



Change Management and how to practically
implement DOF/IO
SPE Webinar Series – 09/11/2017

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Tony has extensive experience in the oil and gas exploration and production industry worldwide. Tony has a BA degree from Keele University in Geology and Chemistry, and a Doctorate in Petrology from the University of Manchester. He had a 17 year career with BP that spanned R&D through to front line operations and project management. He was a founder member of BP's Integrated Operations Program, Field of the Future, and was subsequently the global director for the Advanced Collaborative Environment Program. In 2006 he moved to BG-Group to launch its digital oilfield program. In January 2009 he founded Stepchange Global, a dedicated digital oilfield advisory company, and has since advised Statoil, BP, PETRONAS, ConocoPhillips, Total, Santos, Origin Energy, BHP Billiton, GAZPROM and ExxonMobil on their Integrated Operations strategies.



Tony Edwards, PhD
CEO, Stepchange
Global

Over the last four years Tony has combined to his operational experience in running unmanned platforms with Digital Oilfield to advise on radically minimum manned operational and project concepts that are lower in CAPEX and OPEX whilst delivering improved safety and reliability.



Topics to be covered



- Recap on DOF and why Change as a topic is so important
- People
- Process
- Organisation and Governance
- Technology
- Leadership
- Collaboration
- DOF delivery
- Summary



Digital Oilfield – is seen as the Future and the Way to Optimise the Oil and Gas Business



What is Digital Oilfield (DOF)?



'The vision for the Digital Oil Field is one where operators, partners, and service companies seek to take advantage of improved data and knowledge management, enhanced analytical tools, real-time systems, and more efficient business processes'

IHS CERA: Digital Oil Field of the Future

What is enabled by an IO?

- Moving to a real time or near real time way of working
- Connection of one or more remote sites or teams to work together
- Moving to more multidiscipline way or working
- Value chain integration and optimisation



'How we run our companies in the future'

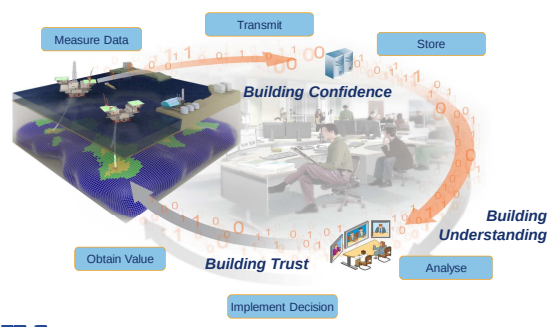
Changes enabled by Digital Oilfield

Before	With IO
Serial	Parallel
Single discipline	Multidiscipline teams
Dependent of physical location	Independent of location
Decisions based on experience	Decisions based on Real-time Data
Reactive	Proactive



'This is a big change in the way we work'

Collaboration is key to delivering the Measurement to Decision Lifecycle



Improving Operational Excellence

DOF Elements for Success – Stack Model

Highest Value

Value Creation

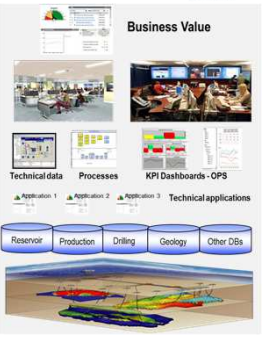
People

Organisation

Process

Technology

Highest Cost



DOF - A Capability Approach



*'By a capability we mean the combined capacity and ability to plan and execute in accordance with our business objectives through a designed combination of human skills, work processes, organisational change and technology'**

A Capability is a performance improvement methodology that is value driven, measurable and action oriented. To have the 'Capability' to improve business value you must all of four key elements in place:

- **Process** – What is the core value process and underlying processes that is to be improved and updated
- **Technology** – What technologies are needed to improve the process
- **People/Resource** – What skills, competencies and behaviours are needed to execute the process and use the supporting technologies
- **Organisation/Governance** – What organisational structures, incentives and relationships are needed to execute the process



* Henderson and Kulatilaka 2008 – Boston University School of Management

People



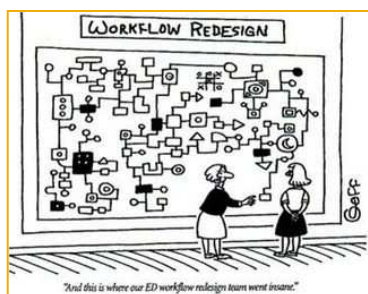
People Critical Success Factors



- People need to be engaged at every step of the DOF implementation
- You cannot over-communicate!
- You need to recognise the 'type of person' who will thrive in the high energy real time working environment enabled by DOF
 - Strong generalists who understand the value chain
 - Strong communication skills
- People who are naturally sociable should be considered a 'good fit' for collaborative working – i.e. those who like a 'bit of banter'
- 'completer finishers' who want work with a deep level of technical content should perhaps be considered for support roles
- The DOF implementation team needs to be clear on what changes they will allow i.e. they should not be allowed to 'water down' the overall concept
- Experience of the operational site is often very useful for Office based collaboration



Process



Processes Critical Success Factors -



- Processes should be selected that can add value to the operations from the application of real time data and information and the ability to collaborate
- Processes should be selected that can:
 - Be shared between the Office and the Field (or other location) the office IOC
 - That are multidiscipline in nature and can benefit from the multi-discipline integration
 - That can add value by being done continuously or at a higher frequency
 - That can benefit from a synchronised way of working
 - That are operationally focussed and conform to the time slice model
- The focus should be on how you run the process collaboratively and not to change the 'technical content' of the process
 - i.e. how is the process run on a shorter timescale with higher quality, over multiple locations by a multi-discipline team



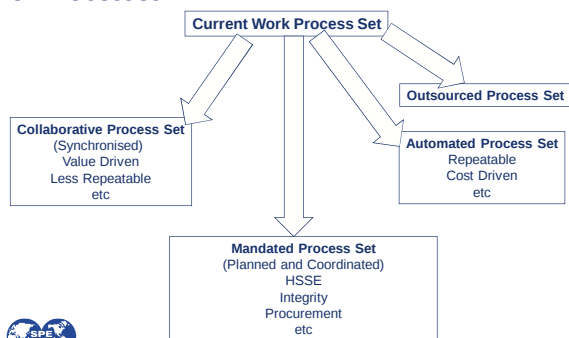
Processes Critical Success Factors -



- It is not necessary to re-map all your processes. Start with the process you have and evolve it over time
 - Processes continue to change as the team learns how to use the technology and collaborate together
- Some new processes that you have not seen before will emerge
 - If you give smart people real time data and information and the ability to collaborate then they will develop new processes as they see new opportunities
- The differences between how disciplines or locations run similar processes needs to be considered
- Processes in a real time world evolve very fast
- Consideration should be given to bringing some field based processes into the office collaboration suite



Recognising the different types of Processes



Organisation and Governance



Organisation Critical Success Factors -

- Alignment of the organisational model to the new way of working is one of the most critical success factors
 - The timing of the alignment needs to be carefully considered
- The office organisation needs to be aligned with the short timescale working in the field and support the execution of work
 - i.e. the time slice model
- Personal incentivisation needs to be adjusted to support the team based working model in the office and the field
- R&R's for those in the collaborative suite need to be adjusted to follow the time slice organisational model
- If third party companies are involved their contractual incentivisation needs to be aligned with the overall goals of the new way of working

Organisation Critical Success Factors



- Consideration should be given to bringing some roles from the field to the office collaborative area
 - i.e. if you do not wear a hard hat you should not be in the field
- The IOC in the office should not be 'empty' during normal office hours. The Office IOC needs to be seen to be on-call and there to support the field
 - On-call provision for the weekends should be considered
 - Night shift provision may need to be considered
- Decision rights should initially stay where they are but there needs to be a recognition that this may change and may need to be adjusted at a later date
- If considering remote control should they still report to the field team leader?
- Where you cut your organisational boundaries will strongly affect the behaviour of your people
- New network based real time and remote organisational models are emerging



Technology



Technology Critical Success Factors -



- The technology needs to be simple and easy to use and work!
 - No more than 'three clicks' to do anything
- Sufficient training and support needs to be given to the team on how to use the technology
- Consideration needs to be given on how to support the technology as the use becomes business critical.
- RT Data needs to be 'the same data, at the same time, in the same way' to support situational awareness
- The data and information needs to be relevant to the decisions being made
- Technology Maturity and Organisational Maturity needs to be aligned
- The data does not have to be perfect and you can start with the data you have got
- The ability to VC and data share needs to be:
 - One to One, One to Many, Many to Many, Inside and outside the company
- As good as the technology that you use at home!
- VC systems need to be always on at both ends to support situational awareness
 - Video feeds of plant and equipment should also be used



The importance of Leadership



Lessons we have learned: Leadership



- Clarity of vision and Communication
- Align the Organisation
 - Teams
 - Assets and Centre
 - Functions
 - Internal and External
- The ability to allow everyone to 'earn and learn and lead'
- Absolute integrity and honesty
- Proactive participation in DOF implementation



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Lessons we have learned: Leadership



- A people-centred approach rather than a process-led approach
- Build trust within and without your team
- Put people issues 2nd on any agenda, after HSE
- Be aware of all types of cultural differences
- Engage and communicate
- Organisational alignment can unlock the value from DOF



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Collaboration is at the heart of DOF

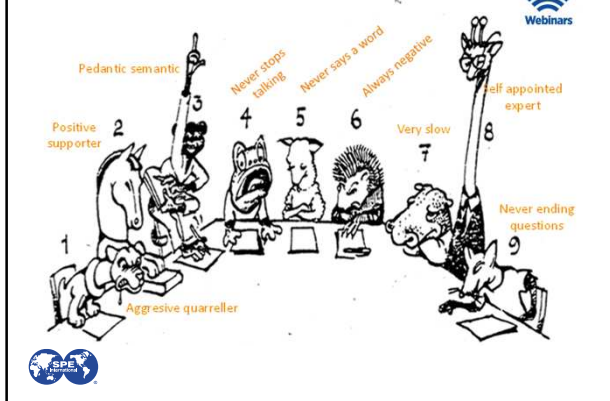


Common Collaboration Centre Pitfalls

- 'If we build it they will come' approach
 - Build a fancy room and put people in it but everyone carries on the same way
- Part-time IOCs
 - This means part-time use, a fancy meeting room and nothing more
 - Over time rooms get used less and less – Empty rooms are bad in the eyes of the
- Not delivering collaborative work processes that changes 'who does what where'
 - Need to develop workflows that are real time collaborative, multi-site and multidiscipline
- Not building a relationship between those in the office and those in the field
 - No trust, No joint decisions, No implementation, No value
- Stopping the MOC too early (3 months after the IOC opens)
 - Coaching & MOC needs to be maintained to sustain the IOC in the long term
- IOCs fade away over time.....
 - Purpose is lost as personnel change out and leaders move on
 - Need to fully embed IO as the way of working and keep evolving to sustain it



Together a World Class team?



The DOF Programme Challenge

Business leadership driving performance. DOF could look like cost and risk

Technical leadership can see a big DOF opportunity, but struggle to deploy effectively

New business development struggles to fully leverage the DOF technology, it is too unknown

Technical practitioners want new toolkit, but in reality are reluctant to re-train

"Don't bother me with those things now - I've got a war to fight!"

Business

Technical

Vision / Strategy

Leadership

Practitioners

Delivery / Risk mitigation

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Two Philosophies for Delivering DOF?

- IO as a transformation programme
 - Delivered in the "line"
 - Supported by Central Programme Office
 - Emphasis on Value attainment and People and Organisation Change
 - Technology is the "enabler"
 - Emphasis on solving day to day operational problems
 - Outcome and value driven
 - Integrates the teams and the ways of working
- IO as a Technology/IT Project
 - Delivered by a central group
 - Emphasis on the Technology – Big Data!
 - Integrates the Systems and Data
 - Technology looking for a home

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Characteristics of a successful DOF Project or Programme

- It is not viewed as a technology project but a technology enabled change programme
- It is a continuous improvement programme and not a project with a start and a stop
- It has active senior management support
- It is lead by the Asset/Operations Teams
- A willingness to try and fail, it will not be right first time
- 'do it your way', one size does not fit all
- A recognition that the implementation is organisationally and culturally dependent

'New Technology + Old Organisation = Expensive Old Organisation'

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Early Experiences introducing DOF to Assets



- Assets don't think they have any problems – they are either 100% efficient or they won't admit to problems
- They believe they have all the expertise they need
- Delivery timeframe driven by asset priorities rather than Programme
 - Need to align with asset priorities and schedules
- Short term performance and cost focus
 - Too busy to meet
 - Don't see value in some of the solutions, thereby missing opportunities e.g. Remote Equipment Monitoring
- Only want technology solutions – people / change management is seen as optional. Hence, full value is often not delivered
- By contrast, feedback is that too many initiatives are placed on assets by Centre – confusion and lack of co-ordination across initiatives (no Programme of work)



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DOF Critical Success Factors - General



- Leadership at all levels need to be seen to be supportive of the new way of working
- It will not be right first time and will evolve over time
- 'Earn and learn' – add some value to your operation as you go along and learn from your experience of doing this
- DOF and Collaboration is very culturally and organisationally dependent
 - The DOF model needs to be aligned with your culture
- In forming a collaborative environment you are joining different cultures together
- These cultures will have different accepted values and individual behaviours
- It is imperative that attention is given to:
 - Joining cultures together
 - Behavioural aspects of collaboration
 - Managing a capability transformation programme
 - Organisational issues



DOF is an Integration Project



- How do we Integrate across:
 - Technologies – Data and information
 - People, Process, Technology, Organisation & Physical Environment
 - Geographically remote Locations
 - Disciplines and Functions
 - Within and without the company
 - Value Chain, reservoir to customer
- This needs to be broken down in to manageable chunks
- An Organisation needs to understand where it's primary value opportunities are from above
- Needs to be business facing
- It is key that all parties are aligned on a common outcome and vision



Summary: DOF Critical Success Factors



- There are many common pitfalls in implementing DOF
 - Not giving enough focus to change management
- People need to be fully engaged
- Processes need to be updated to be collaborative
 - Across functions, locations and in real time
- Technology is a key enabler
 - Real Time data and information and collaborative working technologies are key
- Need understand organisational alignment
- Leadership support is critical





Questions & Reflections

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