



ENOWA. NEOM

BUILDING EAM DATA FROM THE 'GROUND UP'

A VALUE-DRIVEN APPROACH TO INTEGRATED UTILITY NETWORKS

13 JUNE 2024

THIS INFORMATION IS CONFIDENTIAL AND PRIVILEGED.

SESSION OVERVIEW

1. WHO IS ENOWA?
2. WHAT CHALLENGES DO WE FACE?
3. HOW ARE WE PREPARING OUR ASSET DATA FOR OPERATION?



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ENOWA Grid



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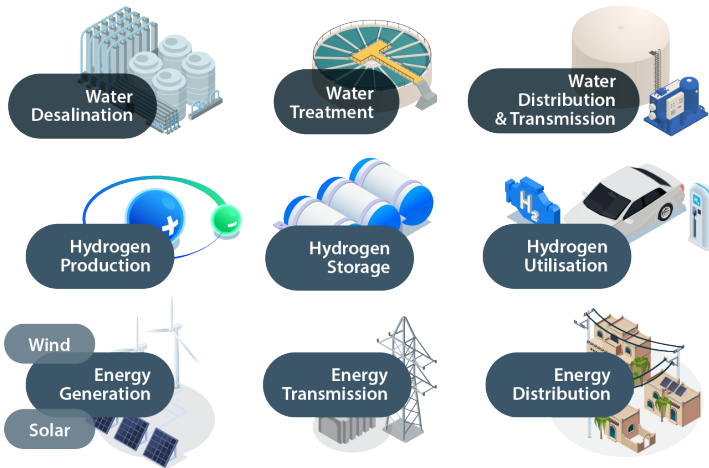


WHO IS ENOWA?

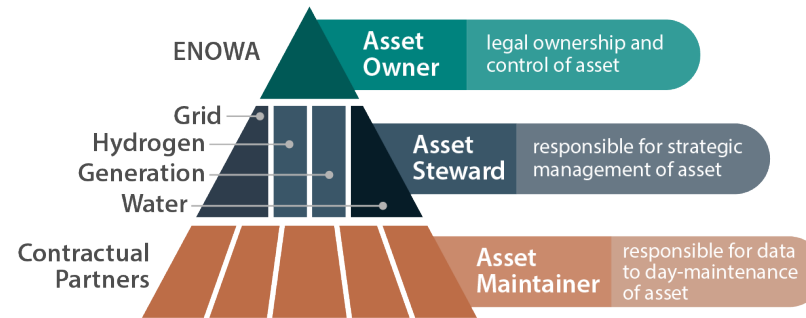
“PARTNERING WITH NATURE TO TRANSFORM AND REALIZE THE SUSTAINABLE POSSIBILITIES OF ENERGY AND WATER”

ENOWA Vision

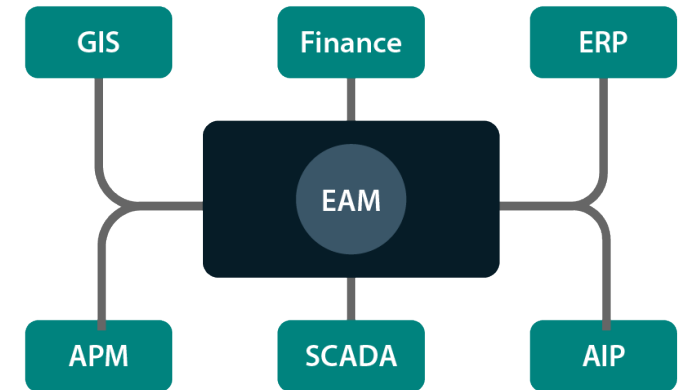
Asset base



Asset Management Model



Asset Management Technologies

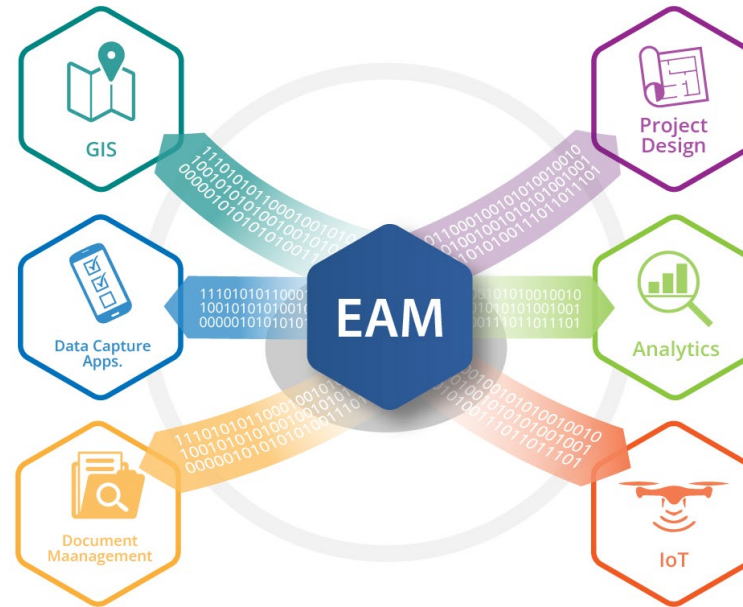


OUR TECHNOLOGY JOURNEY

Iterative development over time recognising business maturity needs.



Multiple technologies platforms launched in parallel

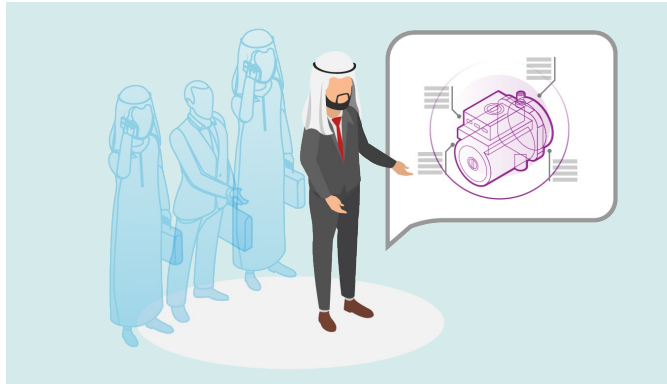


Technologies configured and data loaded

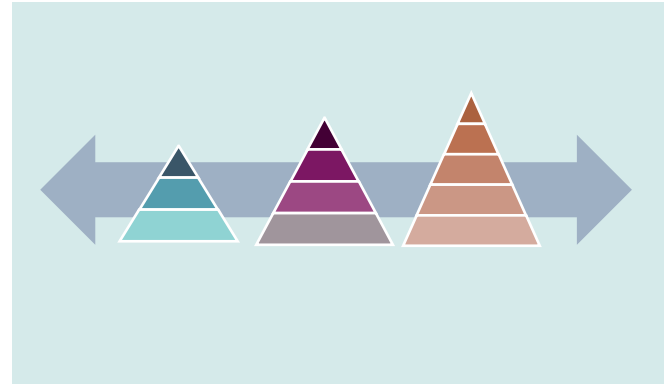


Integrated solutions and data available for operation

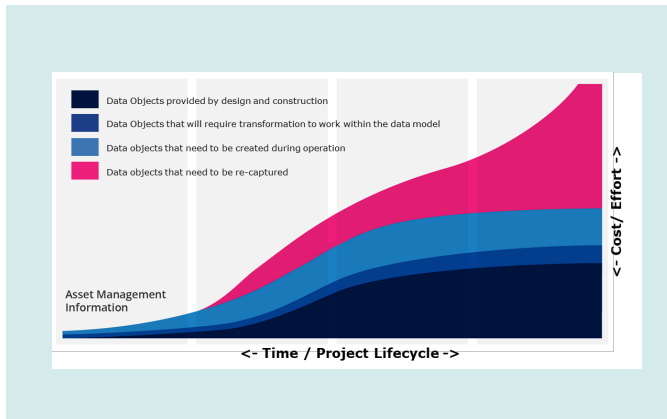
WHAT ARE OUR DATA CHALLENGES?



Develop data specifications from 'scratch'



Creating commonality across a diverse asset base



Capturing data before its "too late"



Developing our data management capability

HOW MANY ORGANISATIONS DEVELOP THEIR EAM DATA



WITHOUT UNDERSTANDING ITS VALUE BEYOND “CMMS”

“ I ensure that work can be delivered on site effectively and safely



The types of data I need

- Condition/Health (C1)
- Work Order (E1)
- Hazards (A1)
- Safety Plans & Risk Assessment (A2)
- Possession / Access Plan (E4)
- Procedure & Work Instruction (I5)

Maintenance Execution

“ I conduct demand analysis to determine what capacity our infrastructure needs to provide going forward.



The types of data I need

- Condition/Health (C1)
- Work Order (E1)
- Asset Utilisation (M)
- Whole-life Cost & Performance Model (I1)
- Investment & Resource Plan (M)
- Strategies & Plans (I2)

Performance Management

“ I generate an optimised list of investments that to deliver our desired level of service.



The types of data I need

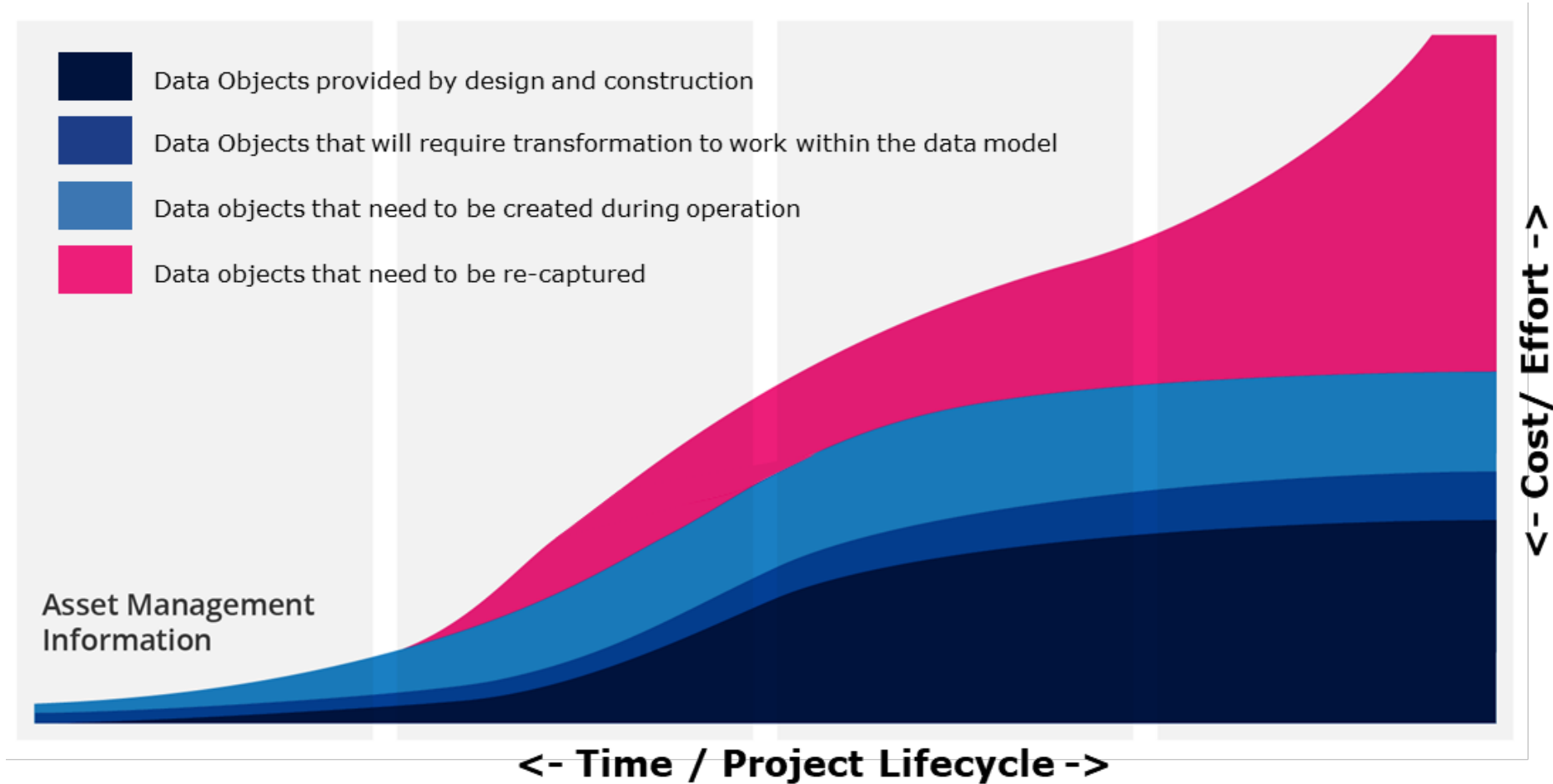
- Condition/Health (C1)
- Work Order (E1)
- Actual Schedule (E4)
- PRAMS (I3)
- Failures (I10)
- Defects (I11)

Asset Investment Planning

EAM DATA NEEDS TO SUPPORT BROADER ASSET MANAGEMENT



THE VALUE OF GETTING IT RIGHT FROM THE START



DEVELOPING OUR DATA FROM 'FIRST PRINCIPLES'



Understanding *what we want* and *what we need*

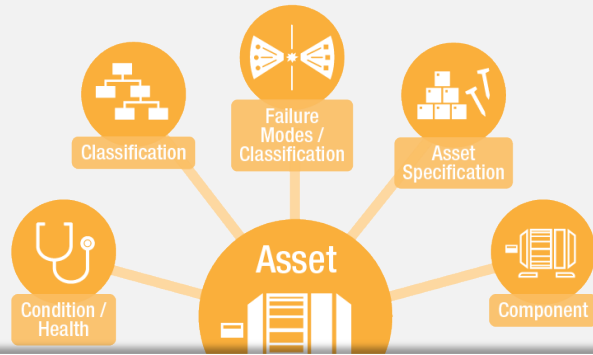
Developing our **Data Requirements**

Developing our **Data Structures**

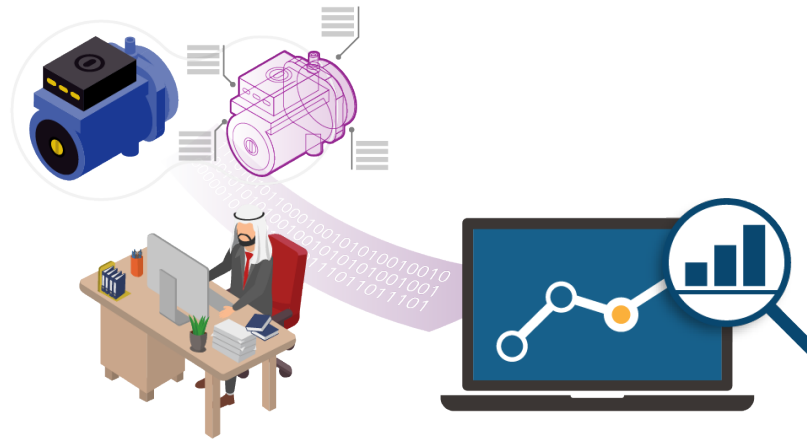
Building an EAM platform that **Delivers Value**

DEVELOPING OUR DATA REQUIREMENTS FROM 'FIRST PRINCIPLES'

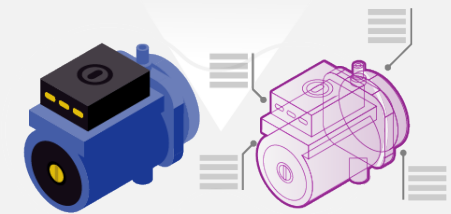
Building a common 'ENOWA-wide' asset data dictionary from industry best practice



Aligning information to known uses for asset management

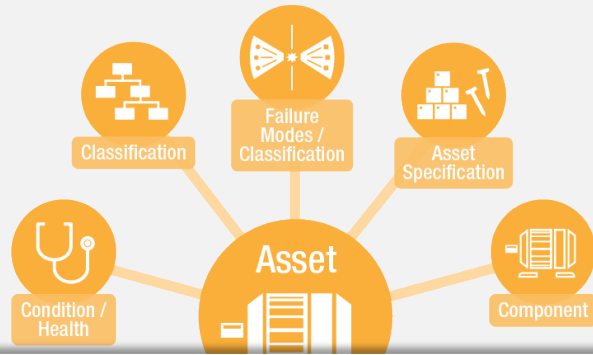


Determining whether the cost / benefit is justified – managing data as an asset

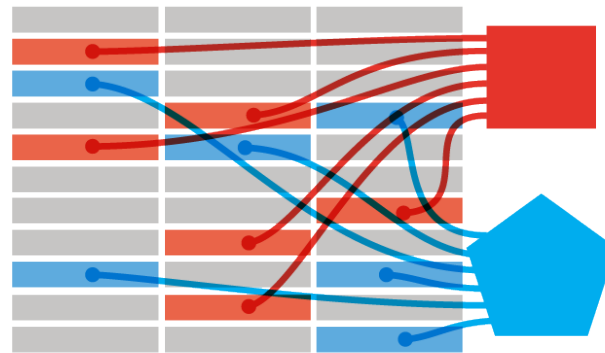


DEVELOPING OUR DATA STRUCTURES FROM 'FIRST PRINCIPLES'

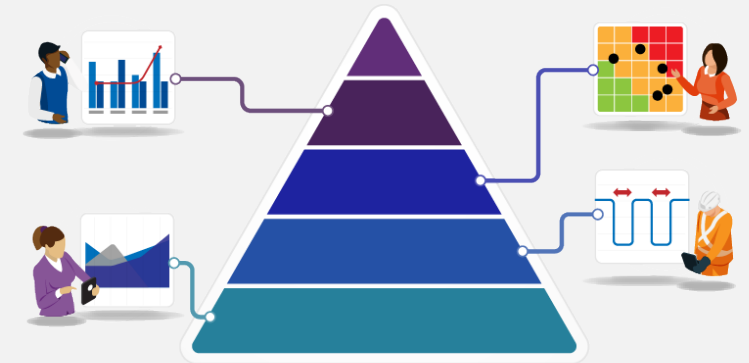
Building a common 'ENOWA-wide' asset data dictionary from industry best practice



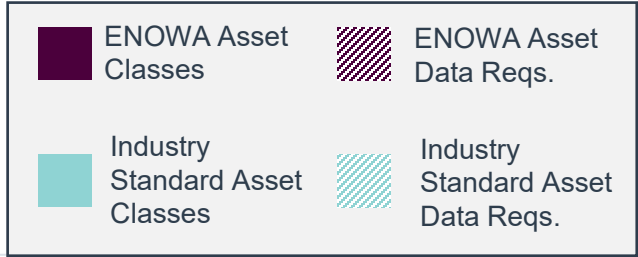
Mapping asset classes across disciplines to provide a single set of asset classes



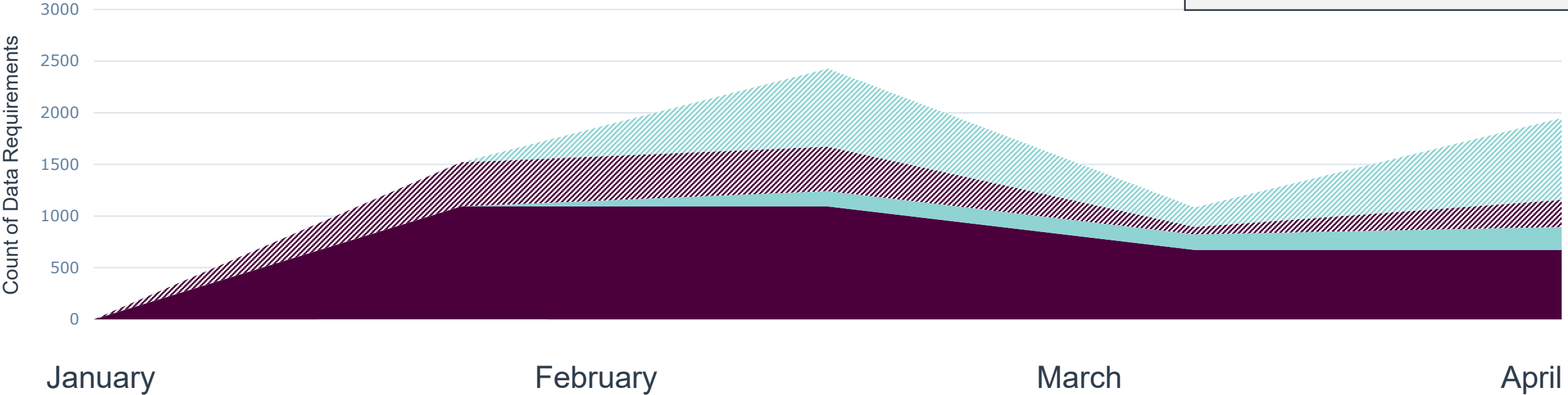
Establishing a common cross-discipline asset hierarchy



Key



OUR DATA REQUIREMENTS JOURNEY



What we wanted

What we discovered

What we needed to 'build'

Where we are today
See next page



WHERE IS OUR DATA TODAY?

880

Cross-sector asset classes

+80%

Equipment classes with properties

100%

Data supported by internal data governance

100%

Data presented with AM use case

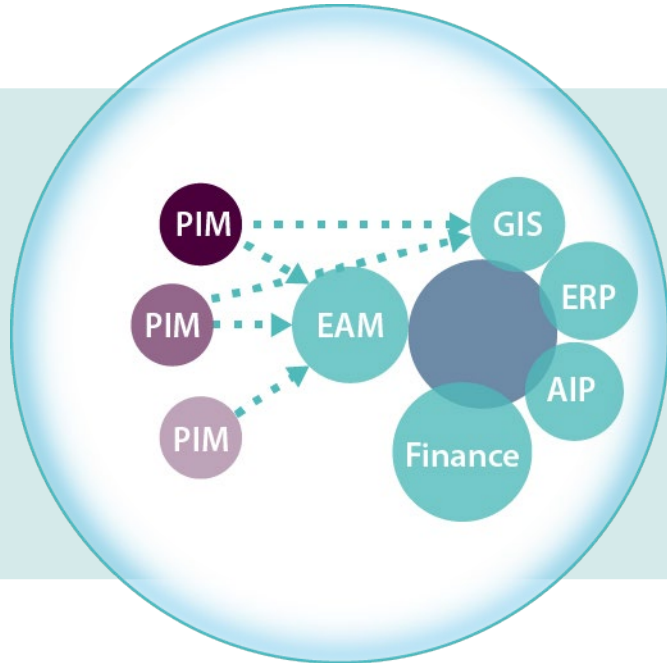
+600

Insights from industry standards

+71%

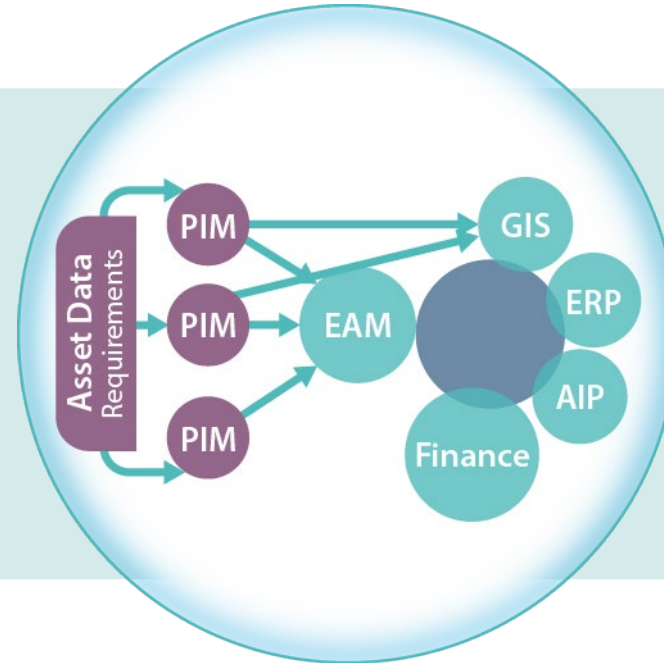
Picklists populated

ACCEPTING AND ASSURING DATA FROM HANDOVER



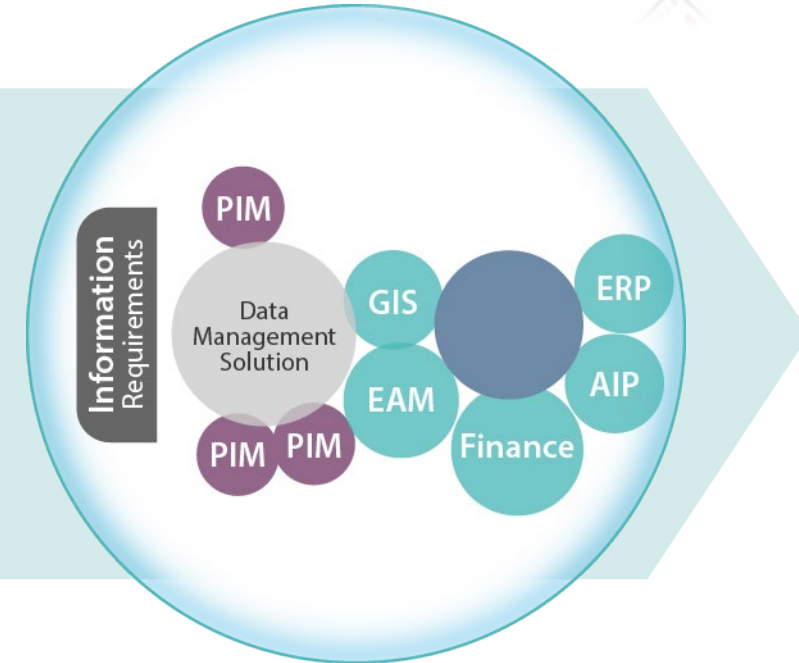
Where we were

- Each project has its own data requirements
- Unable to validate and assure incoming data
- Significant gaps in what data had been requested against what is needed



Where we are today

- Single set of asset data requirements
- Manual validation and assurance checks for incoming data
- Data manually transformed and uploaded into end-state systems



Where we will go

- Single set of information requirements (there's more than asset data!)
- Technology supports the validation and assurance of incoming data
- Data is automatically loaded into end-state systems

HOW WE ARE ADDRESSING OUR DATA CHALLENGES



CHALLENGE

APPROACH

OUTCOMES

- 1 Develop data specifications from 'scratch'
- 2 Creating commonality across a diverse asset base
- 3 Capturing our data before its "too late"
- 4 Developing our data management capability

Leverage best practice exemplars and industry standards

Adopt & combine industry recognized classifications and naming conventions

Requesting data from supply chain before handover

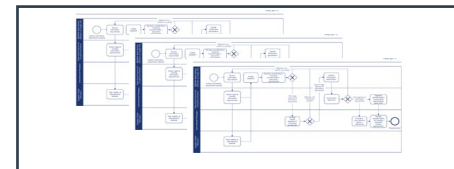
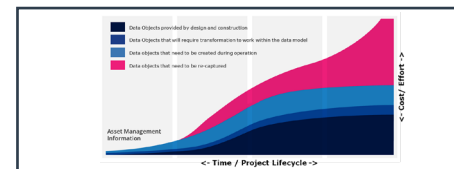
Adopt a non-invasive approach to data governance with just enough rules to support cooperation

Rapid development of asset data requirements

Common classifications to support integration

Getting the right data at the right time

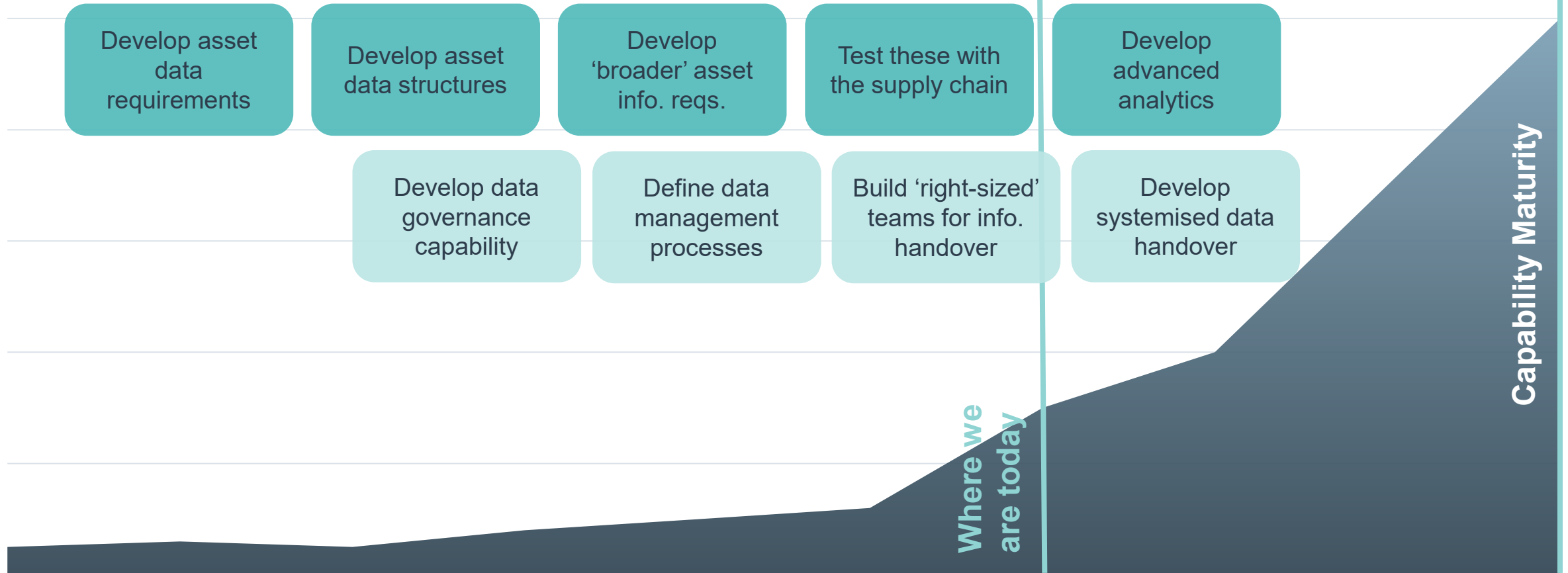
Scalable processes with automation in mind



Our continued journey to building our EAM Data



Manage information to ensure it delivers value for the business



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