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Beyond the hype: delivering better projects

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PremierOil

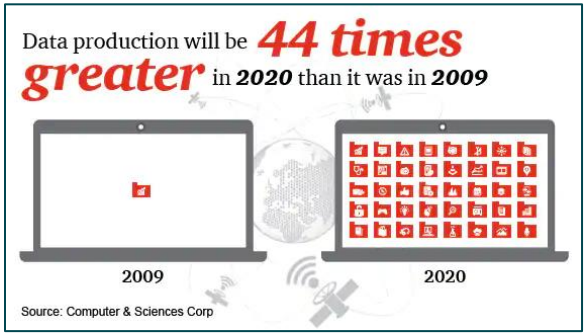
Forward looking statements

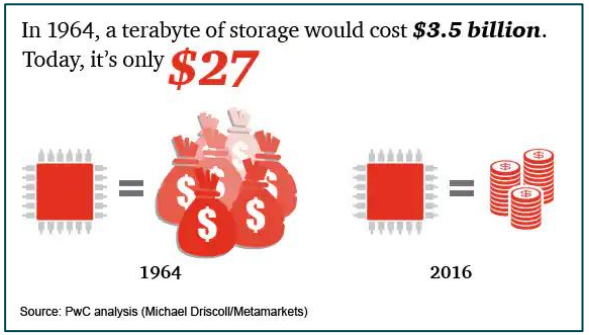
This presentation may contain forward-looking statements and information that both represents management's current expectations or beliefs concerning future events and are subject to known and unknown risks and uncertainties.

A number of factors could cause actual results, performance or events to differ materially from those expressed or implied by these forward-looking statements.

Global Context: Digital transformation as a global megatrend

- 4th industrial revolution: disruptive technologies and trends such as the Internet of Things, robotics, virtual reality and artificial intelligence are changing the way we live and work.
- The digital revolution has no boundaries or borders. It is changing behaviour and expectations.
- Change is exponential & unpredictable.

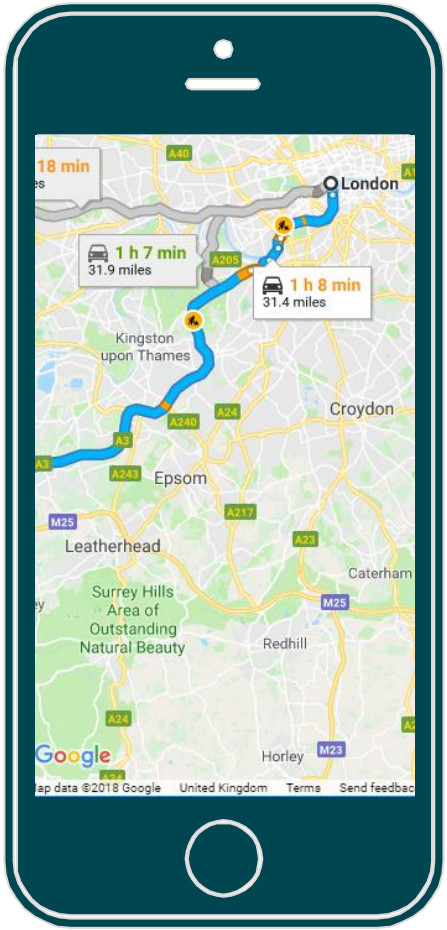




https://www.pwc.co.uk/issues/megatrends/technological-breakthroughs.html

Technology, process, people

The continuous adoption of new technology is part of everyday life.



DIGITISATION → DIGITALISATION → DIGITAL TRANSFORMATION

Smartphone.

Web browsing & email on the go.

Apps that use location
Payment apps

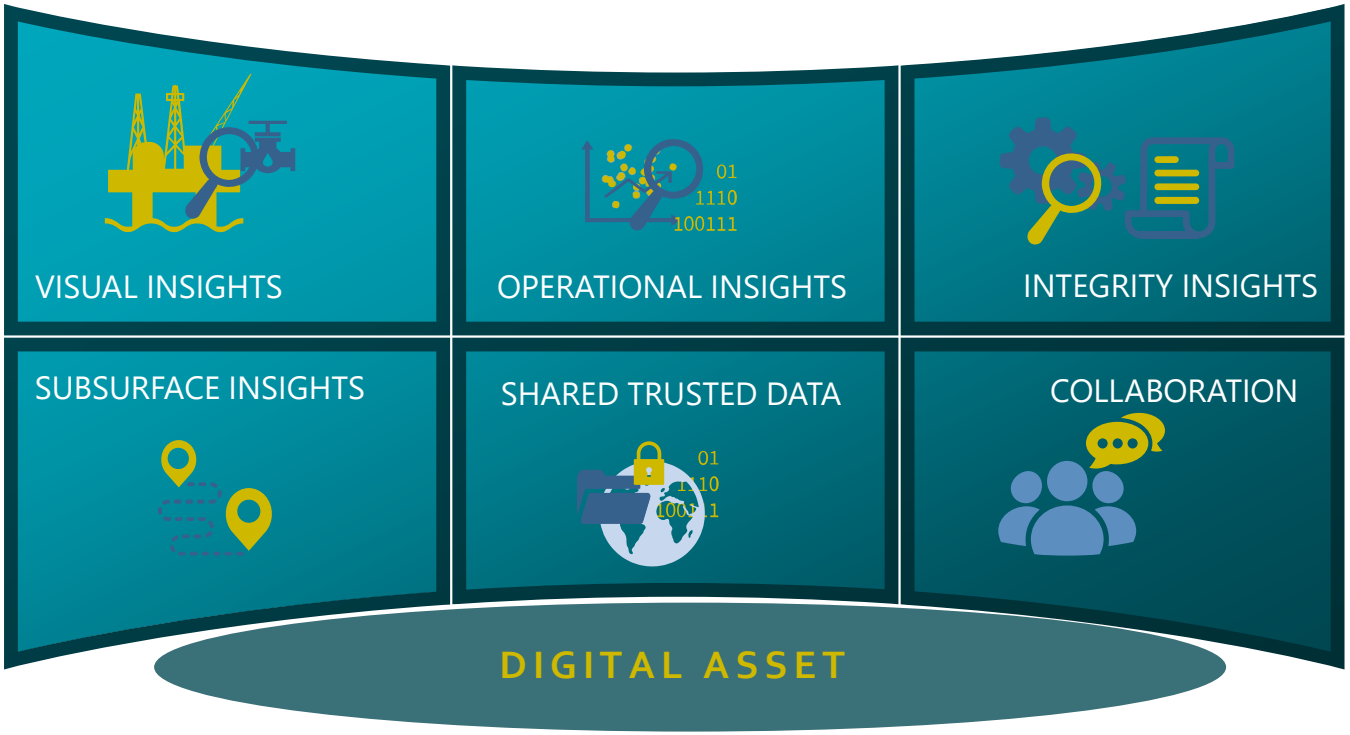
Transformation=
changing the way we do things

What does this mean for Premier Oil?

- We are looking at how to make changes to people, processes and systems in a structured transformation programme built around digital assets
- Value needs to drive focus, change needs to add value: business case
- Digital transformation for Premier Oil may mean various things:
  - being safer
  - being more efficient
  - reducing operating costs
  - improving reliability
  - reducing downtime
  - increasing production
  - making better decisions through improved collaboration and data sharing
- We recognise that this needs to be an iterative learning process
- Collaboration is key

Think big, start small, adopt progressively

What do we mean by a digital asset?



What might these digital assets consist of?

User Portal (based on role, profile & requirements)

VISUAL INSIGHTS	OPERATIONAL INSIGHTS	INTEGRITY INSIGHTS	SUBSURFACE INSIGHTS	COLLABORATION
Interactive 3D visualisations that act as portal to access design, procurement and maintenance & operational data.	Lifecycle dynamic simulations • engineering simulator • operations training simulator	Data collection and analysis to support **pro-active** asset integrity management.	Reservoir models to support: • Well production optimisation • Reservoir optimisation	Integrated operations centres onshore & offshore Applications for communication & effective data sharing

SHARED TRUSTED DATA

CMMS, 3D CAD, PI, P2W, Operator's Log, condition monitoring, IOT, metocean, diagnostic etc.

Challenges

- Buzzword bingo: language can alienate, antagonise or confuse
- Kid in a sweetshop: just because you can, doesn't mean you should – build business case
- Emperor's new clothes: show me what you've done, not just what you could do
- Wading through treacle: change needs top-down commitment and bottom-up enthusiasts
- Over the waterfall: agile iterative approaches do not fit with traditional project execution
- Herding cats: business processes and governance still need to apply to new technologies
- When I were a lad/lass… : getting by/getting away with versus getting better
- Who cares?: benefits need to be clearly articulated & fairly distributed (contractual model)
- Betamax: need to make pragmatic decisions to "future enable" assets (can't "future proof")
- Somewhere over the rainbow: turning beautiful visions into nuts & bolts of delivery

Where do we start?

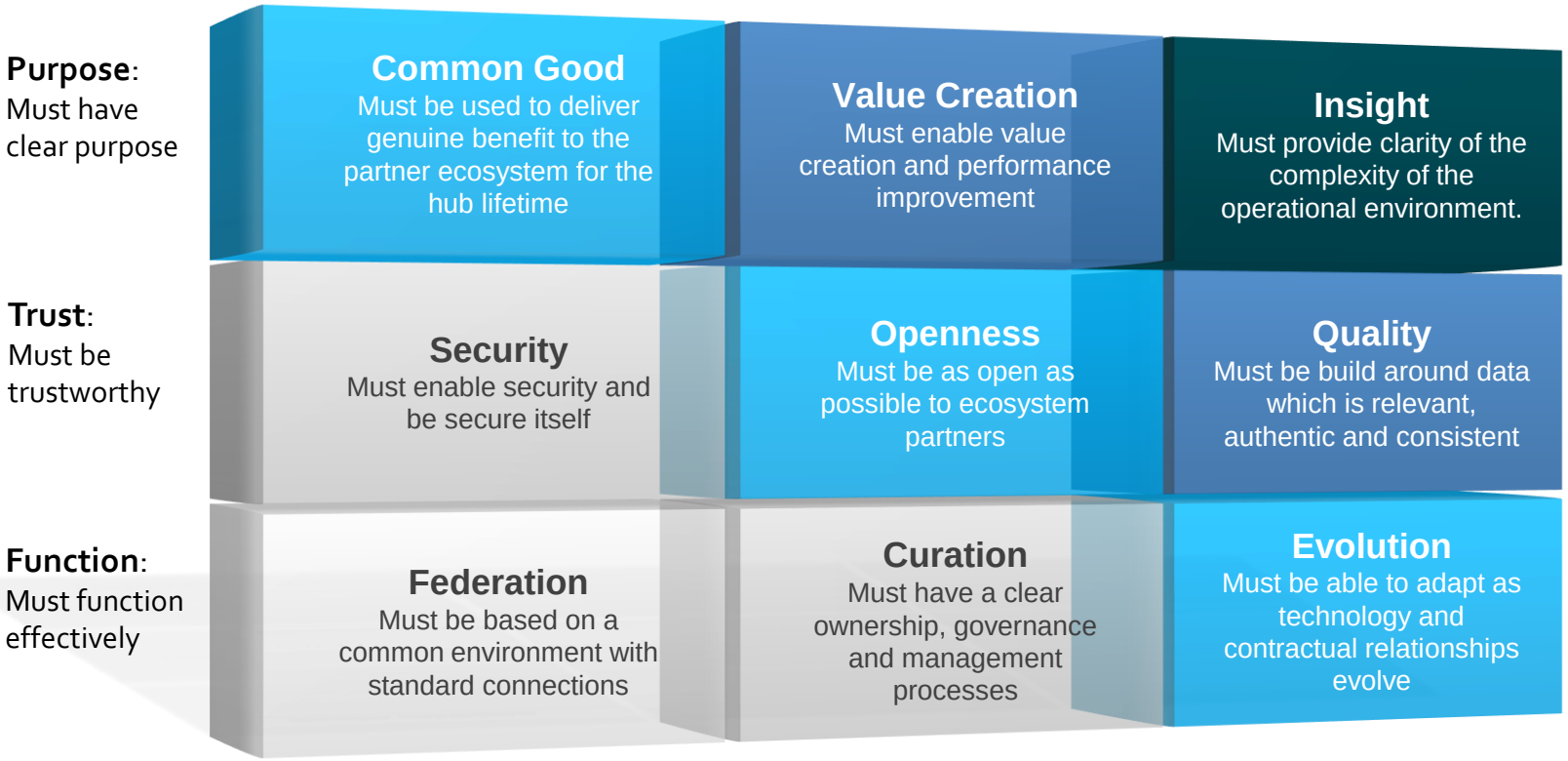
How do you deliver an uncertain/undefined workscope in a rapidly changing environment?

Agile is an umbrella term for a range of "lightweight" development frameworks based on agile values:

- Individuals and interactions
- Incremental delivery continuously adding value
- **Collaboration** across the participants
- Responding to change

Agile approaches are ideally suited to an environment where requirements are uncertain and subject to change, and new and emerging technologies make implementation strategies unpredictable.

Gemini Principles: model for data management

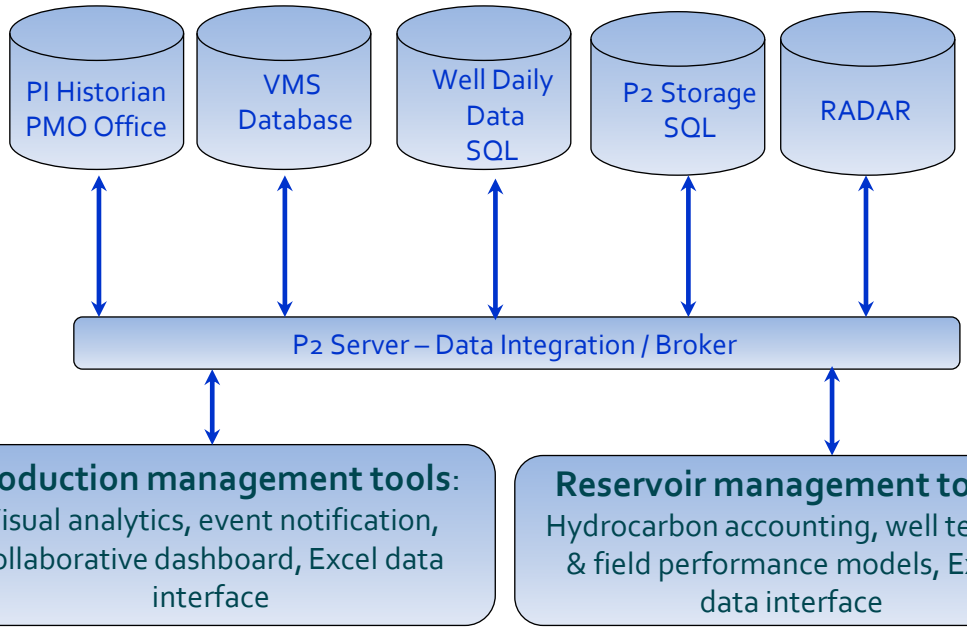


Bolton, A., Enzer, M., Schooling, J., *et al*. (2018). *The Gemini Principles: Guiding values for the national digital twin and information management framework*. [online] London: Centre for Digital Built Britain. Available at: https://www.cdbb.cam.ac.uk/news/2018GeminiPrinciples [Accessed 06 Feb. 2019].

Case Study: Catcher digital oilfield

Corporate support & offline systems:
e.g. production forecasting & reserves, production chemicals, flare consents, defining well operations parameters, flow assurance models

Online, real-time or continuous surveillance systems



Production management tools:
Visual analytics, event notification, collaborative dashboard, Excel data interface

Reservoir management tools:
Hydrocarbon accounting, well testing & field performance models, Excel data interface

Gather user requirements
(needs vs aspirations)

Data flows: break technology into understandable pieces and relate them to business requirements

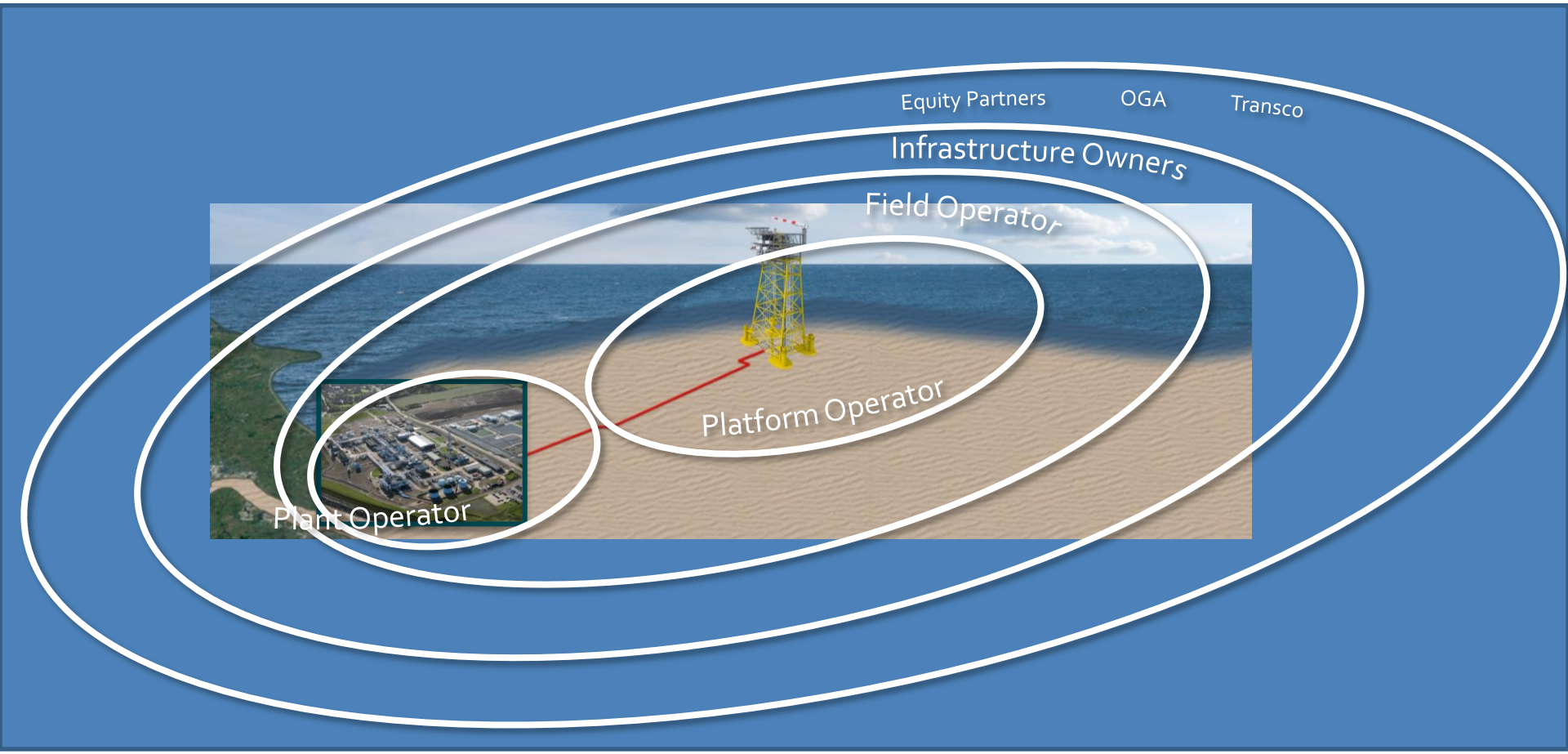
Work flows: who, what, when, where, why

Requirements met by blend of current systems and upgrades

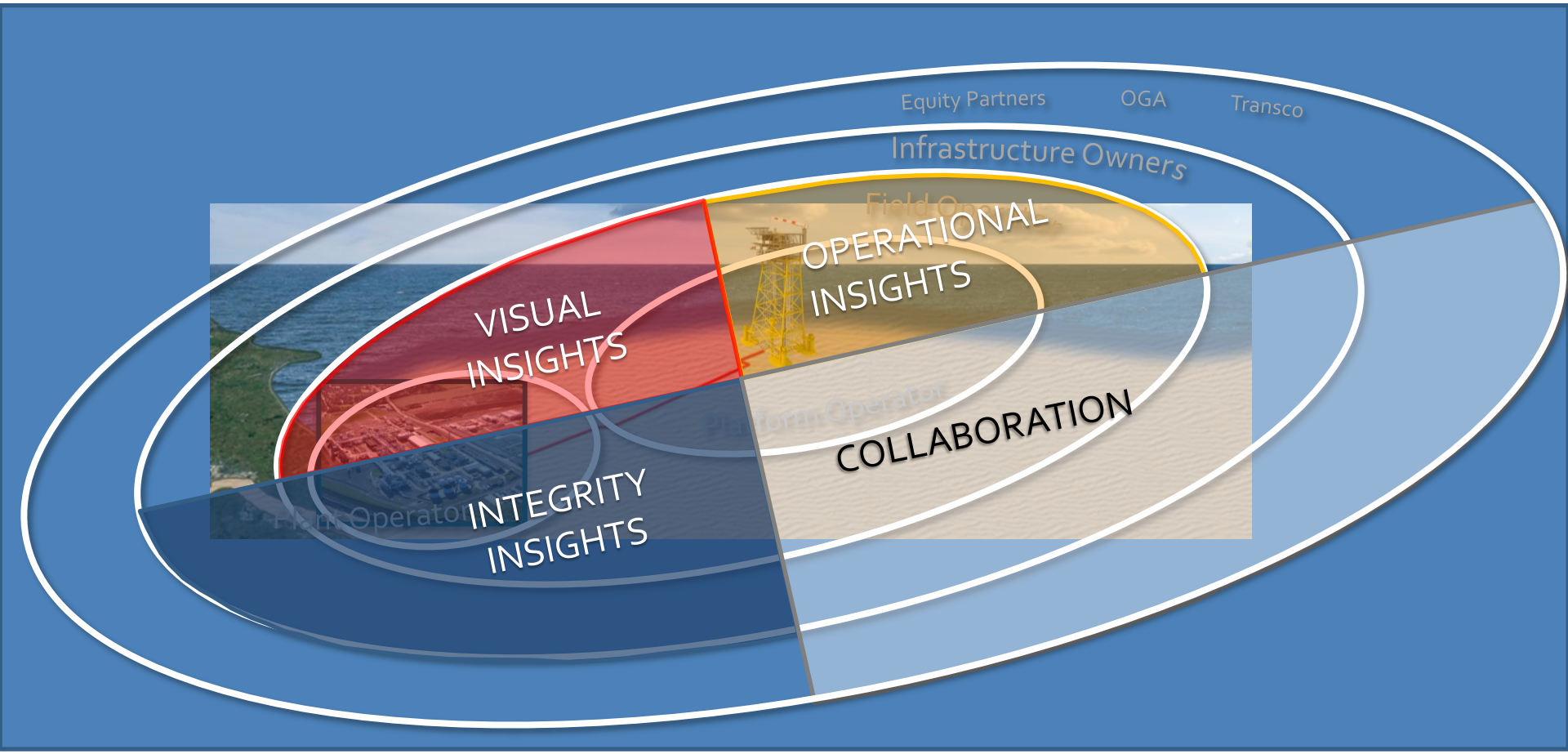
Future functions can be added, existing functions changed out

Turning data into information & knowledge

Case Study: Enabling collaboration on Tolmount

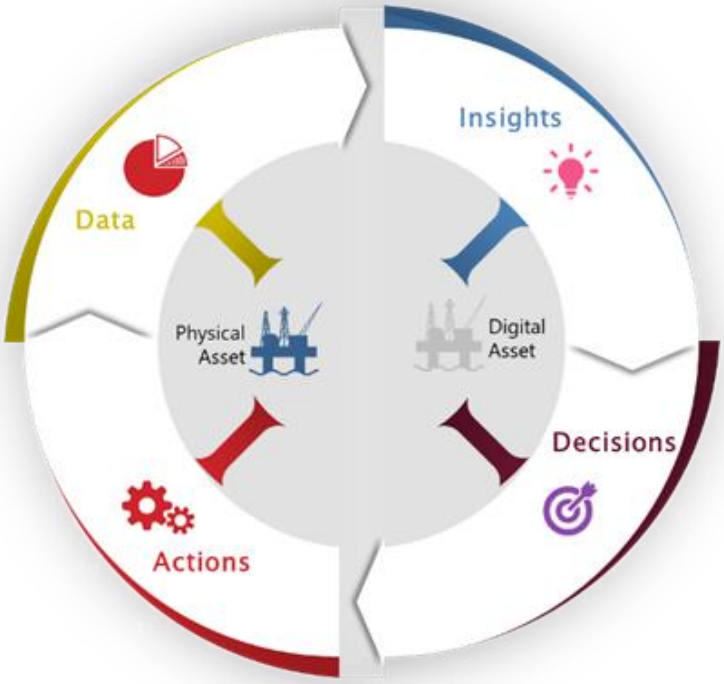


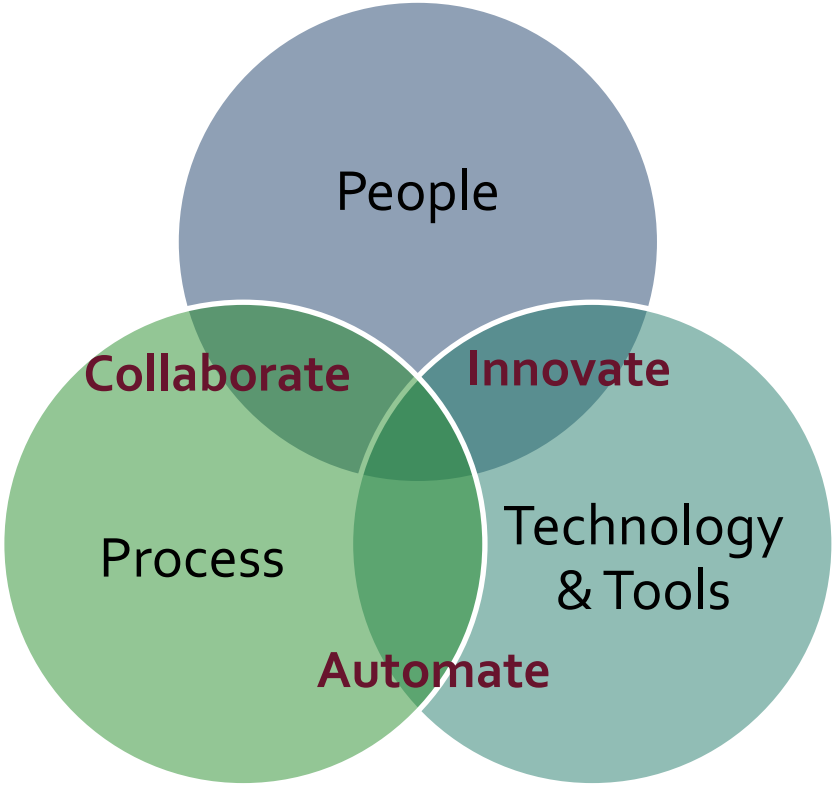
Case Study: Enabling collaboration on Tolmount



Case Study: Sea Lion Integrated Intelligent Operations

Collaborative production-focussed organisation enhanced by the latest rapid communication and data storage, processing and analysis technologies.





The path ahead – new ways of working

Agility

- Closer collaboration with vendors – co-creation of solutions
- Earlier start, iterative approach to develop requirements
- Flexibility – function focussed, not one solution for all, responsive to changing needs

New market models

- Broad not narrow focus – each equipment package operates in a wider system context
- Marketplace for apps: functional requirements may be met by suite of products/providers, move away from one size fits all

Learning and sharing

- Ownership/integration of data
- Collaborative data platforms
- Use of pilots/trials
- Data science: clients want understandable explainable insights grounded in data

Future proof / future enable

- Vendor agnostic infrastructure
- Availability of data
- Portability of data

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