

Lessons from EKFB HS2's digital journey

From Excel to cloud technology



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- Non-Executive Director, Building a Safer Future
- BIM Director, Tier 1 Contractor



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- MEng Civil Engineering / MSc Building Information Modelling
- Tier 1 Main Contractor, Engineering Consultancy

Poll

👉 Raise your hand if...

You have worked on a
BIM project

Keep your hand raised 👉 if:
you could easily find all the information
you needed to do your job

Is this because you still had to
search through multiple systems
or Excel files?

BIM? Great! But is information easily accessible?

Just because you are implementing BIM and ISO19650, doesn't mean data and information is stored in one place.

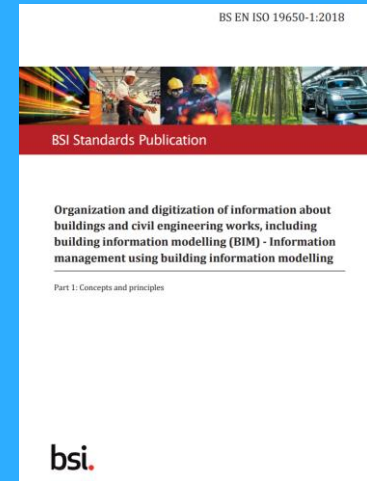
Most of the focus is on documents, drawings and models with many data sources being ignored:

- ? Planning and scheduling data
- ? Construction data
- ? Asset data
- ? Cost data
- ? Risk data
- ? Environmental data

1

Information is not always held in one place and can be distributed across different computer systems or technology platforms.

BS EN ISO 19650-1:2018



Clients, contractors and supply chain often use different systems to manage the same information.

2

Agenda

1. Project overview
2. Key outcomes
3. Lessons from our digital journey

Overview of the project and initiative

HS2 Phase 1 current budget

£40+bn

C23 current budget

£2.3+bn

C23 contract covers

80km

trace between London and Birmingham

C23 Major assets

4000+

C23 number of project deliverables

150,000+
and rising



Laminar's involvement timeline

2021

Discovery phase

Understand status quo and develop roadmap to target state

2021

Building the data foundation

Setting up data warehouse and high priority reporting

2022

Establishing a single source of truth

Adding to maturity by creating new reports and data sets to data warehouse

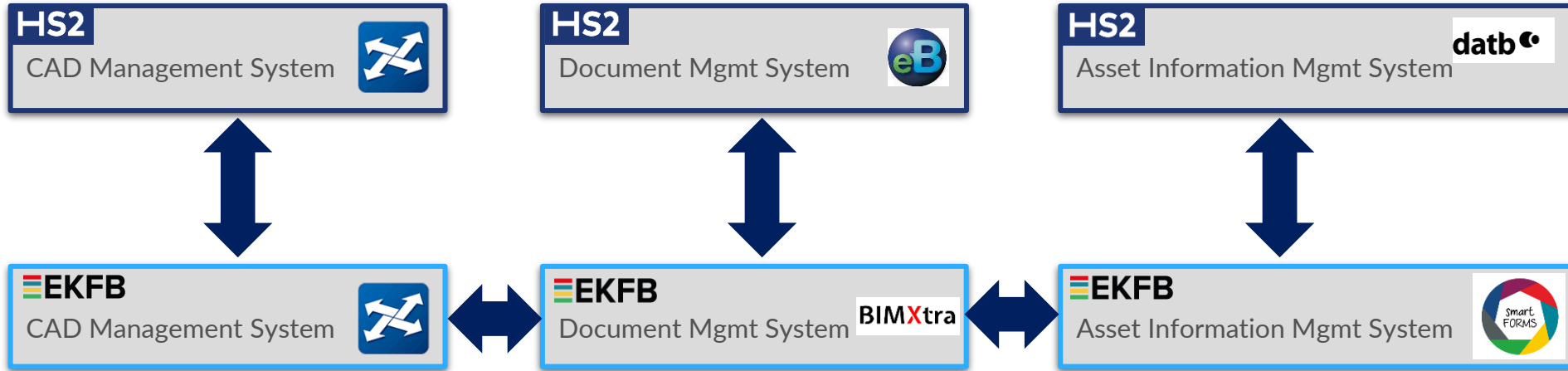
2023

Further improving our solutions

Analytics/reporting development, process improvements and automations

Multiple systems to manage information, leading to data silos and a lot of manual effort to find what you need.

Document and Asset Management Systems



Other project systems



Did I transfer the **latest information** to the **relevant systems**?
Have I missed anything?



Information Manager

How can I find the **latest information** for my upcoming **review**?
How do I **track progress**?



Design Manager
Construction Manager

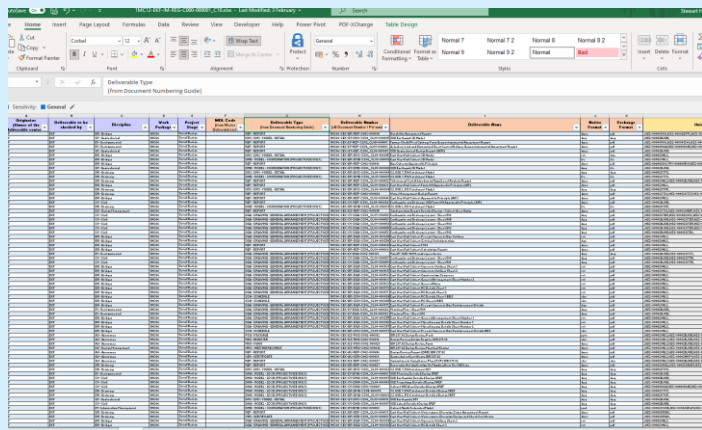
Is the published **information assured** and of **good quality**?
Can I **trust the data**?



Client

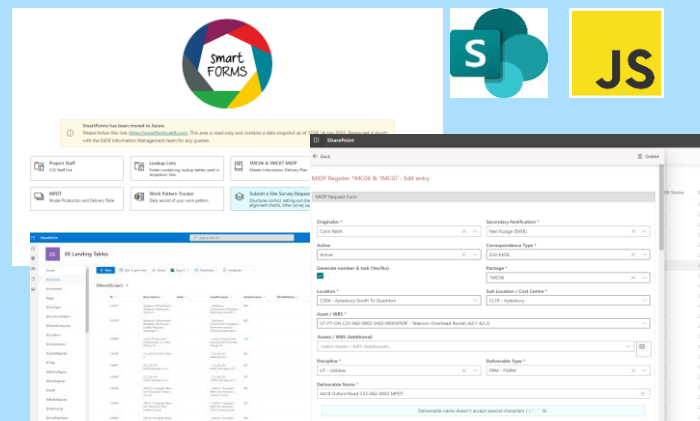
From Excel-based to a robust cloud infrastructure hosted in Microsoft Azure with increased focus on data quality and scalability

Stage 1: Excel-based



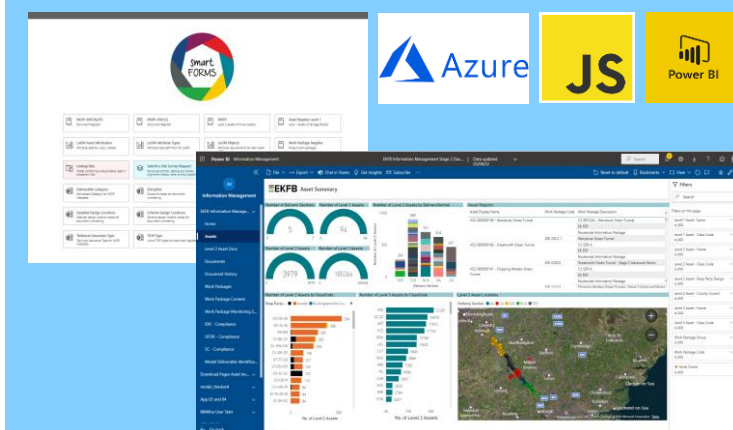
The image shows a screenshot of an Excel spreadsheet. The spreadsheet contains a large table with multiple columns and rows of data. The columns are labeled with various categories, and the rows contain numerical and text data. The Excel interface is visible at the top, including the ribbon and the formula bar.

Stage 2: SharePoint-based



The image shows a screenshot of a SharePoint interface. At the top, there are logos for Smart Forms, SharePoint, and JavaScript (JS). Below the logos, there is a list of items with columns for Name, Date, and other attributes. A detailed view of an item is shown below the list, displaying various fields and values.

Stage 3: Azure-based



The image shows a screenshot of an Azure-based dashboard. At the top, there are logos for Smart Forms, Azure, JavaScript (JS), and Power BI. Below the logos, there is a dashboard with various data visualizations, including bar charts, line graphs, and a map. The dashboard is titled 'EKFB Asset Summary' and displays various metrics and data points.

- Initial data requirements defined
- ✗ Data silos
- ✗ Poor data quality

- Improved data collection
- Improved data quality
- ✗ Data silos
- ✗ High data volumes

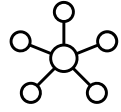
- Centralised data
- Scalability
- Easy access

Key outcomes



Cloud infrastructure

Scalable and repeatable solution, owned by EKFB and accessed by the whole supply chain



Multi-system Multi-discipline

Single source of truth for project data from 10 project systems



Quality data

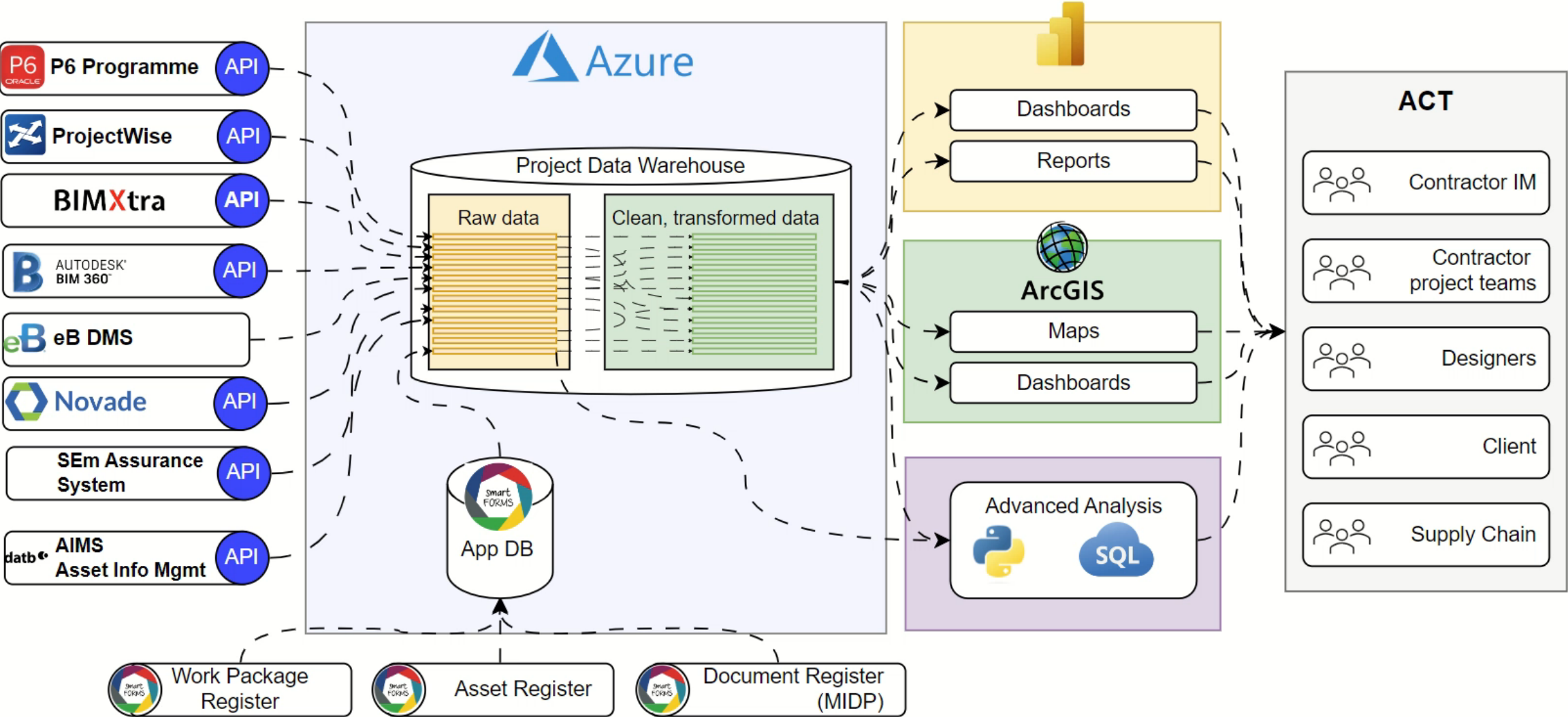
Improved requirements compliance through quality data, future-proofing for handover



Improved decision making

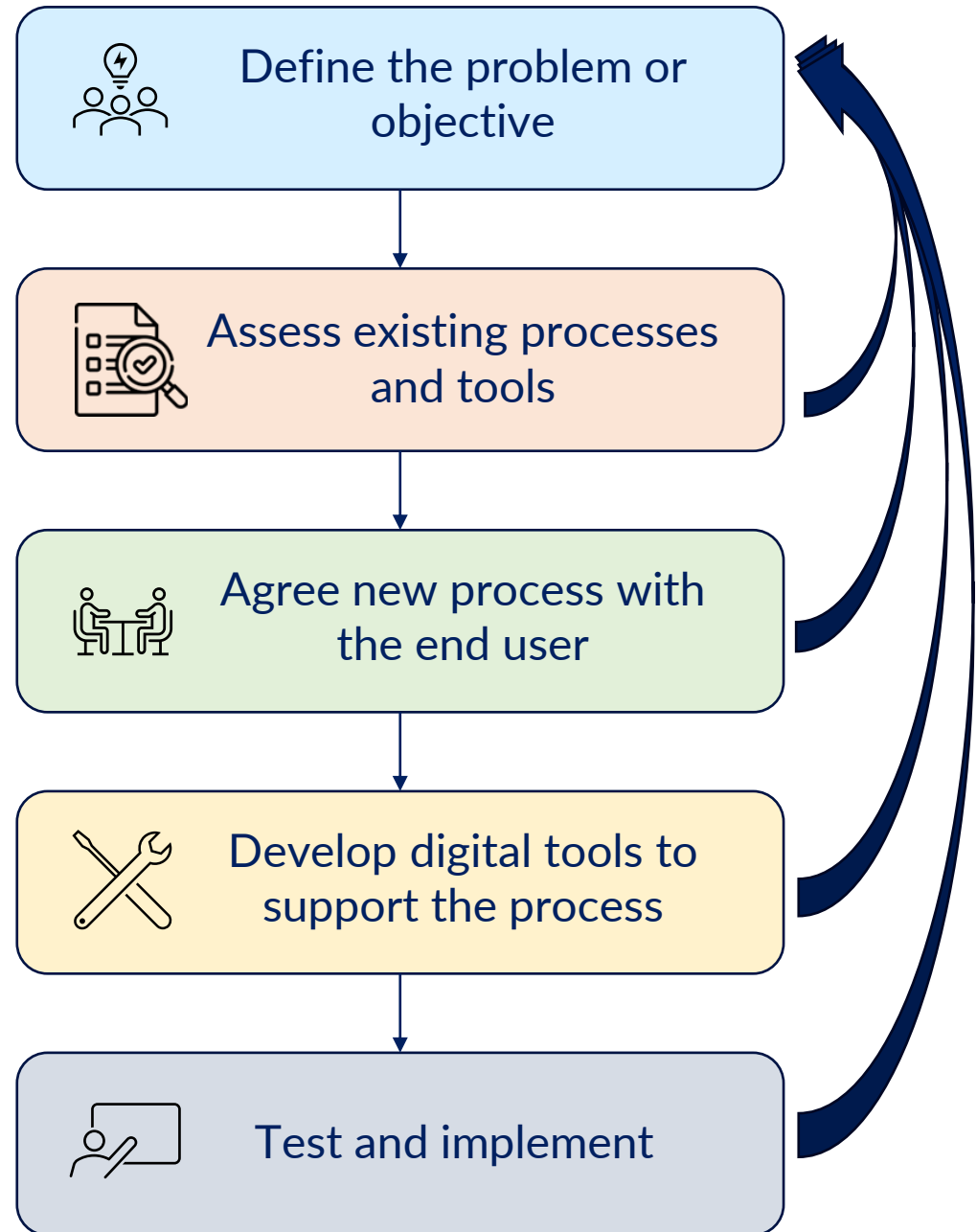
Easy access to reliable and up-to-date information for data-driven decision making

Centralising data from 10+ project systems, creating a single source of truth. Project teams have instant access to structured data through reporting tools.



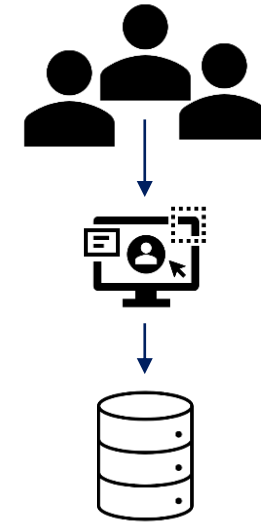
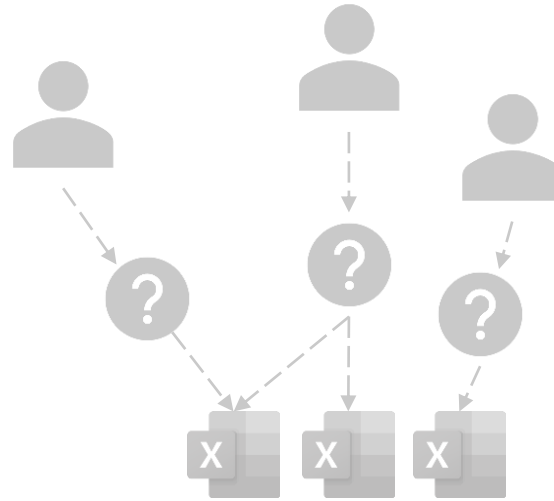
Lessons for breaking down information silos

- 1 Focus on the process, not just the tools



Lessons for breaking down information silos

- 1 Focus on the process, not just the tools
- 2 Control key project data sets in a database rather than Excel



User

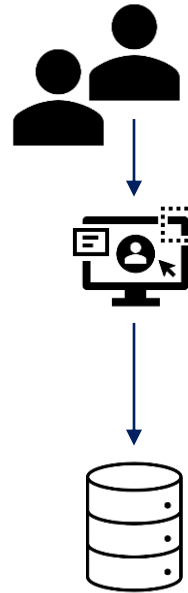
Software

Database

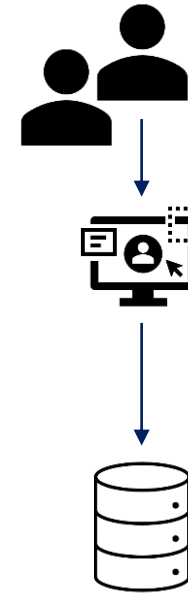
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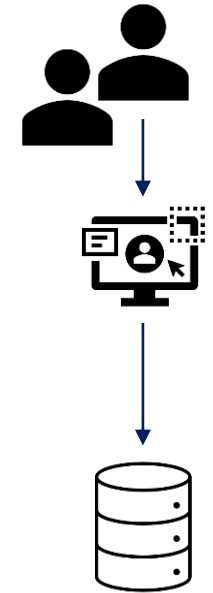
Programme management



Document/CAD Management



Work Package, Asset, Document Registers



Usually ignored

Lessons for breaking down information silos

- 1 Focus on the process, not just the tools
- 2 Control key project data sets in a database rather than Excel
- 3 Centralise project data in one place

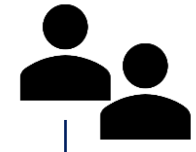
Document, CAD, Asset management



Construction management

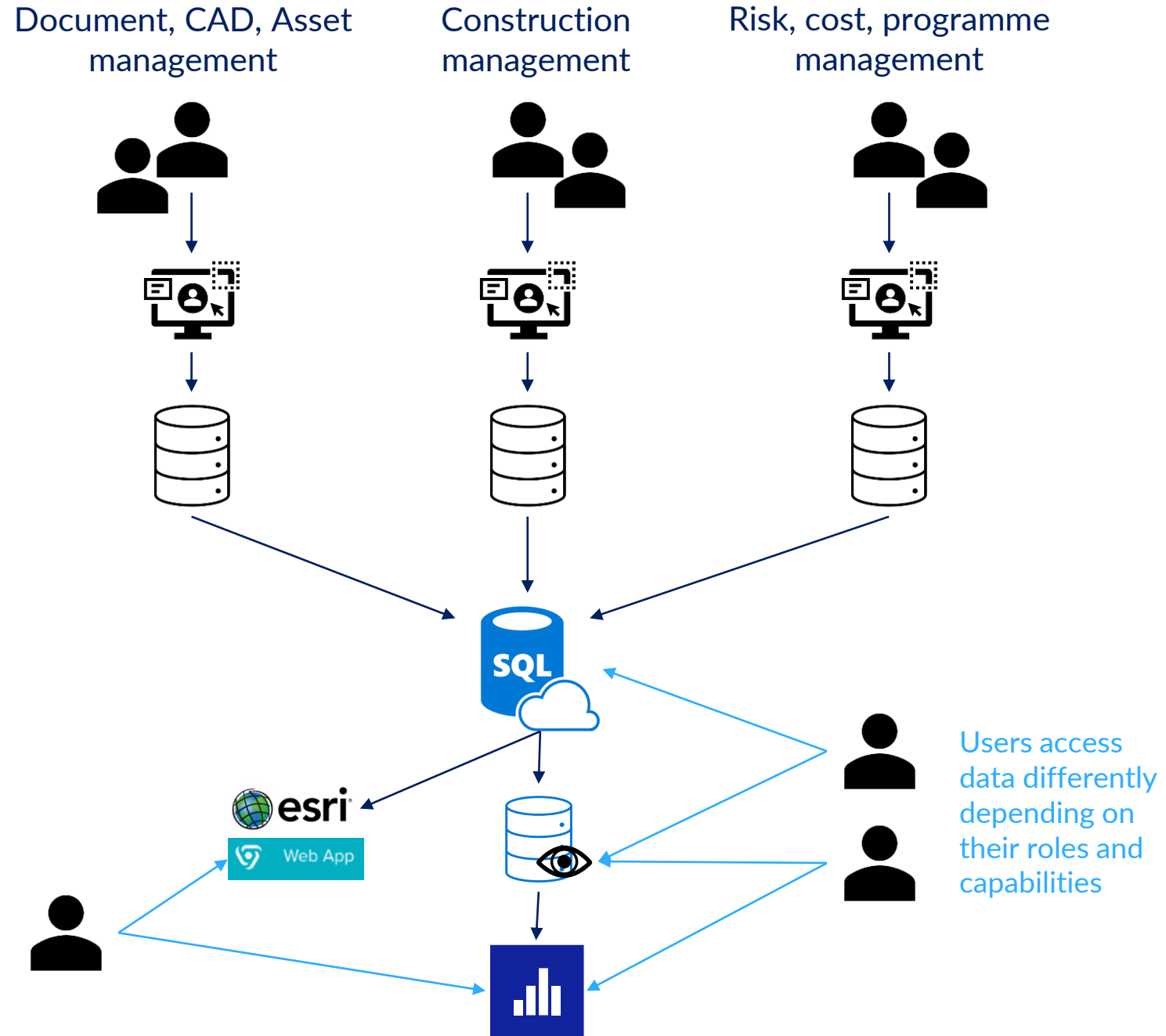


Risk, cost, programme management



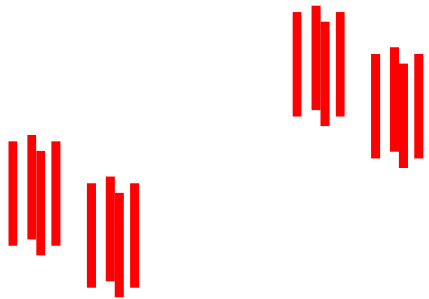
Lessons for breaking down information silos

- 1 Focus on the process, not just the tools
- 2 Control key project data sets in a database rather than Excel
- 3 Centralise project data in one place
- 4 Provide everyone in the project with easy access to reliable data



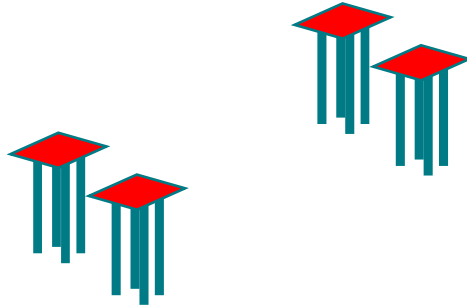
Digital transformation requires in-depth process understanding and a strong data foundation

Piles



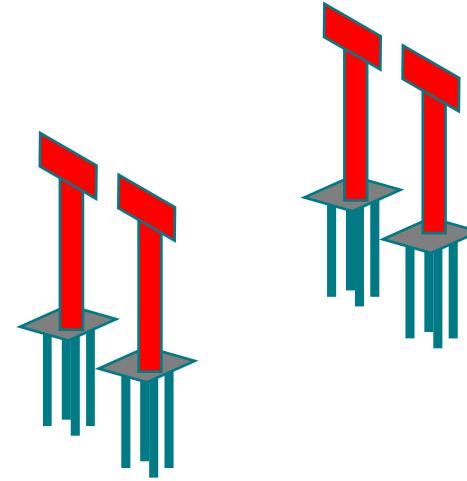
Project systems / Software

Pile cap



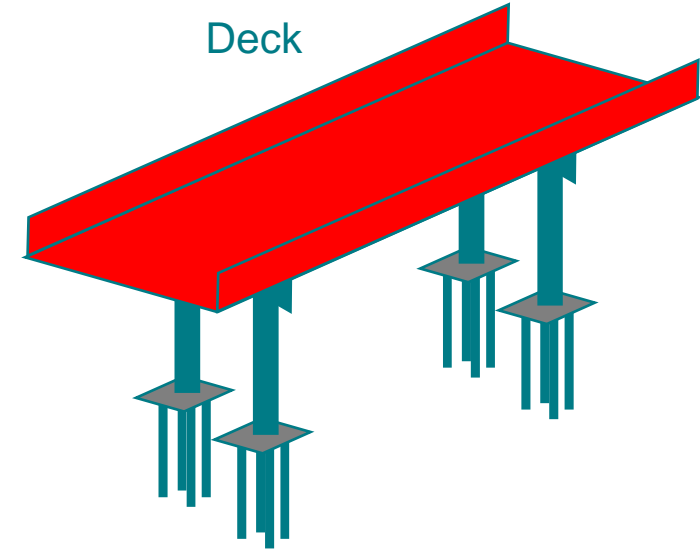
Cloud infrastructure

Superstructure



Digital processes

Deck



BI reporting

Data collection and integration



Data foundation

Data centralised, cleaned and ready to use



Engineering processes are clearly defined, mapped and documented before being digitised

Business improvements

Process improvements through advanced visualisations and integrated business logic



Keep in touch



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THANK YOU