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How project controls can lay the foundations for real digital transformation

#realdigitaltransformation

Hello, nice to meet you

David Nash

CEO

Stephen Herd

Data & Digital Lead

Will Woodman

Operations Lead

Manuel Arrabal

Planning & Controls Lead

Javier Zamorano

Planning & Controls Lead

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What we do

An integrated approach

DATA & DIGITAL

PROJECT PLANNING & CONTROLS

PROJECT & COMMERCIAL MANAGEMENT

Small Modular Reactor Programme

London Bridge Station

HS2 Euston Station Enabling Works

Series of Hyperscale Data Centres

HS2 Main Civil Works

Crossrail Tunnel Systemwide

Gigafactory

Northern Line Extension

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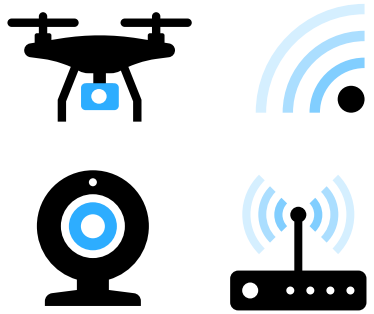
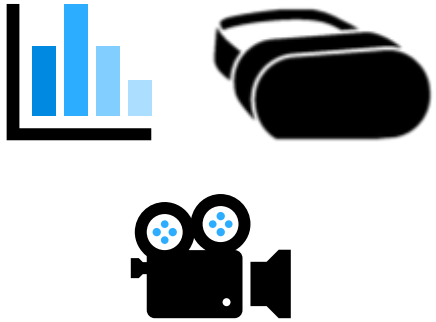
The focus of today's technology entering the market

Create/capture more data



Animated data & AR/VR



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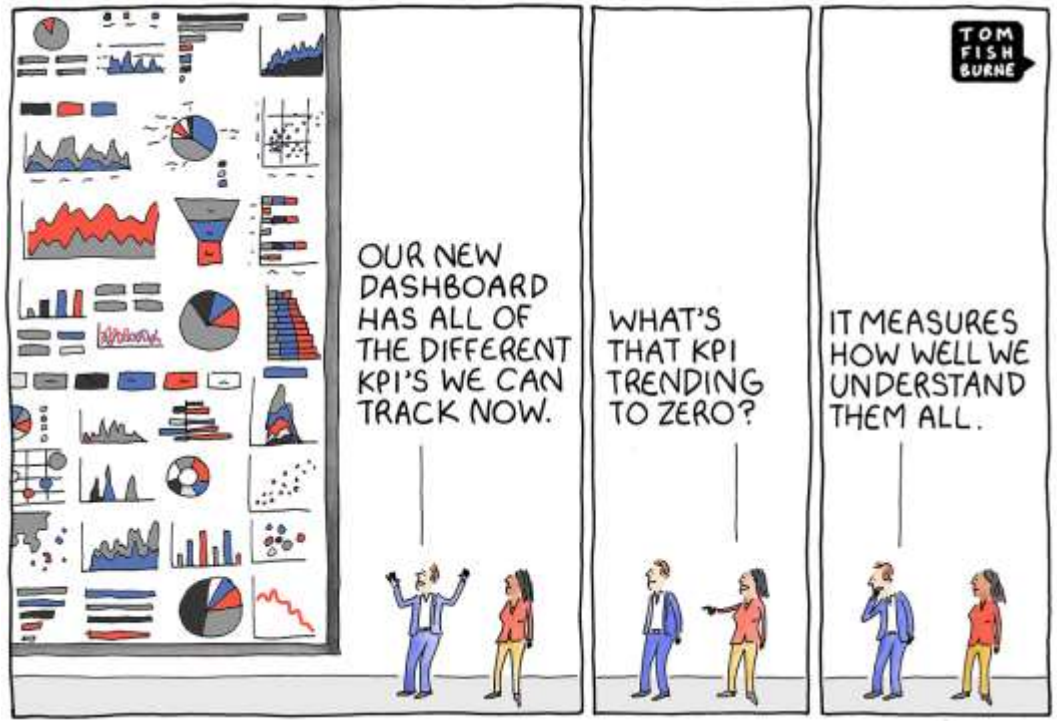
…but value of that data is being untapped

The main challenge to #realdigitaltransformation is not technology, it is cultural



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We generate value by looking at the bigger picture

Digital Transformation

- Assessment of existing procedures, software and tools
- Generating requirements and target model
- Writing specifications and procedures
- Project management of data & digital implementation engagements

BIM (ISO 19650)

- Setting up processes and procedures for implementation of BIM standards
- Assessing and advising on existing processes and procedures

Digital Engineering & Construction

- Set up of digital data capture using 3rd party software
- Software selection and configuration
- 4D/5D implementation

Data analytics & BI development

- Requirements gathering and definition
- Data pipelines design and build
- Power BI visual build
- Data analysis/insight generation

Software development

- Bespoke data apps
- Infrastructure deployment on Azure
- Data pipelines and integration, custom scripts etc.

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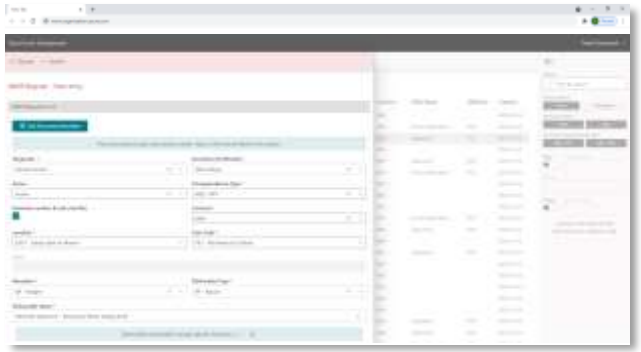
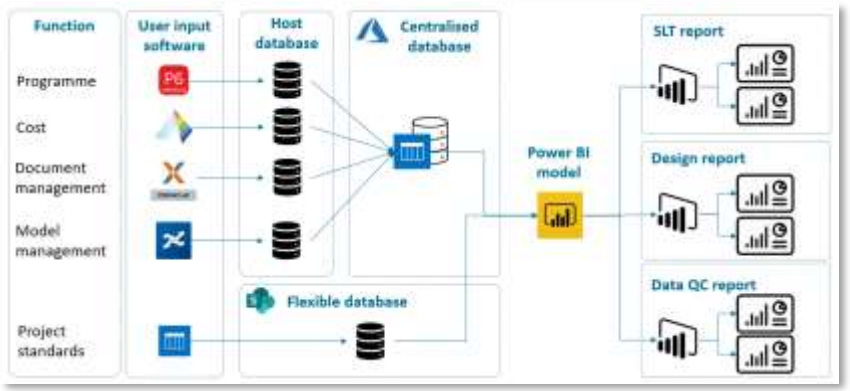
End-to-end data management

Data collection



Data pipeline design and build



Dashboard requirements and creation

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Digital maturity framework

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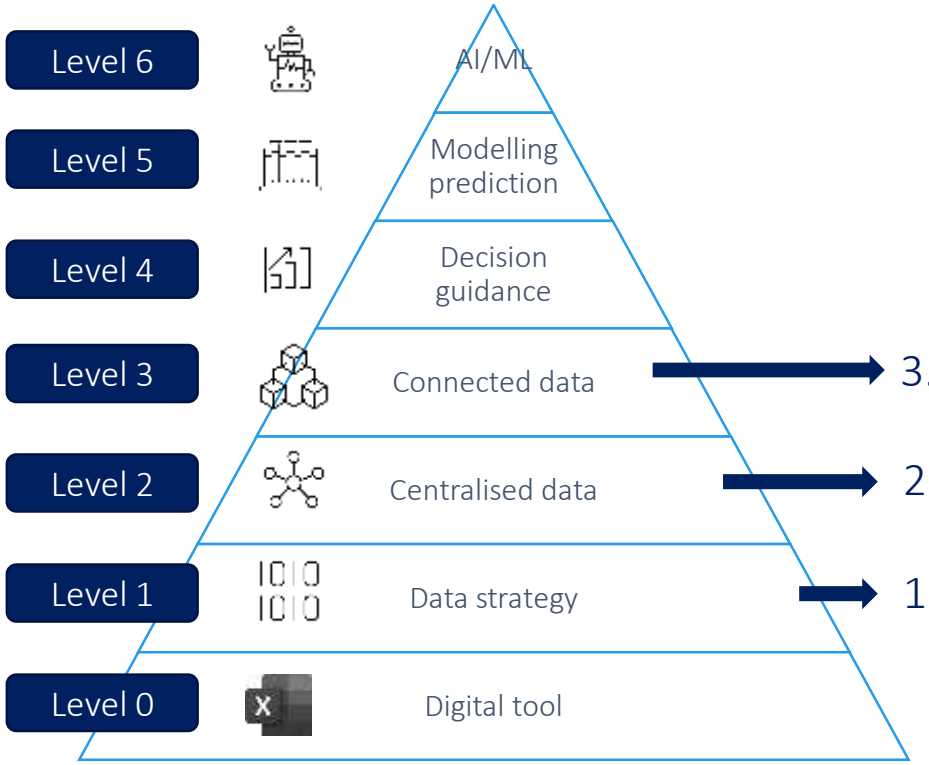
Project controls forms the foundation of digital transformation

Digital maturity levels



3. Team integration = data integration

2. Manage digitalisation as you would your project

1. Clear data strategy needs a clear project strategy

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What does level 6 look like?

	Financial trading	Typical construction project
Centralised data for decision making	★★★	★☆☆
Real time and historical data is digitised	★★★	☆☆☆
Identify trends	★★★	★☆☆
Suggested actions based on logic/analytics	★★★	☆☆☆
Automatically make decisions from data	★★★	☆☆☆
Machine logic	★★★	☆☆☆

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How Project Controls is foundational to #realdigitaltransformation

+

examples of what good looks like

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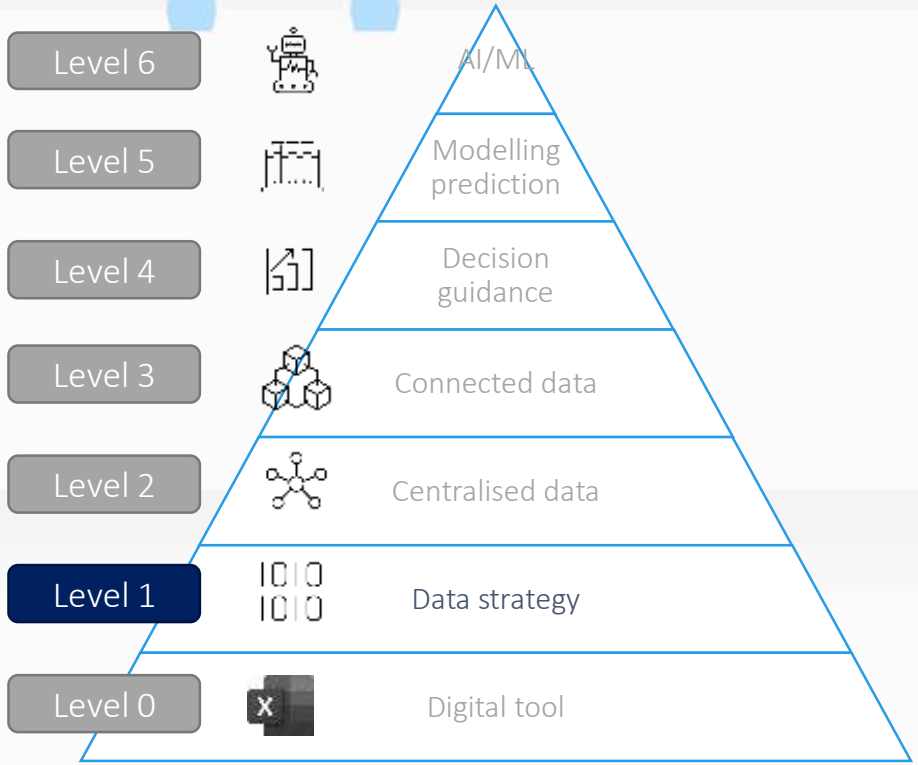
1. Clear data strategy needs a clear project strategy



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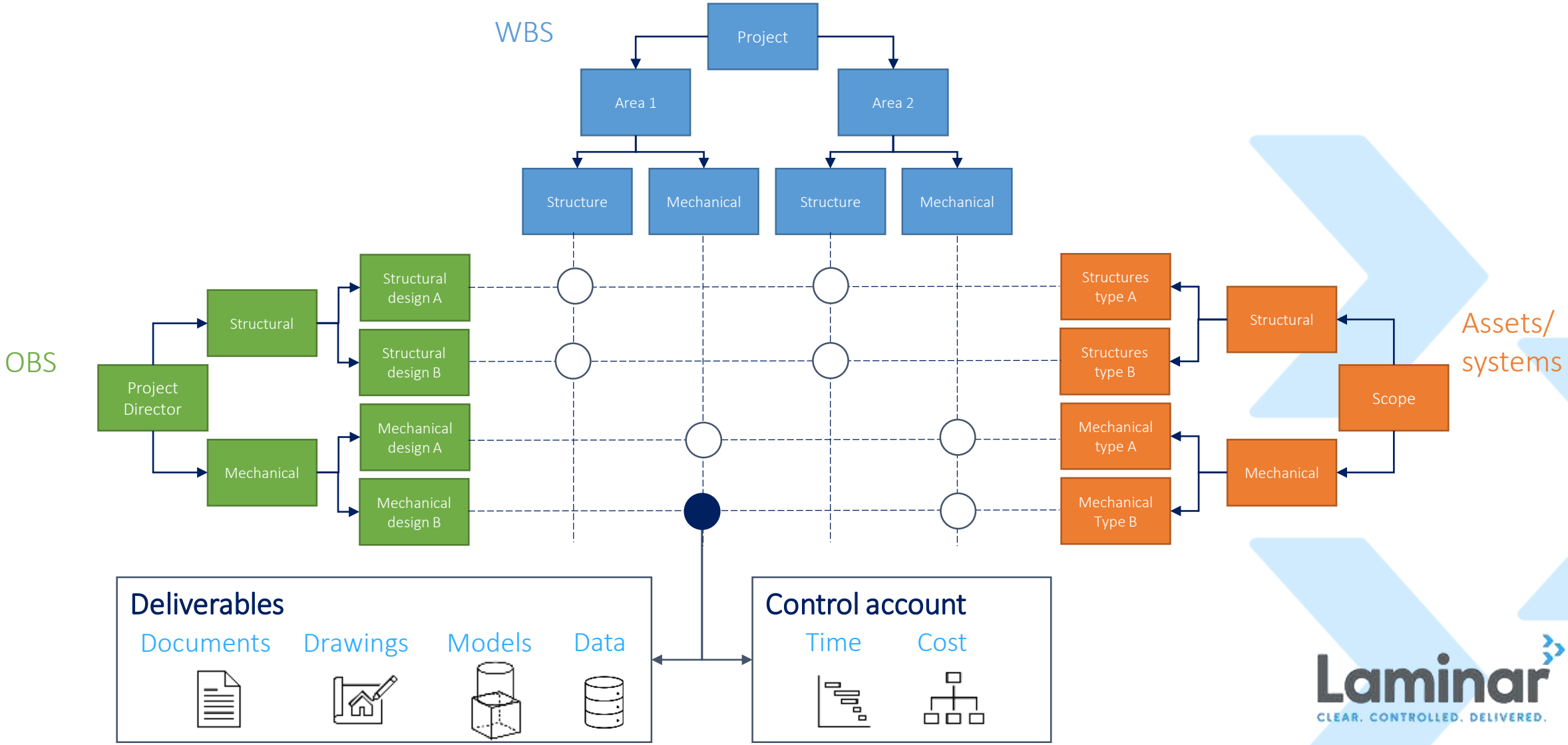

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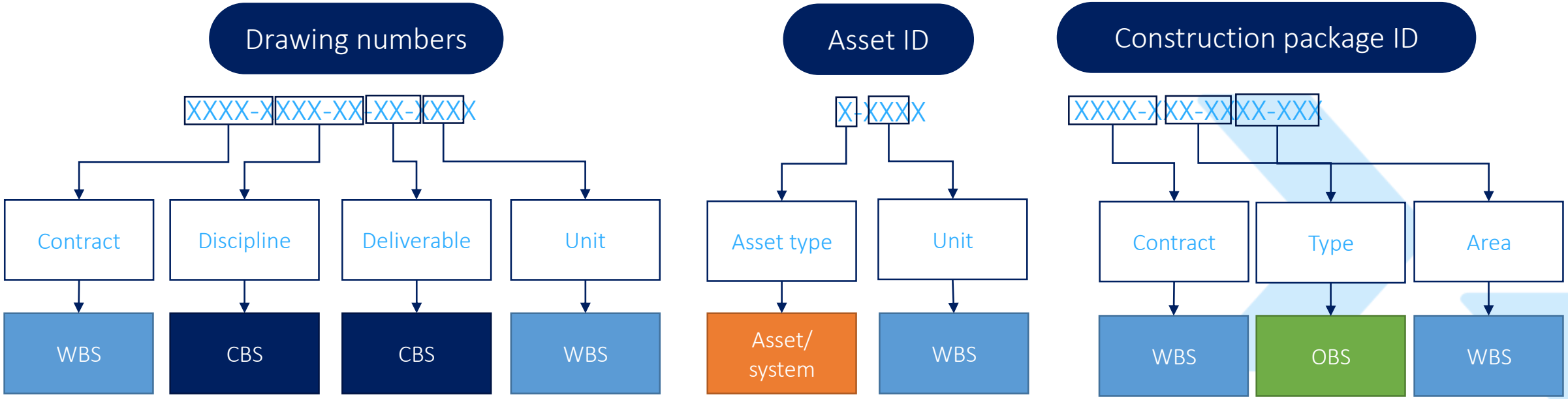
What good looks like: oil & gas example



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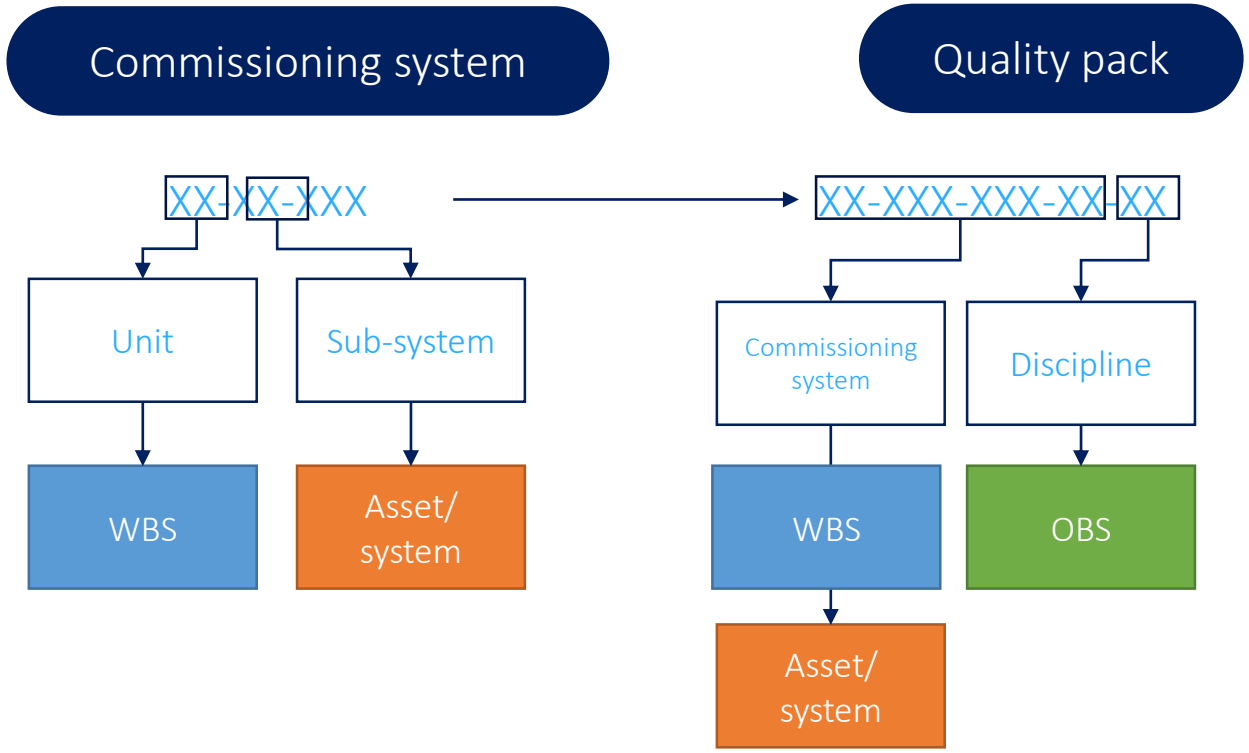

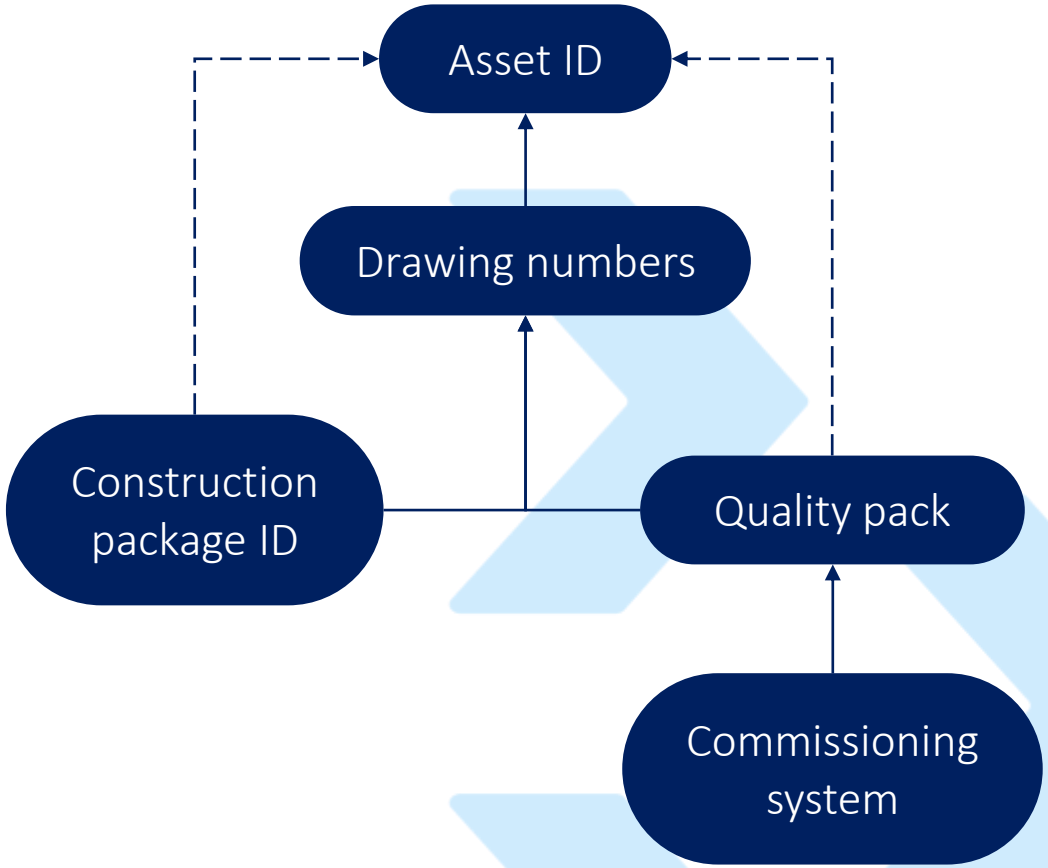

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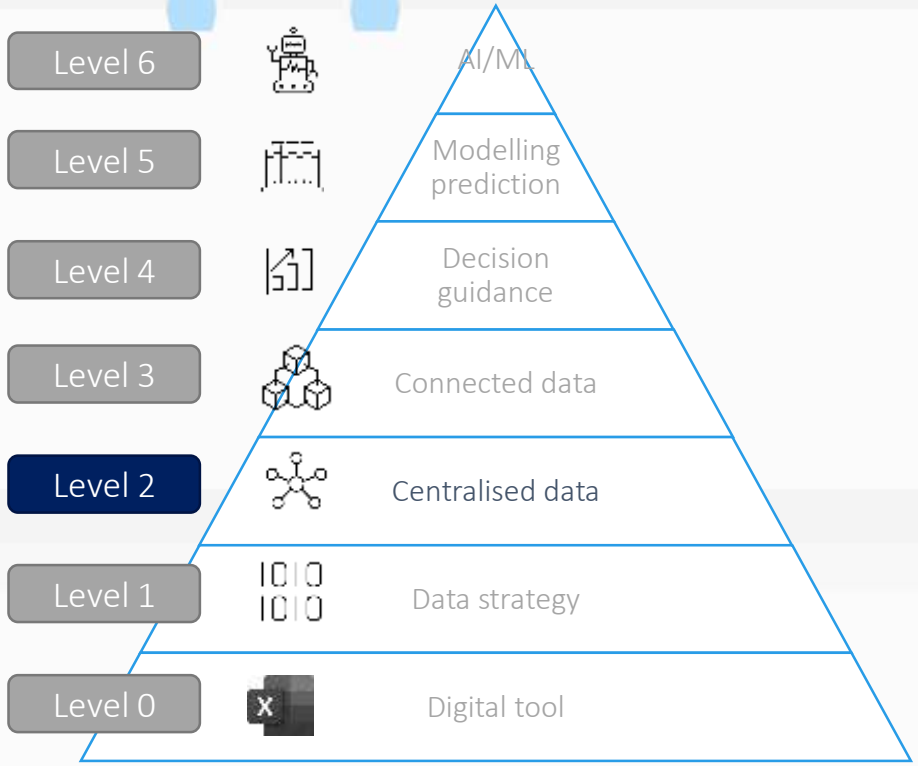
2. Plan, design THEN build



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2. Plan, design THEN build

Digital projects are like construction projects, you can’t start with a concrete pour. Late changes can also mean expensive consequences.

Project Execution Plan	Schedule/ programme	Design	Build	Use and monitor
Discovery phase, align stakeholders	Roadmap, prioritise	User requirements, technical requirements	Execute the design	Use and monitor if outcomes are as anticipated

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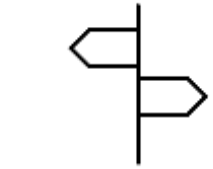
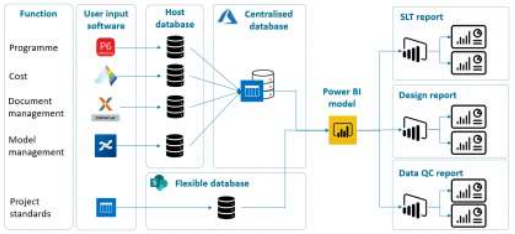
What good looks like: high speed rail example



Discovery report

- Context
- Processes
- Systems



Strategy

- Roadmap to full solution
- Don’t end up with fragmented solution

Priority

- Prioritise foundations and critical items

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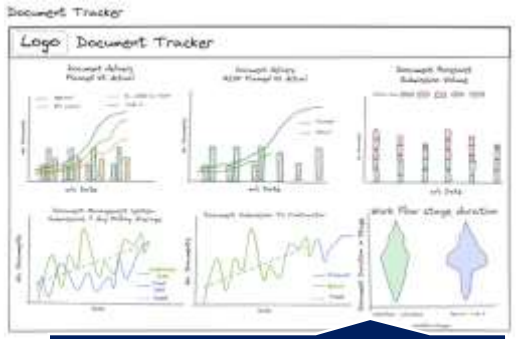
What good looks like: high speed rail example

Review existing reports and data



Front end design

Technical design

- Detailed requirements gathering ensured nothing forgotten
- Able to create plan from status quo to target

- Detailed definition of solution
- Quick to see a solution
- Easy to make changes
- Get all the questions answered before you build

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What good looks like: high speed rail example

Build backend

Build frontend

User guides

Power BI usage

- Build was MUCH quicker
- “Right first time” means comments are focused on improvements, not what doesn’t work

- Raising awareness to users of what’s available and how it can help them
- Monitoring usage statics of Power BI reports

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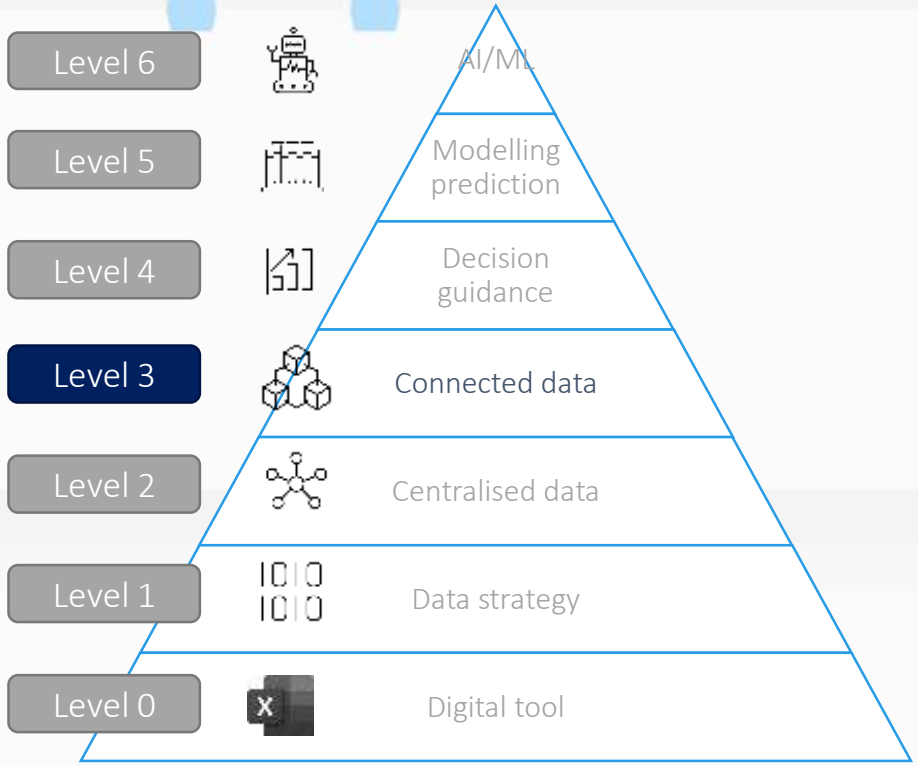
3. Team integration = data integration



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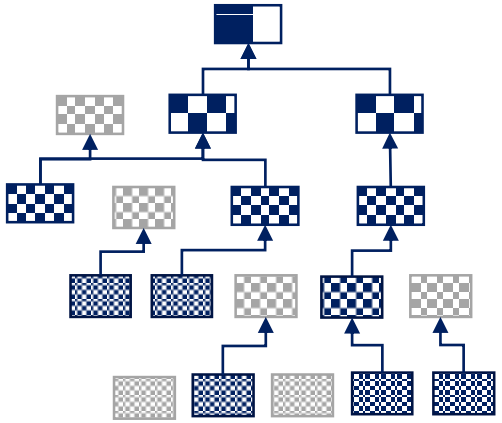
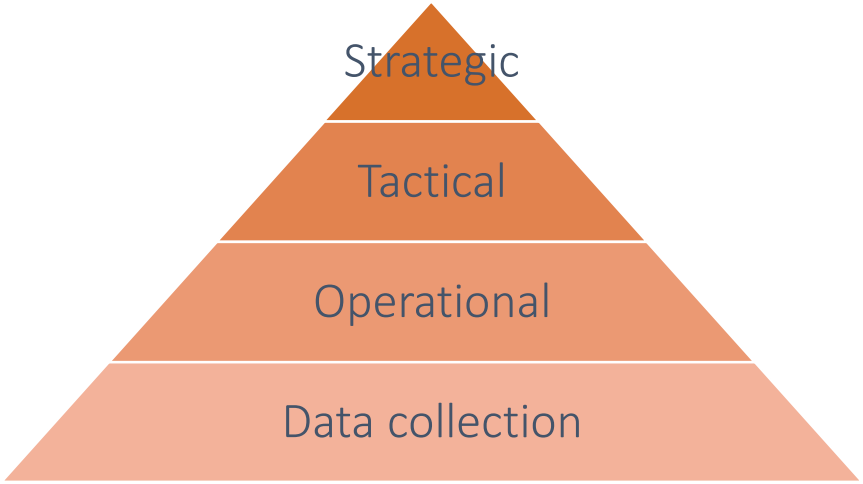
3. Team integration = data integration

Having an integrated team, means that information that one person creates can be used by others. No more copy/pasting and emailing data from one Excel to the next.

- ✓ Board reports aggregate the same data source as the individuals who create it.
- ✓ Management teams have the data available they need to make decisions
- ✓ People at the coal face know how they are performing and what they need to focus on

Status quo





Single data model

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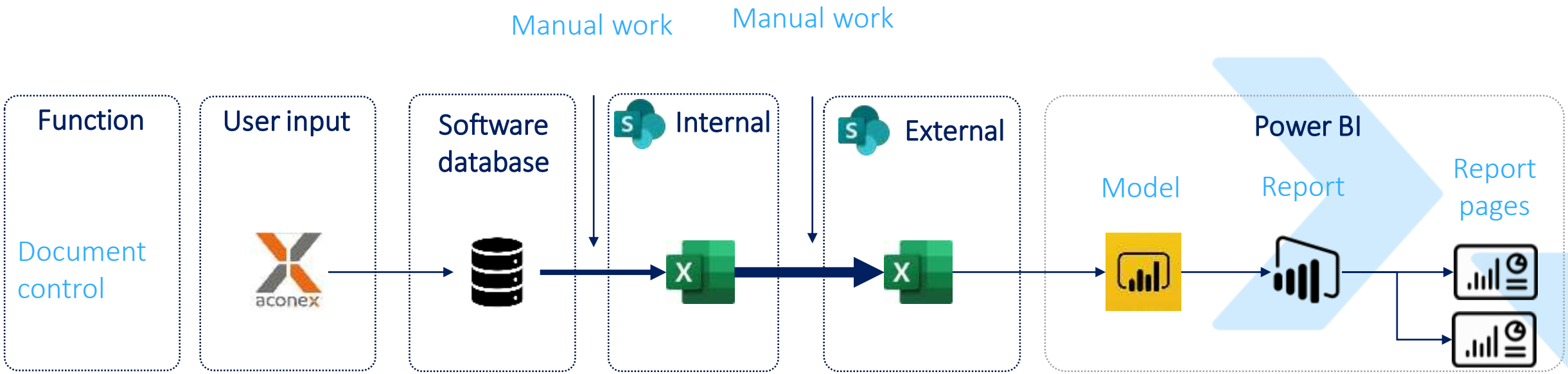
What good looks like: contractor example



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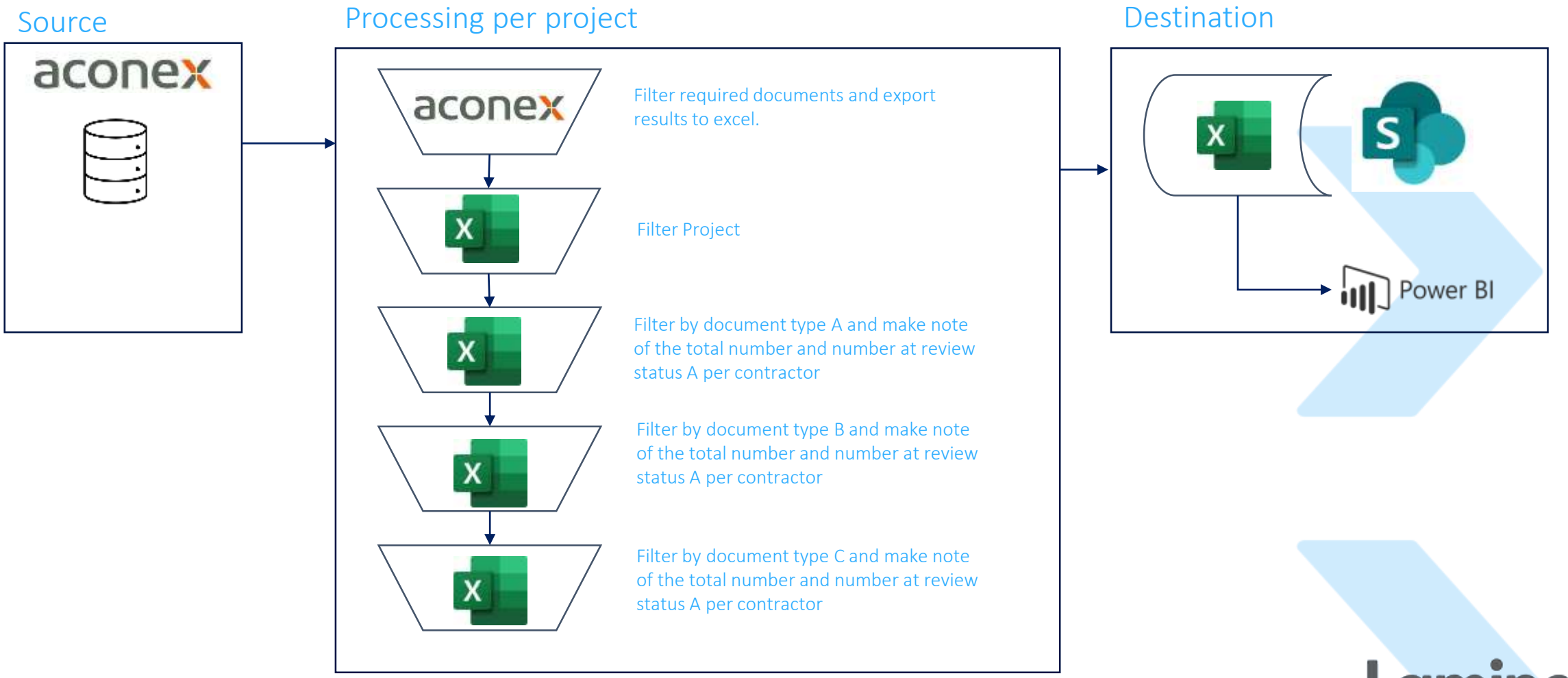

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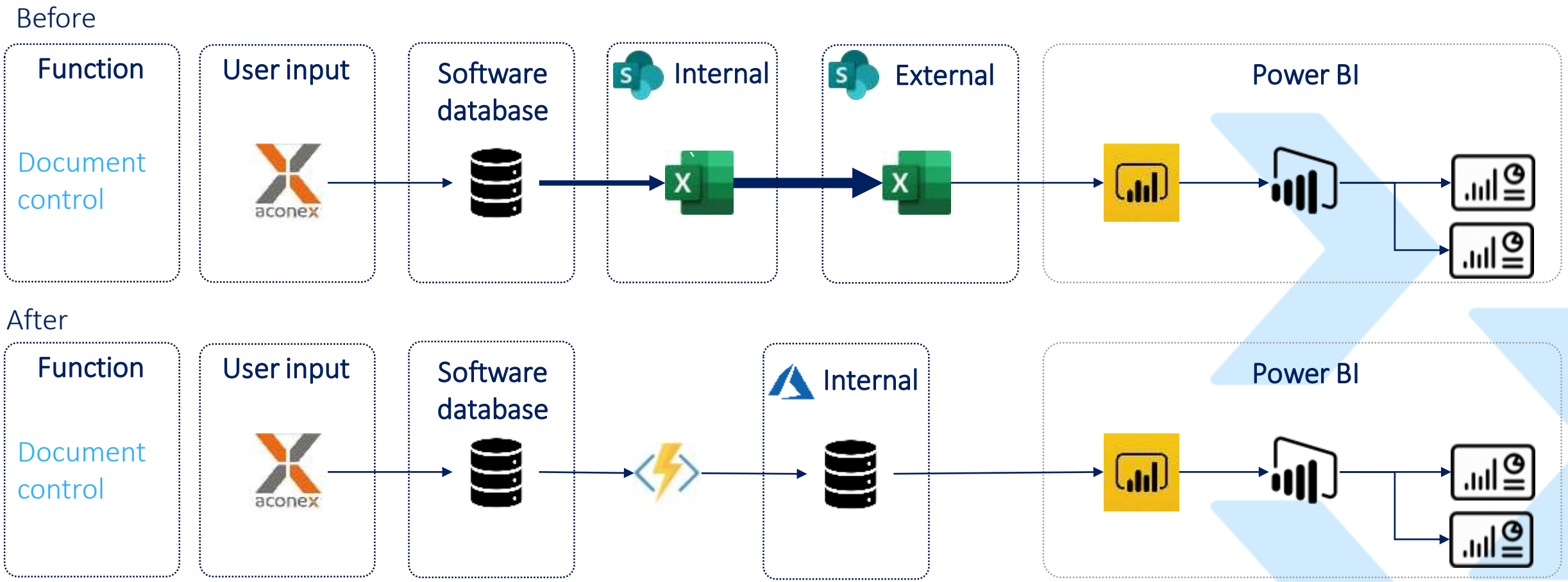

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Summary

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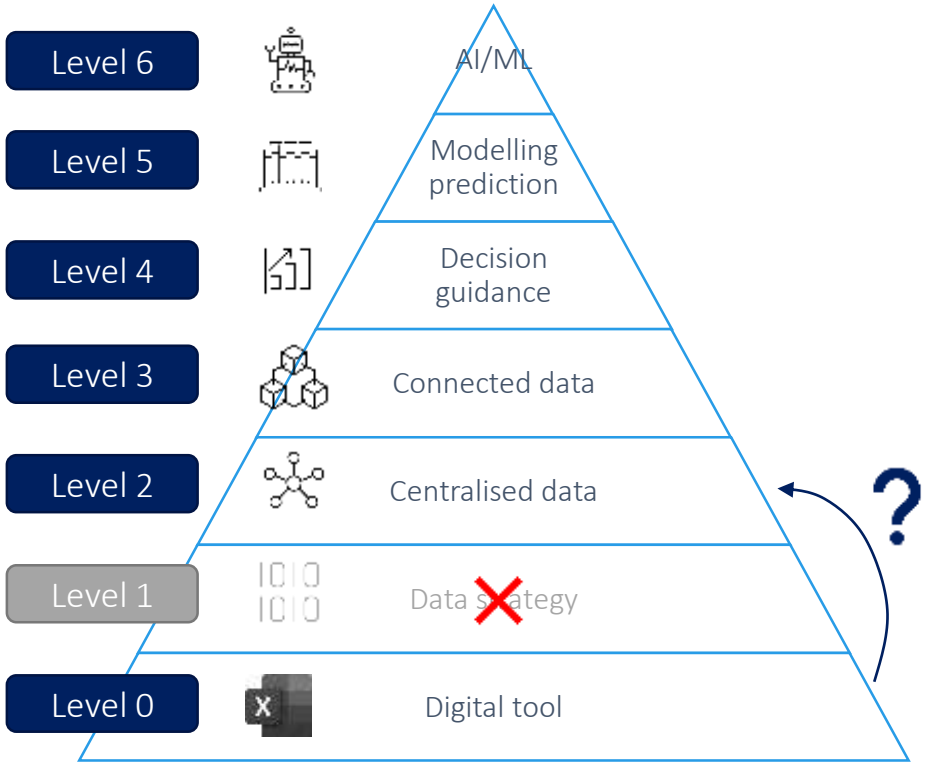
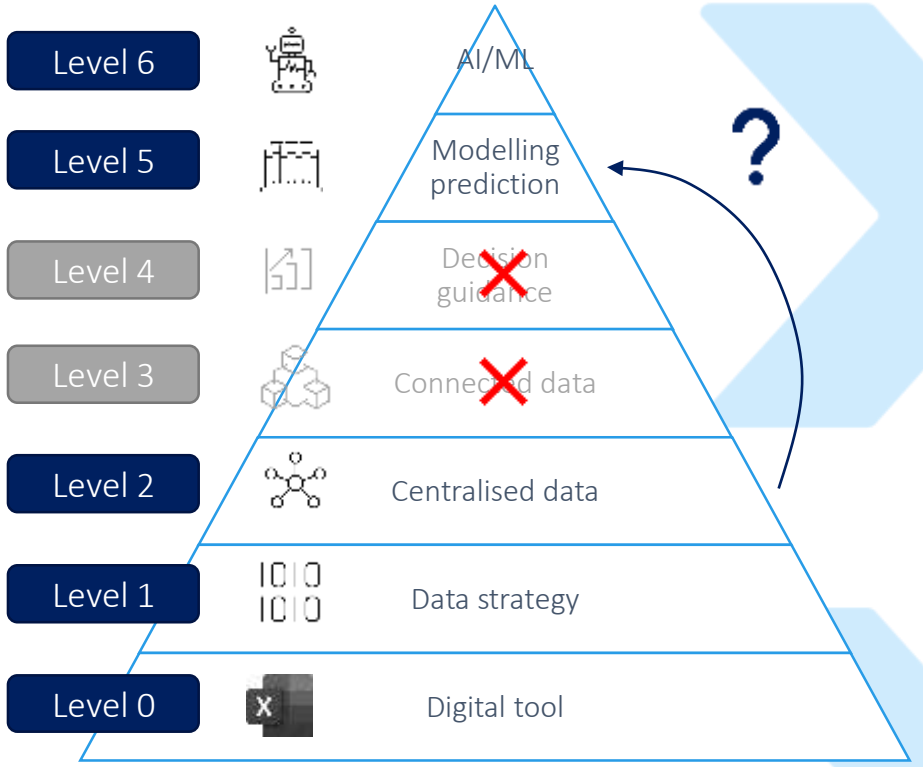
“Why can’t I get to the next step?”

Missing one or multiple layers will prevent advancing up the maturity scale





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“Digital is creating more work not less”

You’re asking for way more information than you did before, therefore creating more work for people

- Document tracking goes from a revision and a date, to originator, forecast, baseline, interfaces, asset numbers, work packages, transmittal codes, acceptance status etc.

You’ve added the digital aspect on top of what people did before, rather than replacing it

- On top of filling out online form, hard copy forms still need to be completed

You aren’t controlling your data, so it is duplicated and inconsistent, now you don’t know what’s right

- Excel copy paste “FINAL”, “LAST REVISION”, “FINAL FINAL”

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“This is taking too long”

It is possible to roll out in phases, but it still takes time.

- Think about your goal. If the goal is to improve performance, then discovery should provide a clear roadmap.
- If your goal is to “have a dashboard”, this is not the same and will lead to tension in the team.

No matter how good your project controls are you still need a well performing digital team

- Especially important to your team are the “translator” who can speak both project and technical language.

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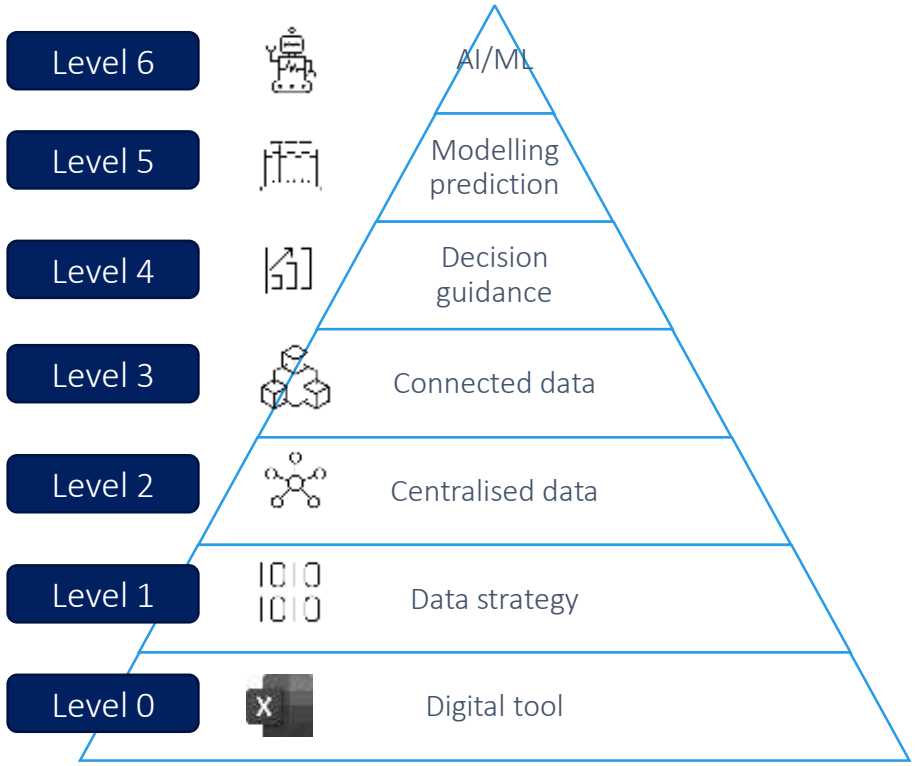
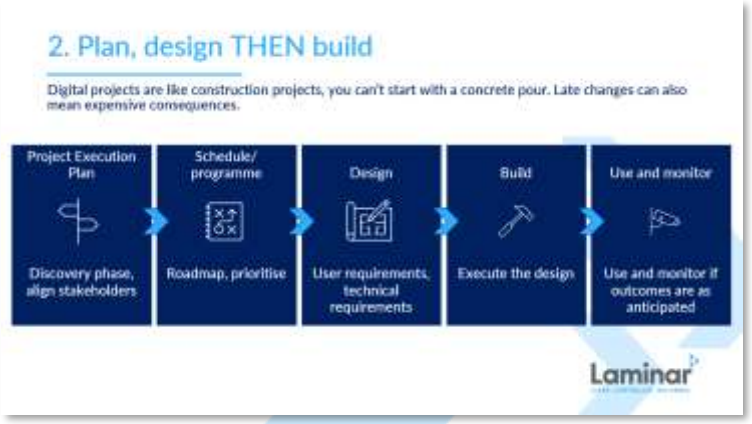
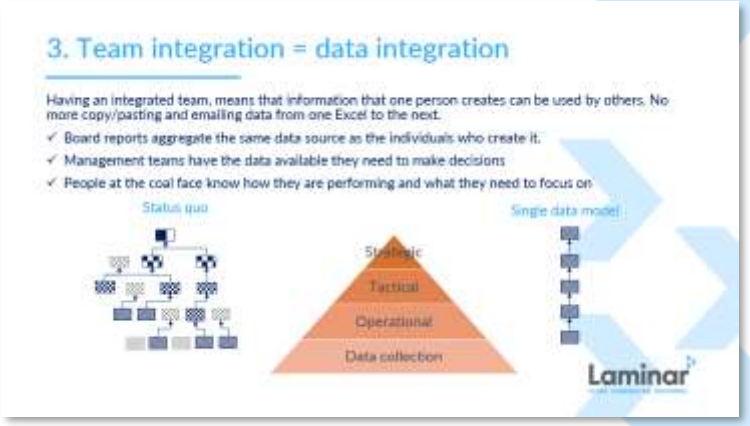
Key Takeaways







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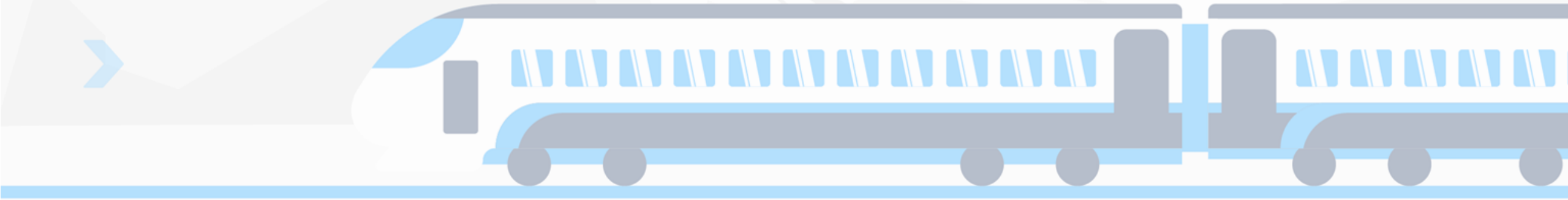
Question time