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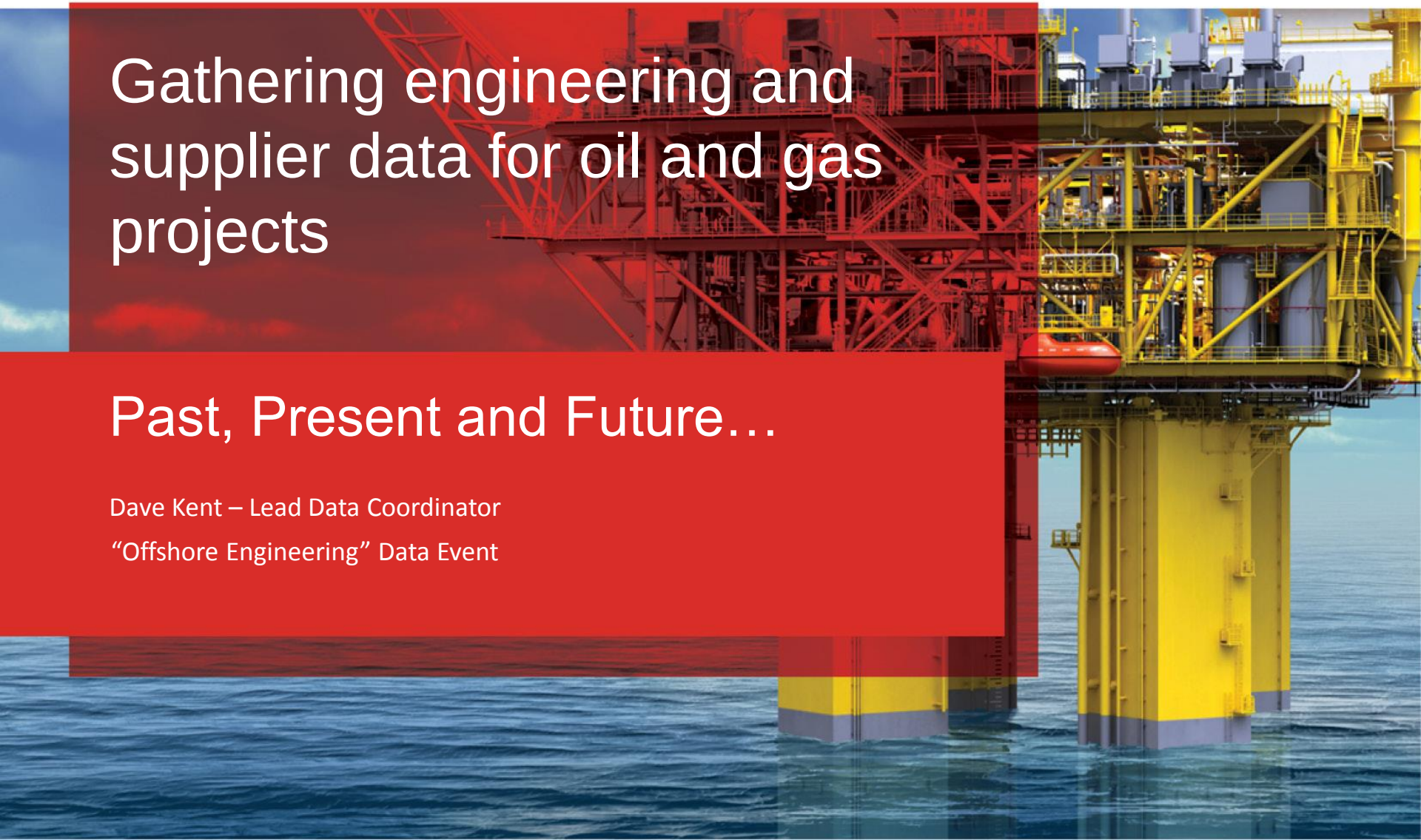
EcoNomics™

Gathering engineering and supplier data for oil and gas projects

Past, Present and Future…

Dave Kent – Lead Data Coordinator

"Offshore Engineering" Data Event



Welcome

Dave Kent – Lead Data Coordinator WorleyParsons IM group
Over 10 years experience based on IM/Data handover working for EPC Contractors on Oil and Gas projects in the UK & overseas.

WorleyParsons is a leading provider of professional services to the resources & energy sectors and complex process industries.

Our services cover the full asset spectrum both in size and lifecycle – from the creation of new assets to services that sustain and enhance operating assets.

From small Brownfield services contracts to mega Greenfield projects, WorleyParsons has the skills and technologies to address all challenges. WorleyParsons extensive experience ensures that we provide project solutions with the lowest total lifecycle cost while meeting each customer's specific requirements.

Agenda

1. Brief history of engineering & design
2. Project evolution
3. Data ownership and project & data lifecycle
4. Data collection scope and depth
5. Intelligent ways of gathering data
6. Why gather data this way?

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1. A brief history of engineering & design

- Paper drawing/document-centric working

Building an offshore platform involved a huge workforce producing mountains of technical drawings, schedules and datasheets.

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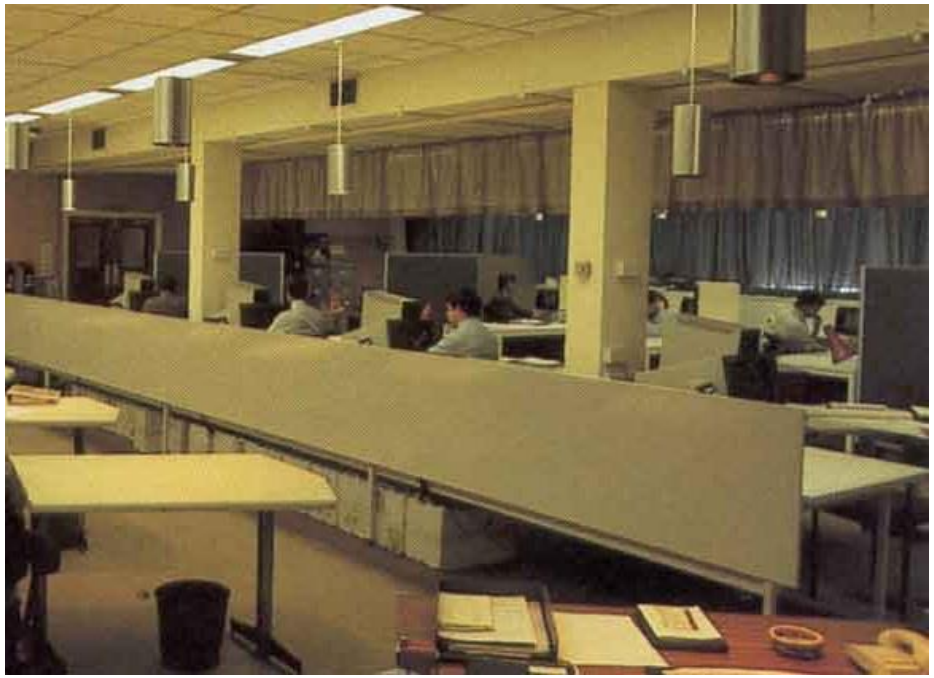
1.1 A brief history of engineering & design

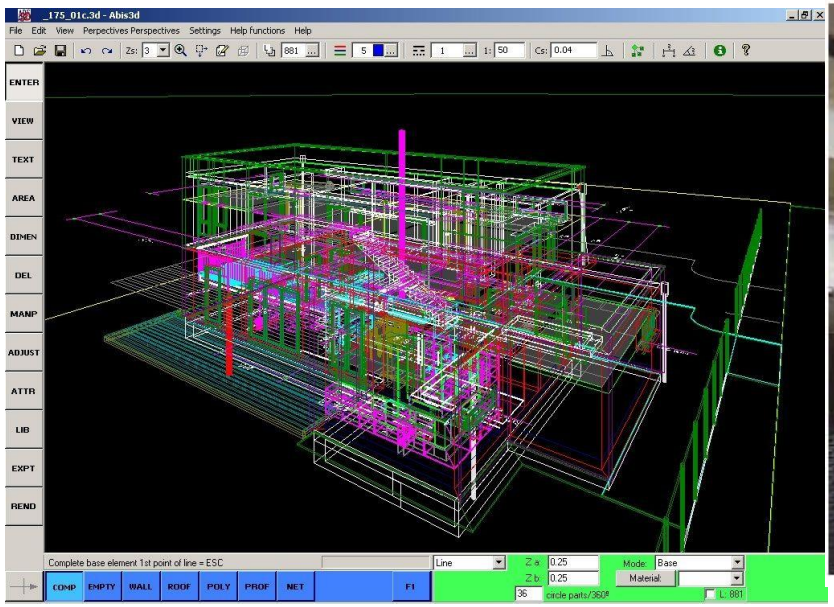
- 2D CAD/electronic document centric working



During the 1980s the first PC and UNIX based CAD (computer aided design/drawing) hardware and software packages were used by engineering companies to produce CAD drawings.

1.2 A brief history of engineering & design

- 3D CAD centric working & Intelligent discipline tools



Building and annotating 3D models allowed better visualisation and early identification of clashes. Intelligent discipline application tools allowed more efficient working & produces standard deliverables more easily.

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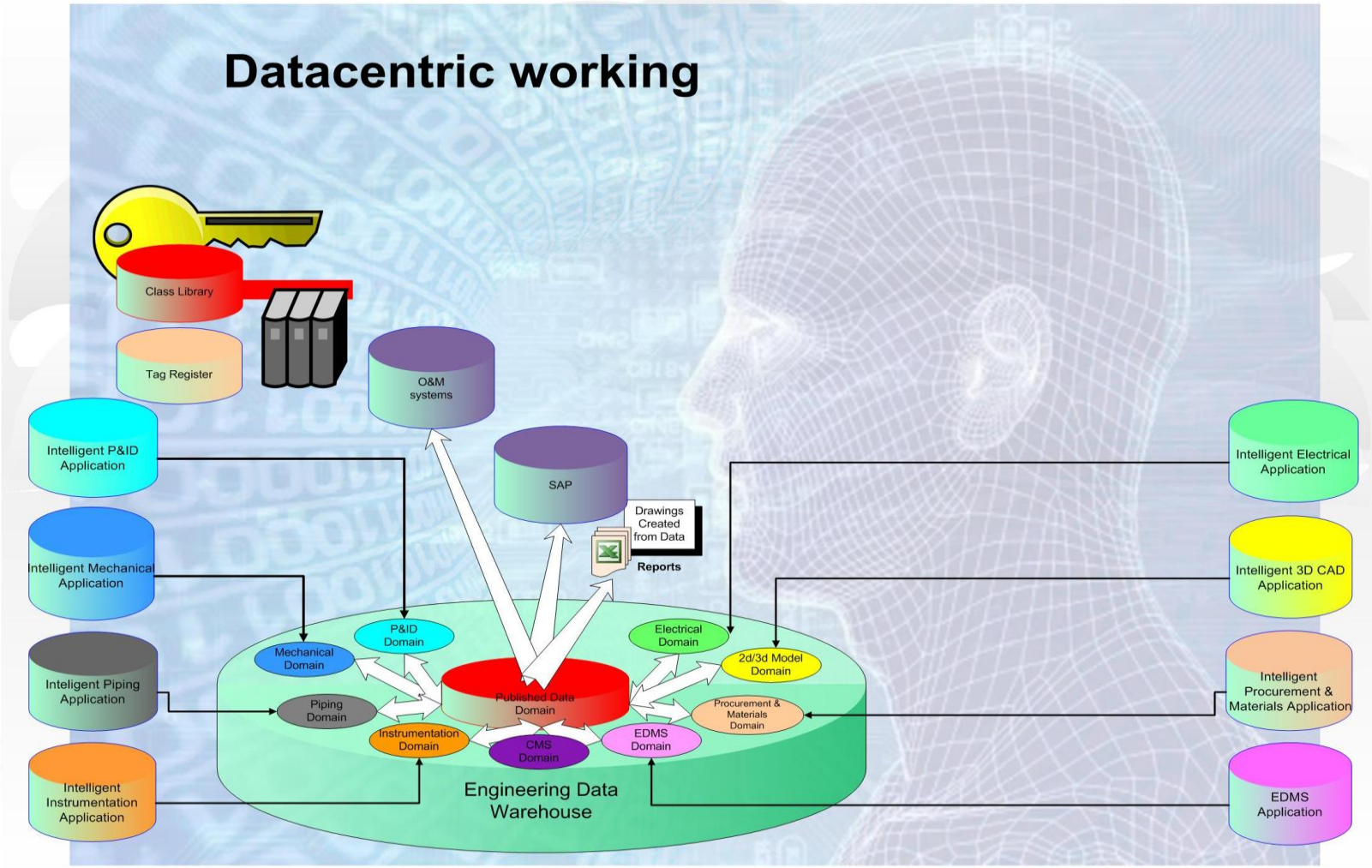
1.3 A brief history of engineering & design



Data collection & data relationships allows intelligent tools to empower users to view understand, interact and enrich the data.

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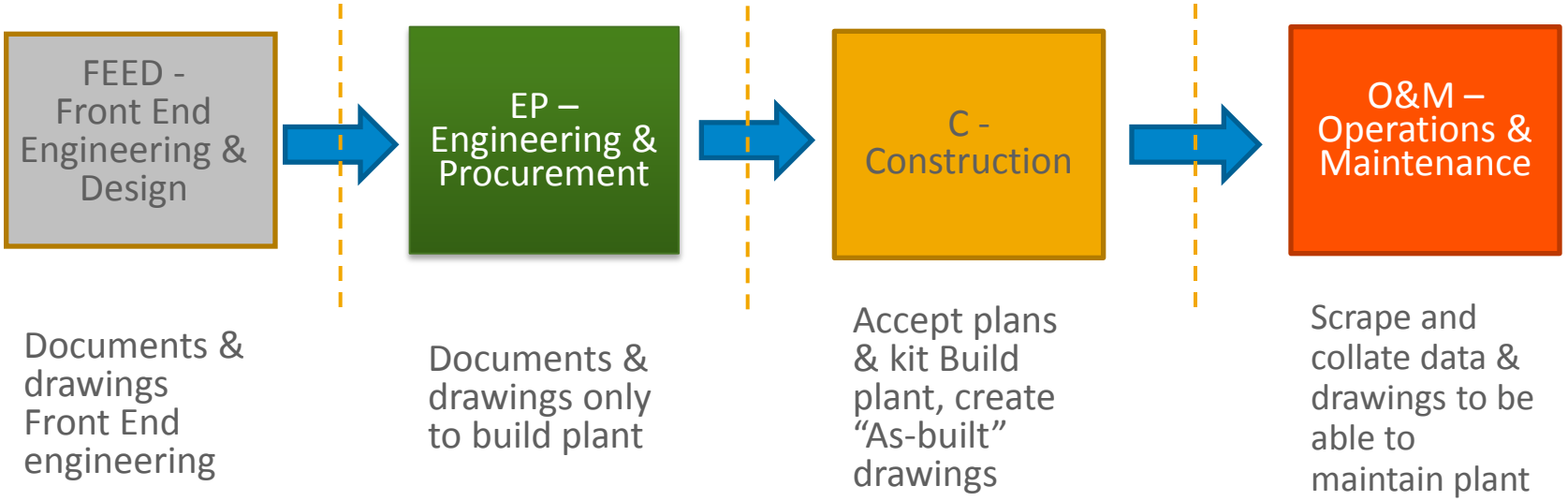
2. Project Evolution

Old model

SEGREGATED PHASES



Critical Data

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2.1 Project Evolution

New model – connected phases for the whole lifecycle

1 Identify

- Conceptual design
- Business model development

2 Evaluate

- Pre-feasibility studies
- Cost estimating
- Contract planning

3 Define

- Feasibility studies
- Preliminary Engineering (FEED)
- Cost Estimating
- Execution planning

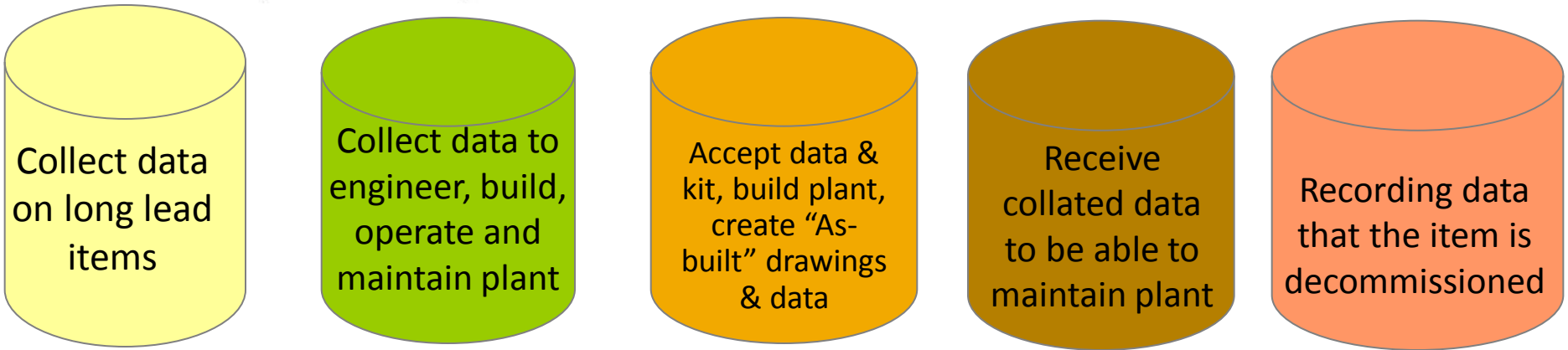
4 Execute

- Detailed Engineering
- EPCM
- PMC

5 Operate

- Brownfield projects
- Portfolio delivery
- Asset management
- Business improvement
- Operations and maintenance support

Critical Data



2.3 Project Evolution

What is a class?

Parent class: Vehicle

Child or Sub-class:
Car

Attributes:
engine
Fuel
Manual/Automatic
number of wheels
number of seats etc

Child or Sub-class:
Bicycle

Attributes:
number of wheels
Number of seats: 1

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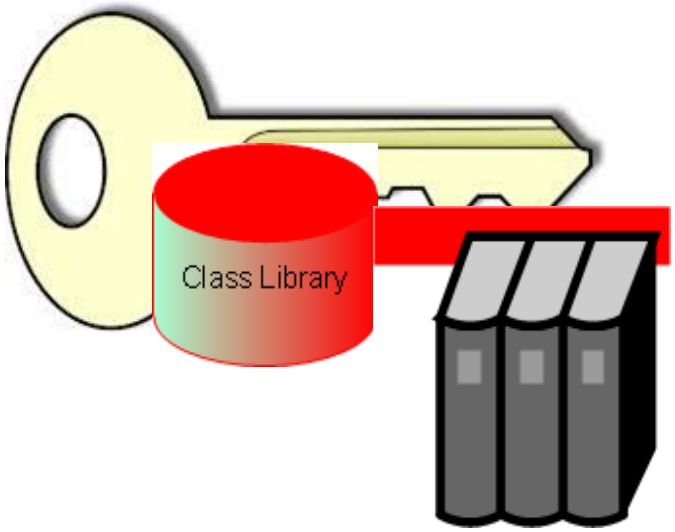
2.3 Project Evolution

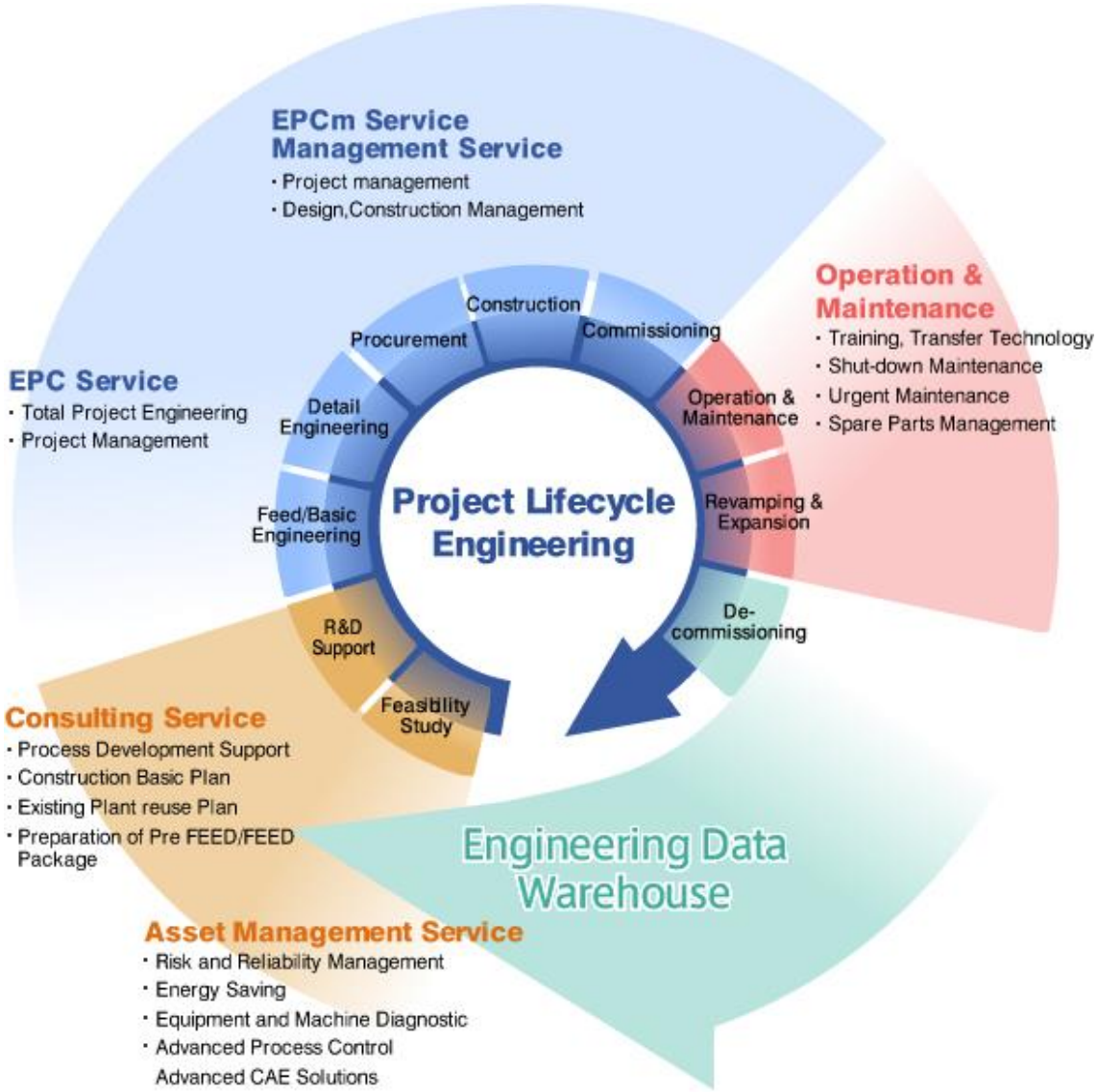
What is a class library?



What is a tag?

3. Data ownership and Project & Data Life-cycle

3.1 Project and data lifecycle



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4. Data Collection Scope & Depth

Project Initiation

Bird's eye view before getting into detail

Perform a Risk Assessment

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R3–Ready Response Recovery

R3 SYSTEM

Evaluate scope early on

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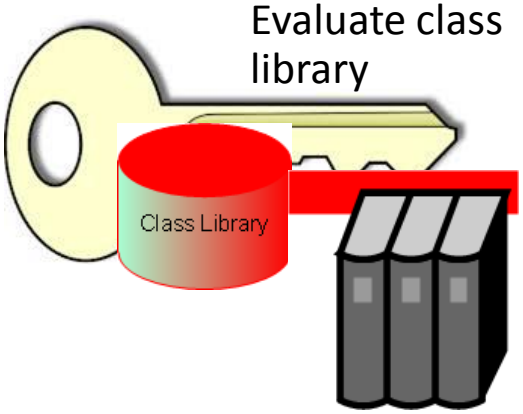
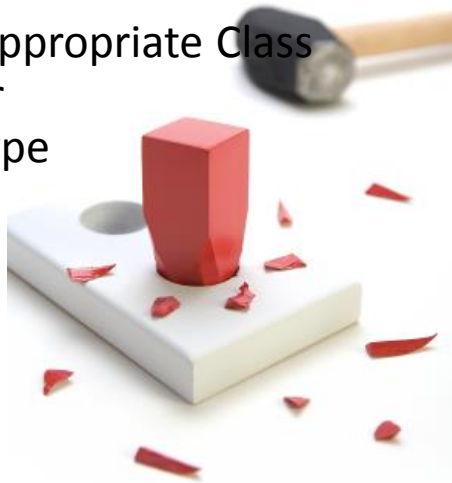
4.1 Data Collection Scope & Depth

Project Initiation

Evaluate class library



Choose Appropriate Class library for Project type



Review with Operations & Maintenance

Try to avoid re-work

Avoid increased costs

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4.2 Data Collection Scope & Depth

Reasons to uniquely identify an item with a tag number

In a plant there are uniquely identified items, information is required for to reference for:

- Specifying and ordering
- Construction and commissioning
- Spares & Servicing requirements.
- Connectivity requirements.
- Operating requirements.
- Safety requirements.
- Non-serviceable (but inspected items) items like cables & pipe-lines
- Tags within software / signalling Soft tags in DCS/PLC systems.

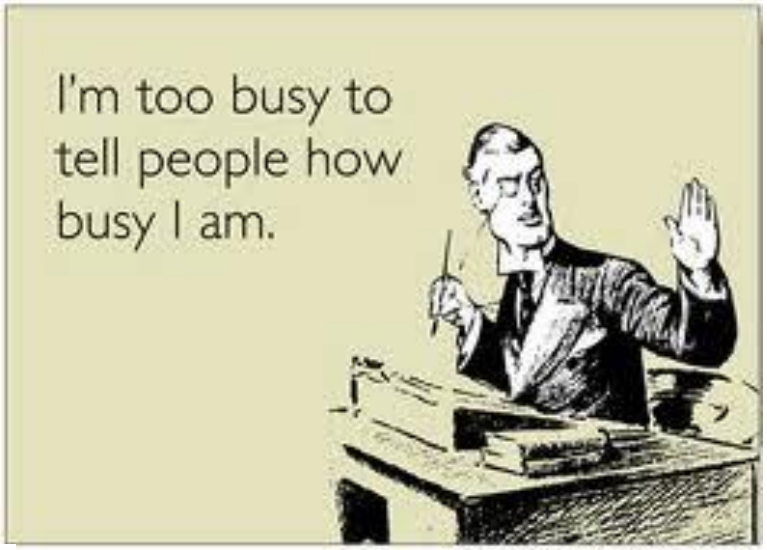
4.3 Data Collection Scope & Depth

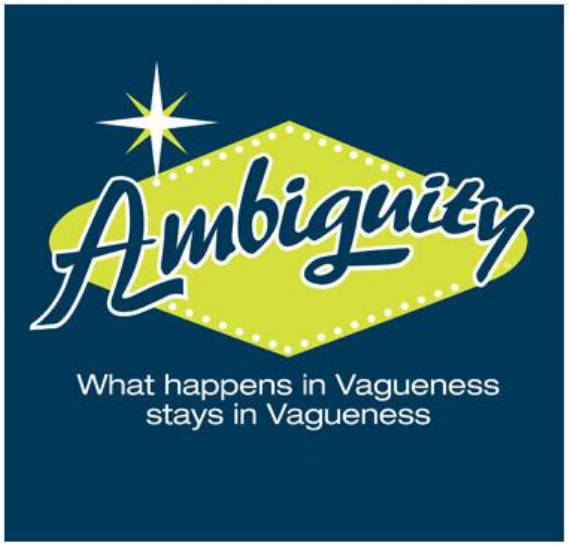
An example of unique identification

Distribution Board

4.4 Data Collection Scope & Depth

Potential pitfalls for data collection





4. Data Collection Scope & Depth

Training, engagement, alignment and whole team buy-in

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5. Intelligent ways of gathering data

Data Enrichment

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6. Why gathering data this way?

6.1 Compelling reasons to gather data this way

Increasingly stringent requirements

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Summary

Gathering engineering and supplier data for oil and gas projects

- Perform a “bird’s eye view” before getting entrenched in detail
- Perform a formal risk assessment
- Try to ensure you understand your client’s expectations at the beginning.
- Establish and evaluate scope and schedule early on
- Evaluate class library
- Ensure that class library is appropriate for project type
- Training, engagement, alignment and whole team buy-in
- Manage tag/asset register (ensure there is only one Master!)
- Collect data in a timely fashion
- Question traditional deliverables
- Check consistency and quality (consider using a 3rd Party CMS company)

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QUESTIONS?

Dave Kent – Lead Data Coordinator WorleyParsons IM group

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Information Management Consultancy Services
can help you to realise your concept…

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