Infrastructure Digitalisation Program Case Study

# Harnessing a Common Data Environment for collaboration and decision making: Sydney Metro City

## Case study context

The city section of the Sydney Metro City & Southwest project spans twin 15.5-kilometre tunnels and includes 6 new underground stations and platforms between Chatswood and Sydenham.

Multiple consultants, contractors and stakeholders are involved in the design, construction and delivery of this mega project, making the management of data and information extremely complex. Sydney Metro needed to establish a comprehensive data management technology solution with suitable data practices to collate, store, manage and share the information from different stakeholders.

**Photo credit** – Sydney Metro

## Challenge

This large-scale, complex project involves numerous stakeholders, making it essential to establish robust digital engineering practices. Data is often stored in multiple systems, making it difficult to access and ensure consistency, traceability, and collaboration among stakeholders.

## Policy principles applied

**Principle 2**

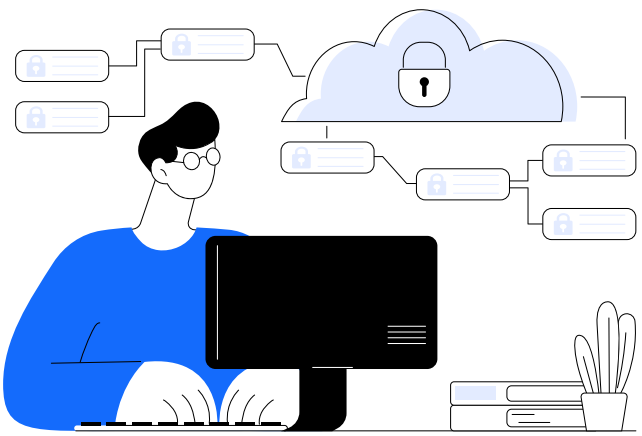
Prioritise the adoption, application, and enablement of digital practices, processes, and technologies

**Principle 3**

Manage technology and data as an asset throughout the infrastructure lifecycle

## Key digitalisation concept

A Common Data Environment (CDE) refers to a group of integrated, connected eco-system of data environments within an organisation. This enables users to store, collaborate and exchange infrastructure data and information efficiently. A CDE solution and an appropriate information management workflow can facilitate easier access by all infrastructure stakeholders to the right information, at the right time about an agency's asset infrastructure portfolio or project.



## Demonstration of good practice

The digital engineering team at Sydney Metro implemented a CDE to address collaboration needs in a technically complex project environment. The CDE was used to streamline decision-making and integrate multiple digital information systems. The project team used digital practices and technologies, such as building information model (BIM), geographic information system (GIS), and project data building blocks (PDBB), onto a common data platform to improve data sharing and enable the data to be used across multiple systems.

A CDE can ensure all stakeholders involved in the infrastructure lifecycle have access to accurate, timely, and the latest updated information. This fosters greater transparency, collaboration and operational efficiency within the project team.

Using a suitable CDE helped Sydney Metro mitigate design and construction risks by improved stakeholder engagement, enabling the project team to identify issues earlier and resolve any risks before construction commenced.

## Benefits and outcomes

The adoption of a CDE with clearly articulated data standards and information requirements, and with the appropriate, related digital tools has seen the following benefits for Sydney Metro:

- improved productivity by facilitating seamless information exchange
- reducing errors and speeding up decision-making processes
- more sustainable outcomes by optimising construction resources and enhancing service levels through improved project planning and execution
- enhanced collaboration among stakeholders and streamlined decision-making throughout the project's delivery.

This approach ensured data and information management consistency and efficiency across stakeholders during the project lifecycle.

## Useful links

For more information on how to implement digitalisation practices, refer to the Overview and Foundational Concepts Guide at [infrastructure.nsw.gov.au/expert-advice/infrastructure-digitalisation-program](infrastructure.nsw.gov.au/expert-advice/infrastructure-digitalisation-program)