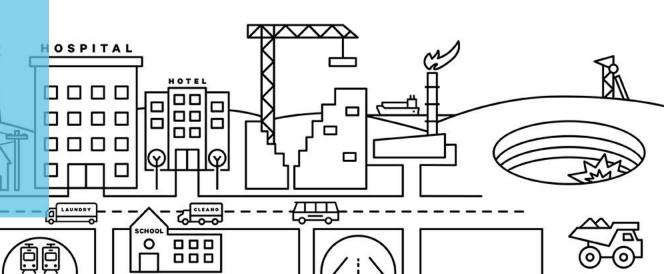
Digital Asset Visualisation and the opportunity to apply Data Science

Anthony Roe

Downer Mining Energy and Industrial

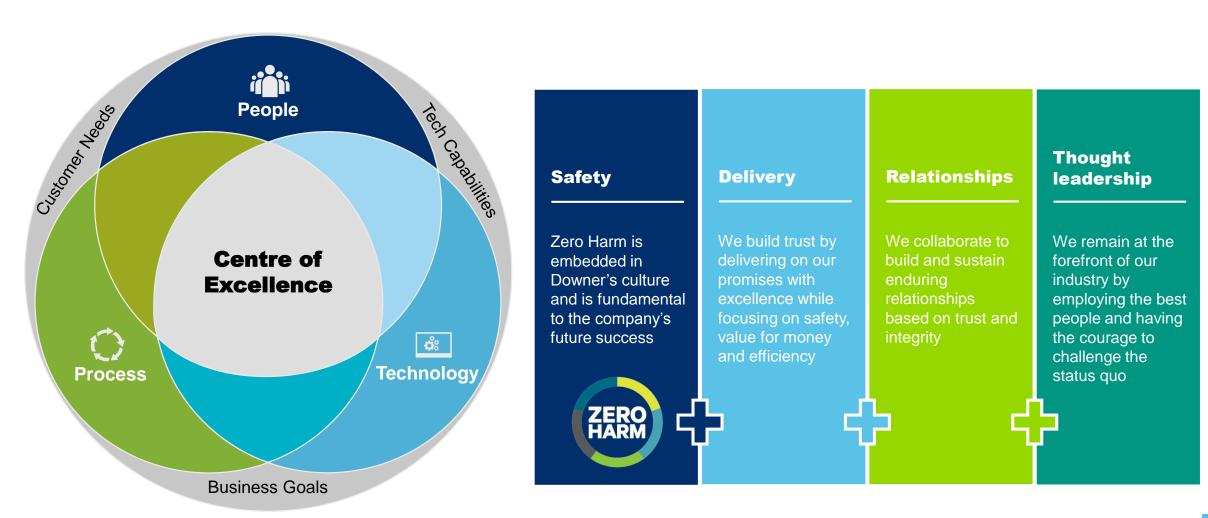




Agenda

- 1. The digital mission
- 2. The ecosystem
- 3. The discipline needed to operationalize successful innovations
- 4. DAVI and The Data Scientists

The digital mission! (Is all about Cultural Alignment)



Current portfolio of mega-trends in the acceleration program.



Mobile Industrial Software Applications

to streamline access of information and improve business operations.



Evolution of BIM

to deliver a Digital Asset Visualisation & Information (DAVI) system.



Data Science Artificial Intelligence

to gain insights and automate actions for asset maintenance and optimum performance.



UAV Systems

to improve survey operations and capabilities utilising autonomous fixed-wing and multirotor drones.



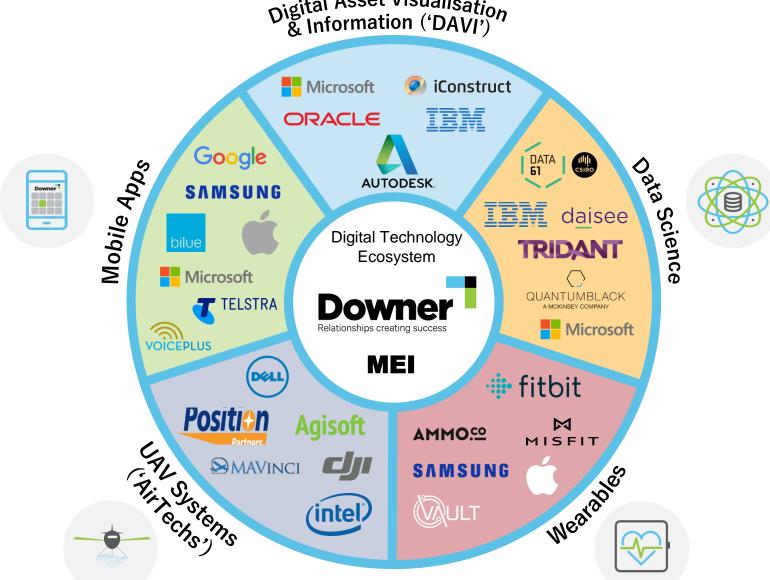
Wearables

to capture data and generate insights that better prevent workplace safety incidents.

The ecosystem of Collaboration



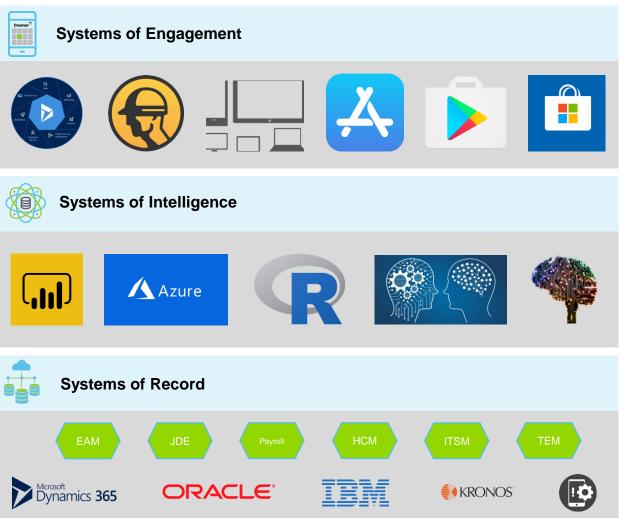
Digital Asset Visualisation & Information ('DAVI')



Digital Technology Topography

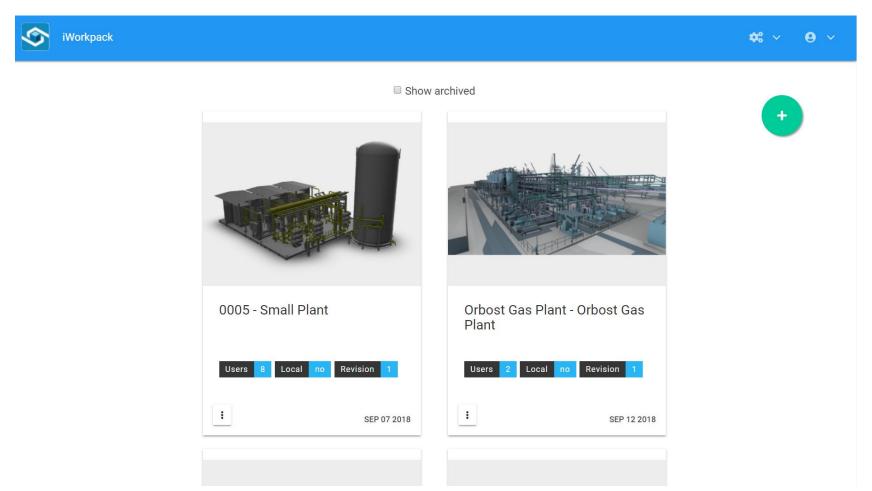








Digital Asset Visualisation and Information (DAVI) methodology

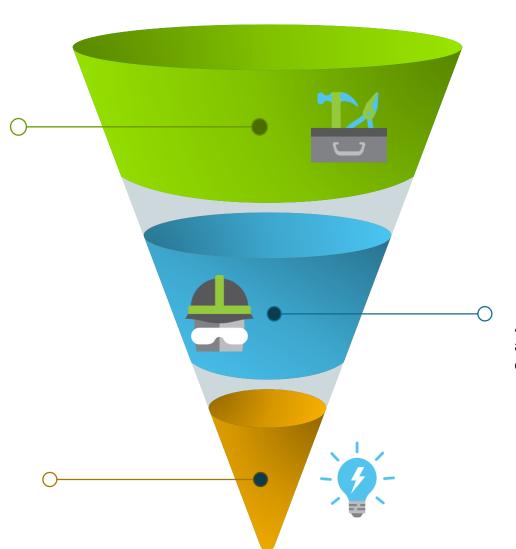


DAVI Lifecycle

3. ASSET SUSTAINMENT

Operation and maintenance of assets (LOD 500)

Achieved using advanced 3D visualisation of asset information, automated anomaly identification, work order management and optimisation of asset management strategy.



2. CONSTRUCTION

Construction of project and assets (LOD 300)

Achieved using advanced 3D visualisation of asset information, work pack management, clash detection and optimisation of project schedule.

1. ENGINEERING

Engineering of project and assets (LOD 100)

Achieved using advanced 3D visualisation of asset information and clash detection.

Digital Asset Visualisation & Information (DAVI)

Design

- Detailed Design
- Constructability Review
- IFC Documentation
- · Shop Detailing



Estimate

- Mitigate quantity risks by estimating from 3D Model BOQ
- Alignment of Detail Design and Candy Estimate Terminology
- · Completion of Baseline Schedule

Data Capture



Operate and Maintain

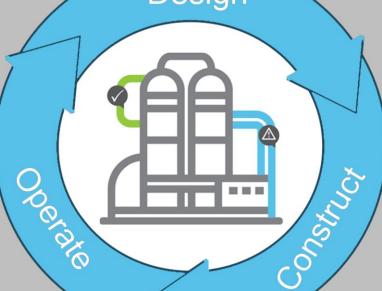
- Access historical construction documentation
- Embedded safety and maintenance procedures
- Generate inspection/maintenance requests
- Data Analytics for Intelligent maintenance forecasting



Asset Handover

- Development of a Digital MDR
- QA Documentation accessible from the 3D Model
- · As Built data accessible from the 3D Model

Design



System Integration

- Bill of Quantities direct from 3D model
- Upload of D&C
- Schedule linked to 3D Model timeliner



Supply Chain Management

- · Bill of Quantities direct from 3D model
- Procurement
- Fabrication
- Transport and Logistics

Planning, Reporting and Controlling

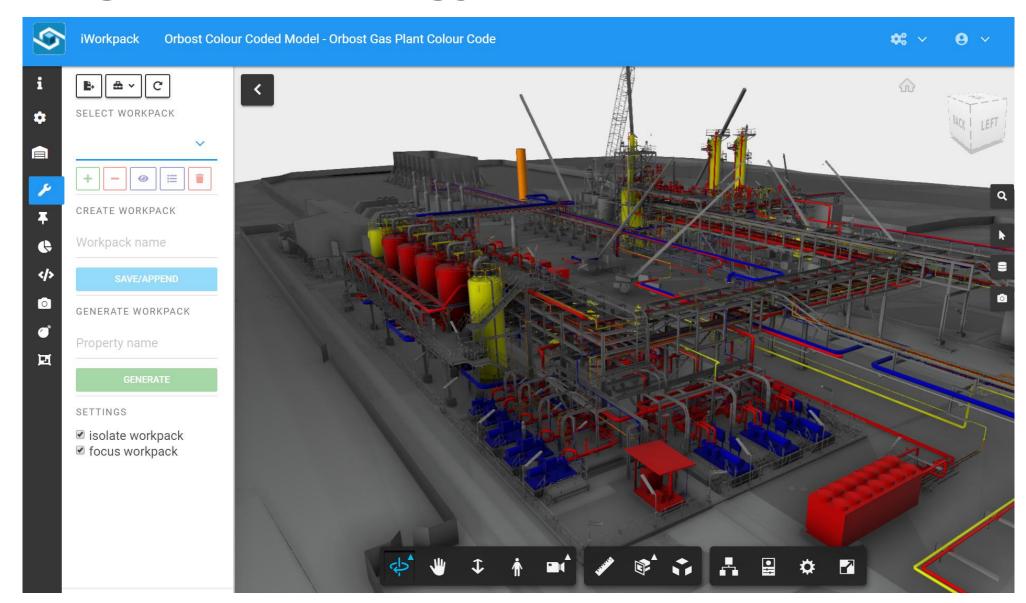
- · D&C Integration for in field progress claiming
- P6 Integration for construction timeliner sequencing
- 3D model visualisation of progress and productivity

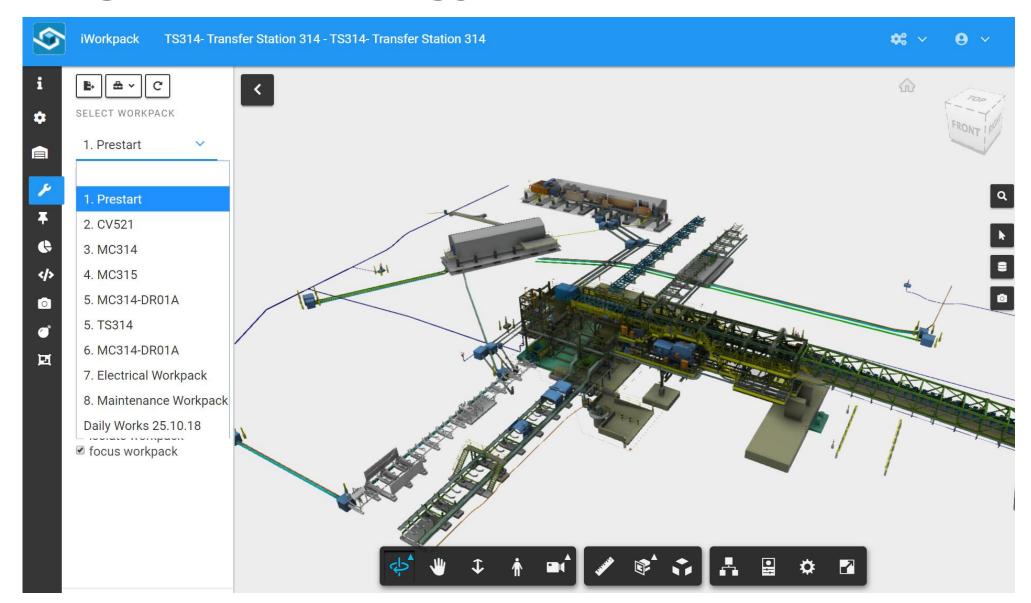


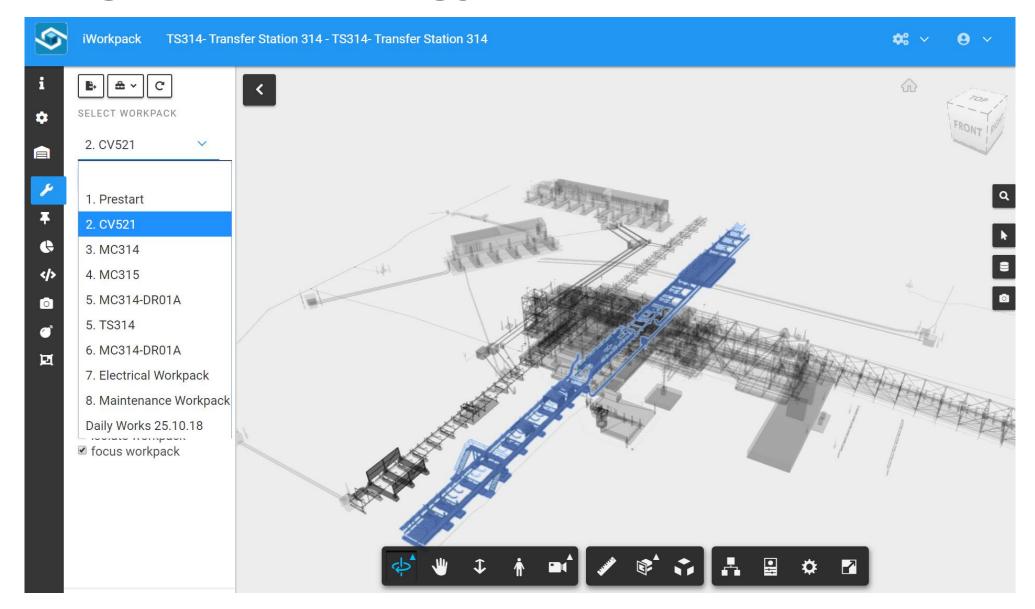
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Construction Execution

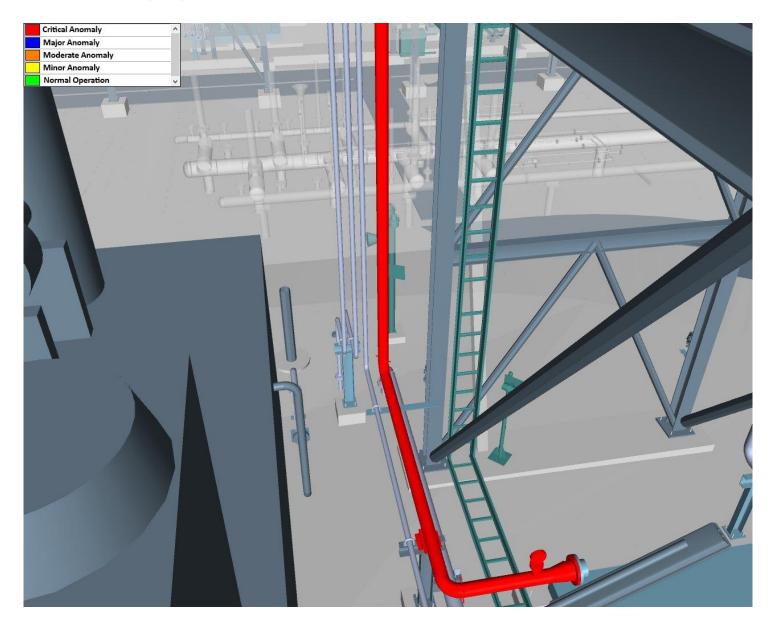
- · 3D model grouped to WBS Structure
- · 3D model grouped to Workpack
- MTO Directly from 3D Model
- Document lookup from Model Drawings, IOM's etc
- In field capture of change management
- In Field Redline Markup



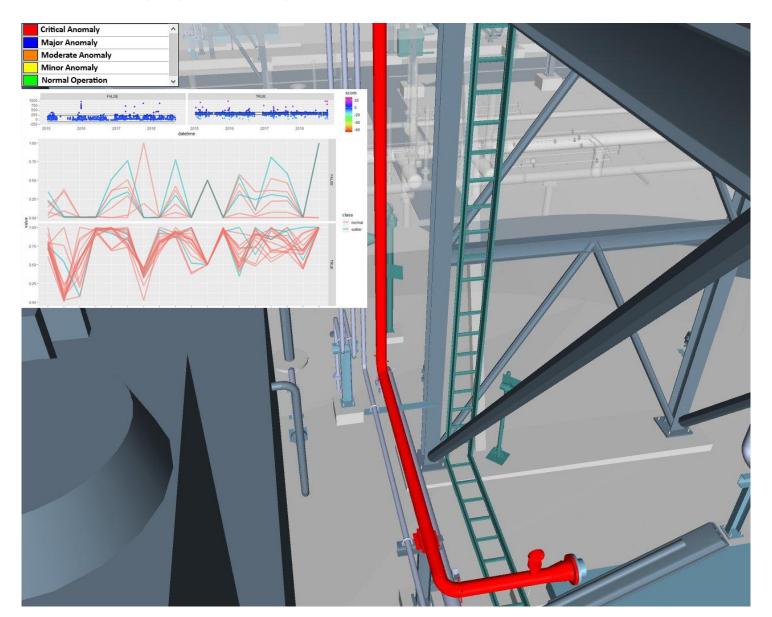




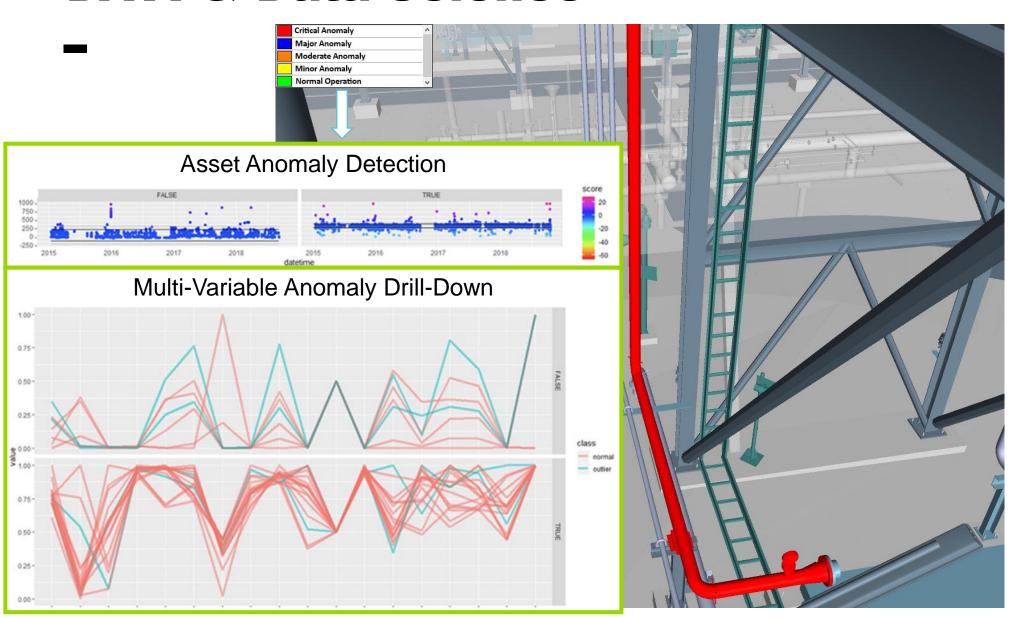
DAVI & Data Science



DAVI & Data Science



DAVI & Data Science



Thank you

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