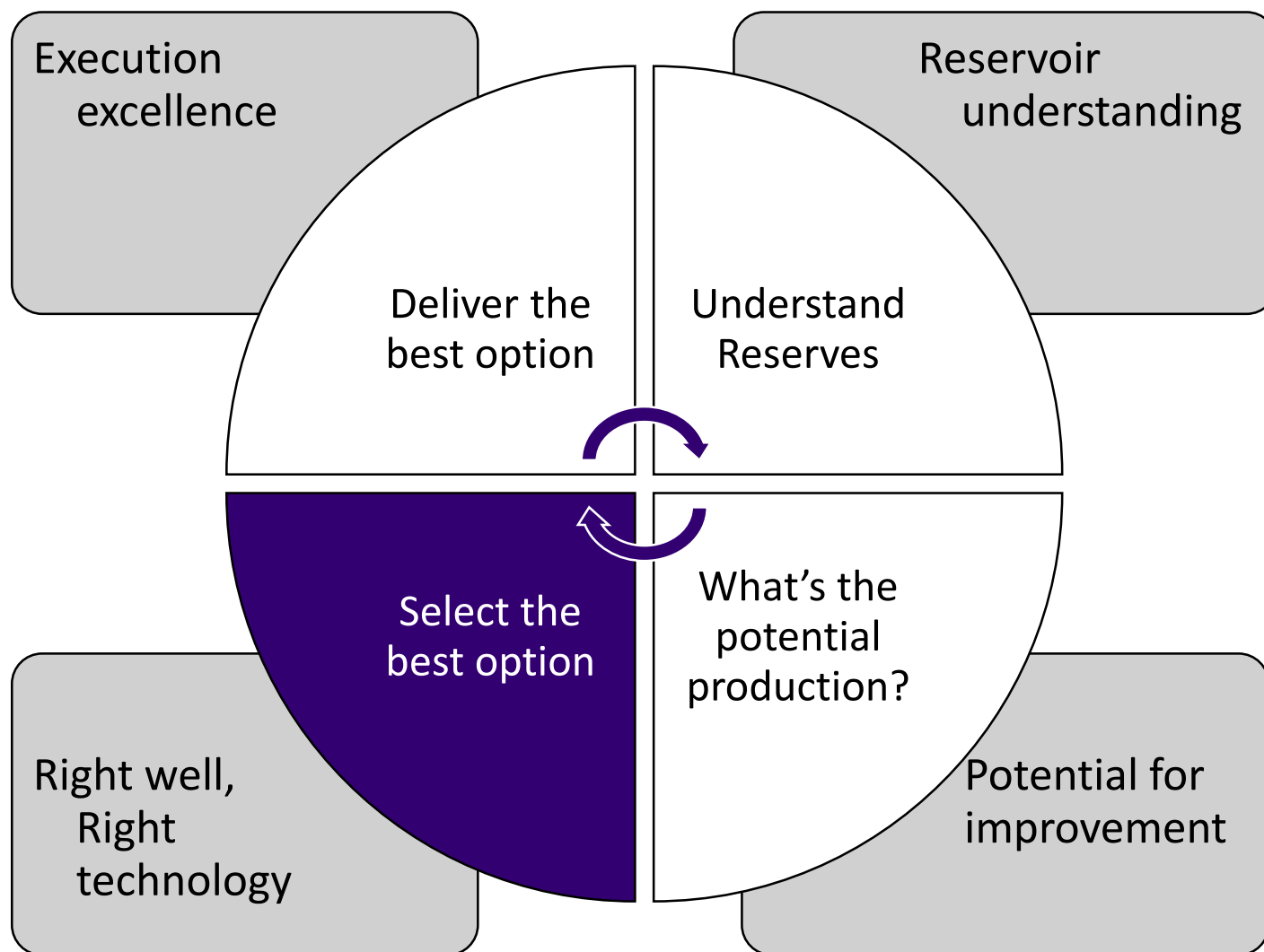
# How can we optimise production more cost effectively, with less risk and greater success?



Source: Oil & Gas UK

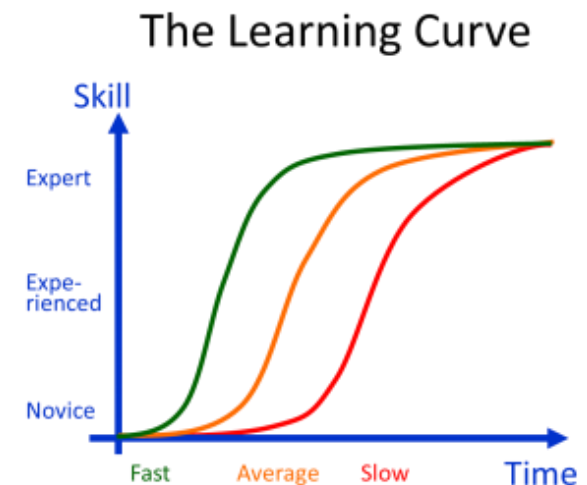
- Only 4 types of intervention, mainly re-perf or add perf
  - Average success rate is ~62% → more risky than other type of interventions

# Good practice... actively seeking ways to optimise production with more impact



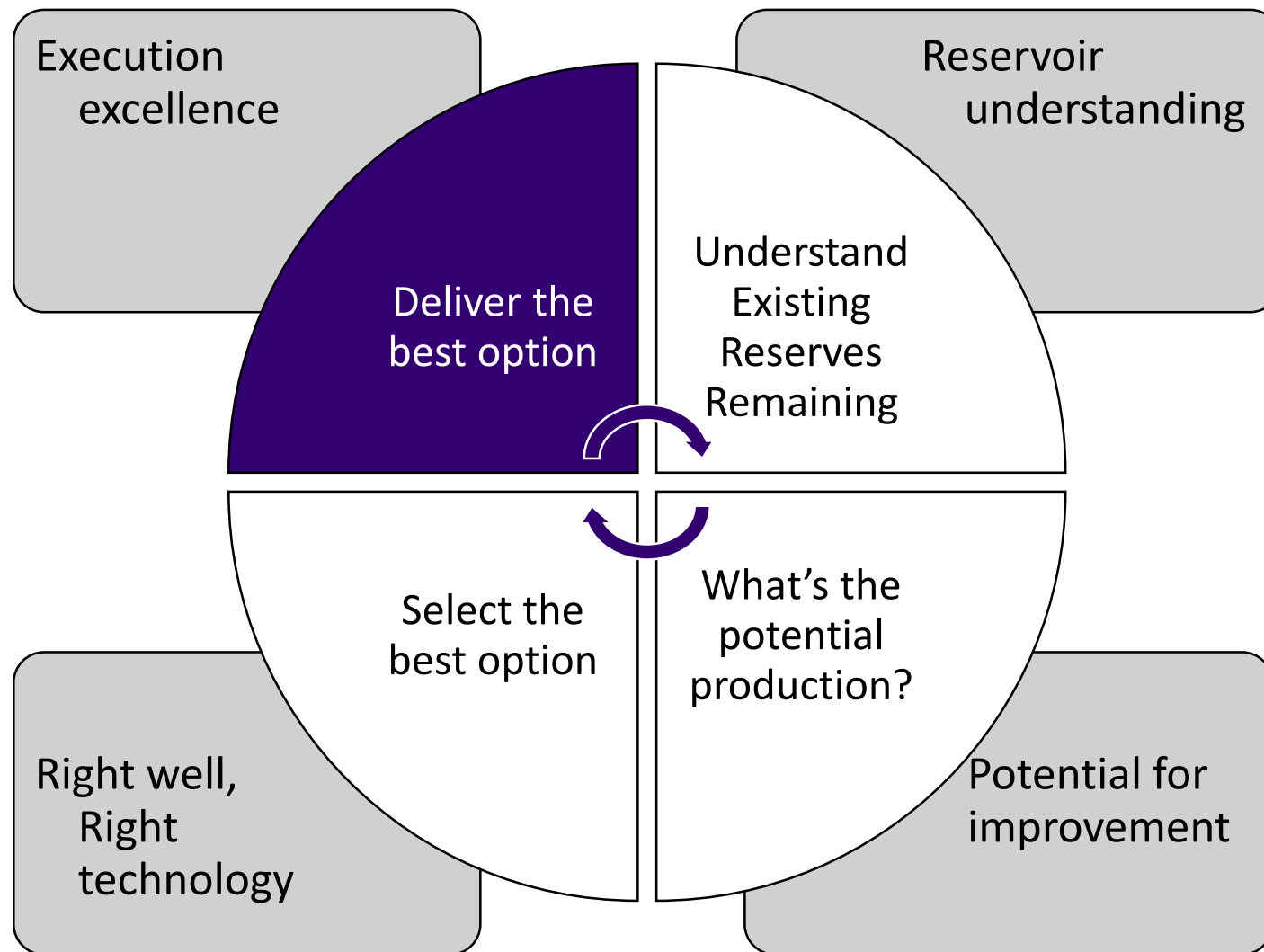
# “Hats Off” Peer Assist sessions – a proven mechanism to share experience and identify opportunities

- Across industry, there is variation in economic & technical success rates
- We can be more effective in how we share our collective expertise
- Identify the opportunities
- Accelerate the route to the right expertise and solutions



# Industry collaboration to create successful, high impact opportunities

Share case studies & experience, create packages of work...

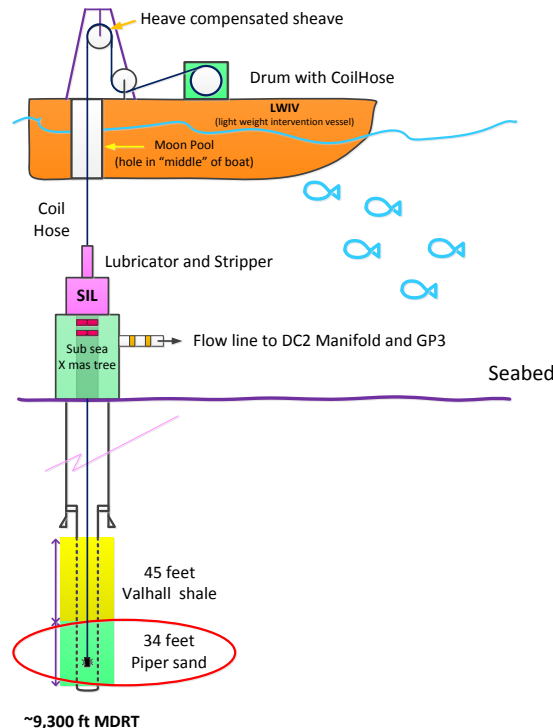


# Execution Excellence

- LWI CT

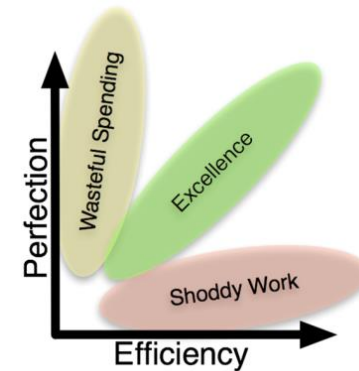


- Coil Hose



- Platform

- Reperf
- Dewatering
- Water shut off
- Reduce NPT



Risk based approach to well integrity issues, ie

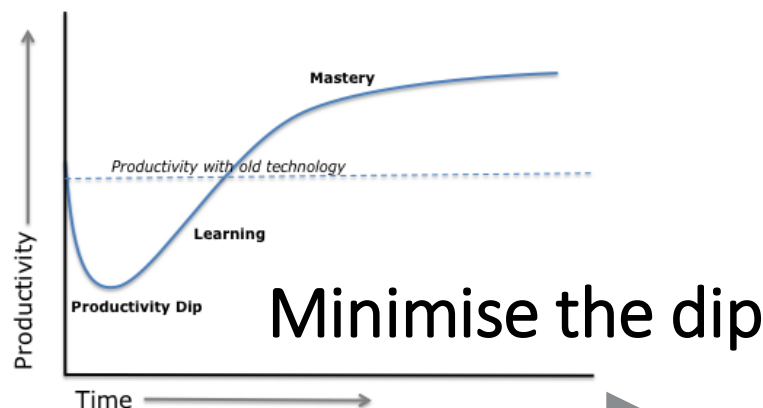
- Gas in DHSV control line,
- Tubing to annulus communication
- Leaking valves



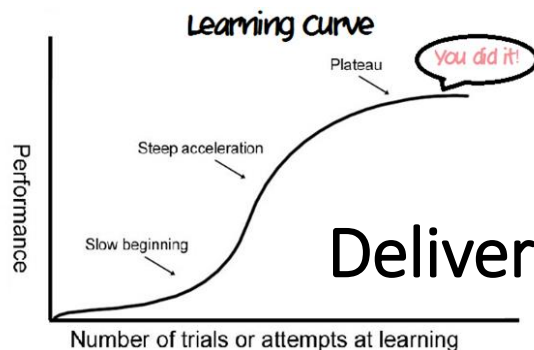
# Working Together Systematically... sharing good practice, expertise and experience to create a hopper of opportunities



Sharing  
Knowledge



Apply Knowledge



Deliver the curve

# Call to Action

- Get involved (**its free**)
  - lets raise the bar for all
- Opportunities for peer assists
  - can someone else help you?
- Workshop on **June 7** at Oil & Gas UK
  - Share case studies and experience
  - Identify good practice
  - Identify our common challenges
  - Identify where the expertise lies
  - Road map to optimising **wells & reservoirs**



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