

The National Digital Twin programme

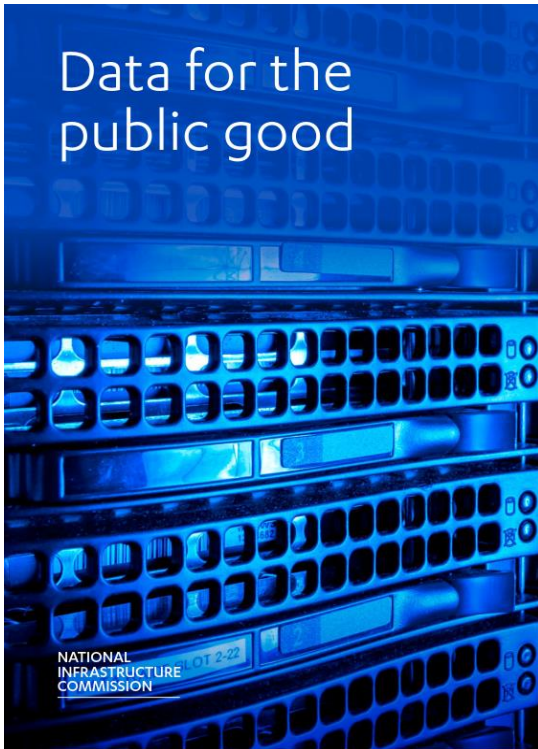
DT Toolkit

The National Digital Twin programme

Data for the public good
recommendations



The National Digital Twin programme



Is led by the **Centre for Digital Built Britain**, with the mission of:

- **delivering an Information Management Framework**, enabling secure data sharing and effective information management
- **enabling the National Digital Twin**, an ecosystem of connected digital twins that will deliver better outcomes from our built environment
- **aligning** industry, academia and Government on this agenda.

The Digital Twin (DT) Hub

- Visit **digitaltwinhub.co.uk**
- Click 'sign in'

The screenshot shows the homepage of the Digital Twin Hub. At the top is a purple navigation bar with the 'cdbb Digital Twin Hub BETA' logo on the left, a 'DT Resources' dropdown menu, and links for 'About Us', 'Discussions', and 'Activity'. A search bar is on the right. Below the navigation bar, the text 'DIGITAL TWIN HUB COMMUNITY' is centered above the main heading 'Building Better Connections'. A welcome message follows: 'Welcome to the DT Hub. Our mission is to create connections and foster collaboration between digital twin owners and information management experts enabling the UK to realise the potential of connected digital twins.' Below this is a black button that says 'Sign up & join 1,219 members' and a link 'or sign in >'. A large, colorful illustration of a city with digital elements (like a smartphone, Wi-Fi symbols, and a train) spans the width of the page. Below the illustration, there are two main sections: 'Community Insights' on the left and 'Explore the DT Hub' on the right. 'Community Insights' features a list of featured content cards, including one titled 'Unlocking Value Across the UK's Digital Twin Ecosystem' and another from 'UCL' about a survey on digital twins. 'Explore the DT Hub' includes a search icon and a list of resource categories: 'Articles & Publications', 'Media', and 'Downloads'.

cdbb
Digital Twin Hub BETA

DT Resources ▾ About Us Discussions Activity ▾

Search... 🔍

DIGITAL TWIN HUB COMMUNITY

Building Better Connections

Welcome to the DT Hub. Our mission is to create connections and foster collaboration between digital twin owners and information management experts enabling the UK to realise the potential of connected digital twins.

Sign up & join 1,219 members or sign in >

Community Insights

The best content from across DT Hub, hand-picked by us. [See all Insights >](#)

Explore the DT Hub

Check out our resources

- Articles & Publications
- Media
- Downloads

Gemini Project 1: DT Toolkit

DT Toolkit

What is a digital twin?

What can a digital twin be used for?

Case studies

Business case template

Roadmap

How do I make
the business
case for a digital
twin?

Toolkit team

Bola Abisogun OBE –
Urbanis

Jonathan Bailey –
Dassault Systemes

Matthew Callcut –
Atkins

Peter Curtis – Sopra
Steria

Jozef Dobos – 3D Repo

Simon Evans – Arup

Tom Henderson –
techUK

Ben Kidd – Arup

Jeffrey Lake

Lauren McMillan –
University College
London

Laura Mills – KPMG

Iain Miskimmin –
Bentley

Ron Oren – Connected
Places Catapult

Casey Rutland – Royal
HaskoningDHV

Hana Sapherson

Anthony Tuffour – Buro
Happold

Peter van Manen –
Frazer-Nash
Consultancy

Liz Varga – University
College London

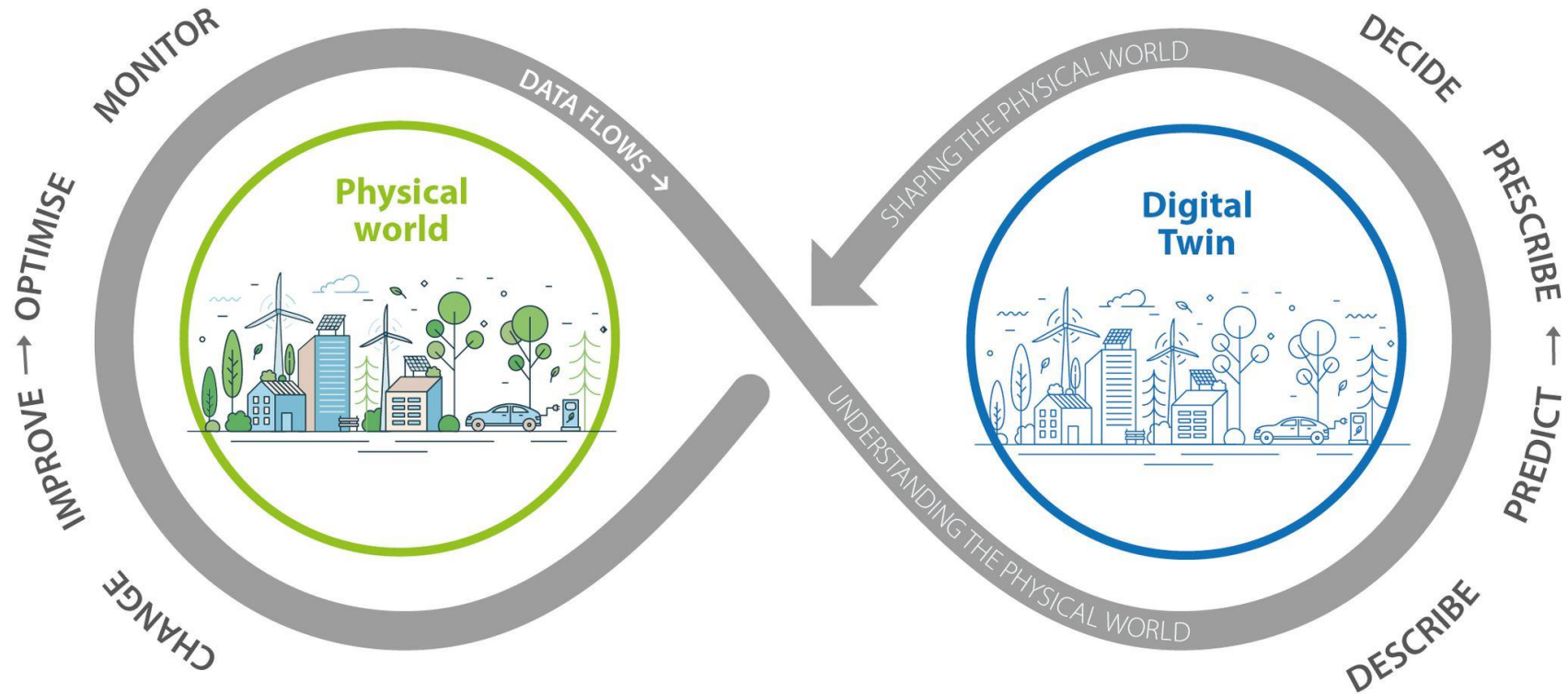
May Winfield – Buro
Happold

“The toolkit captures know-how and insights from people with experience of developing and using digital twins. Steps are given that provide the reader with valuable guidance for justifying, building and exploiting twins, increasing value and reducing the risk of change.” **Dr Peter van Manen, Frazer-Nash Consultancy**

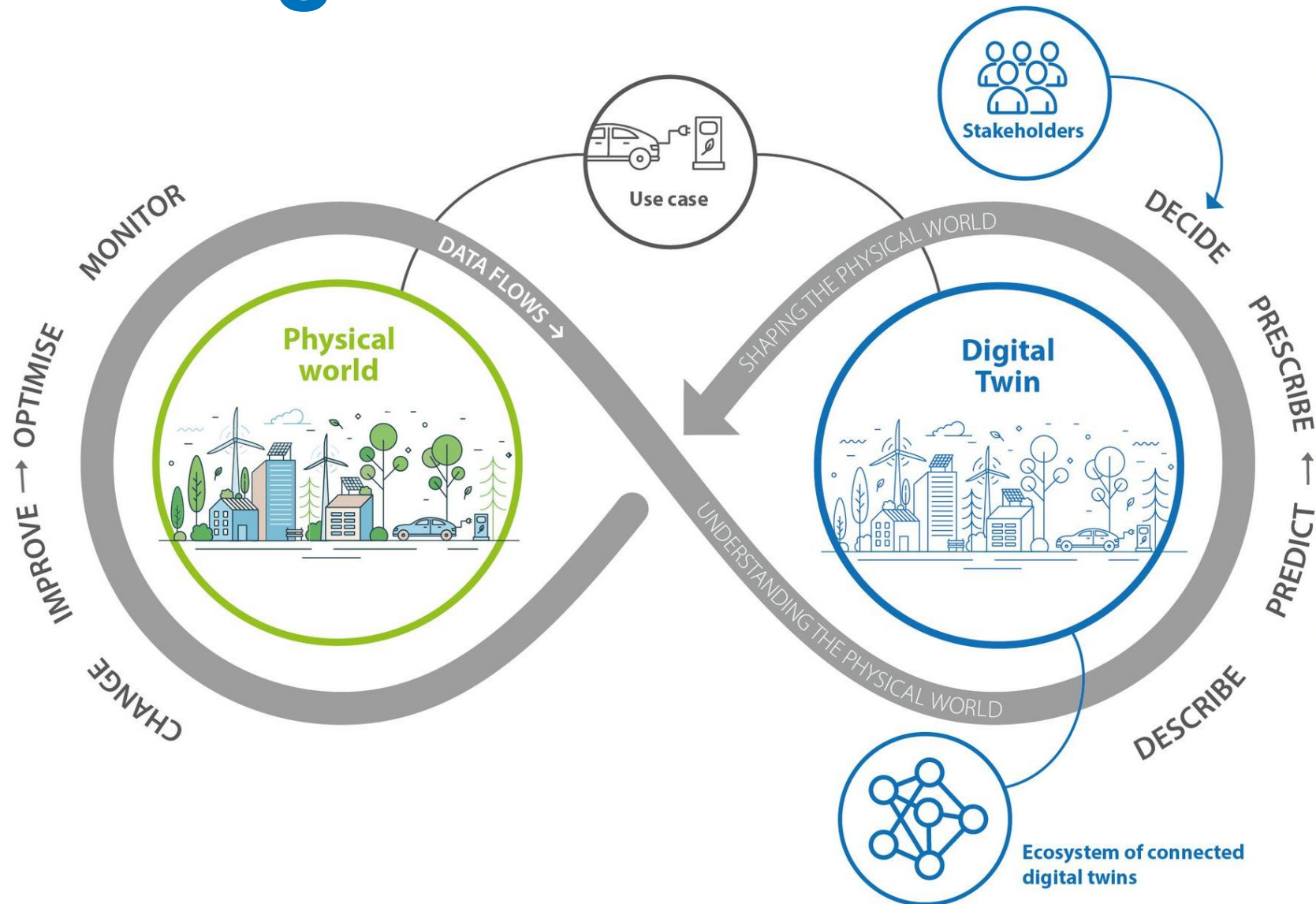
“Working collaboratively with people from a variety of industries and experiences, has been not only invaluable to the construct of the Toolkit but also, fun, inspiring and wholesome to participate in.” **Peter Curtis, Sopra Steria**

“Working on the DT toolkit has been an excellent way to socialise my thoughts and the Catapult’s work on Digital Twins, while increasing my understanding of DTs, through discussions with the other team members.” **Ron Oren – Connected Places Catapult**

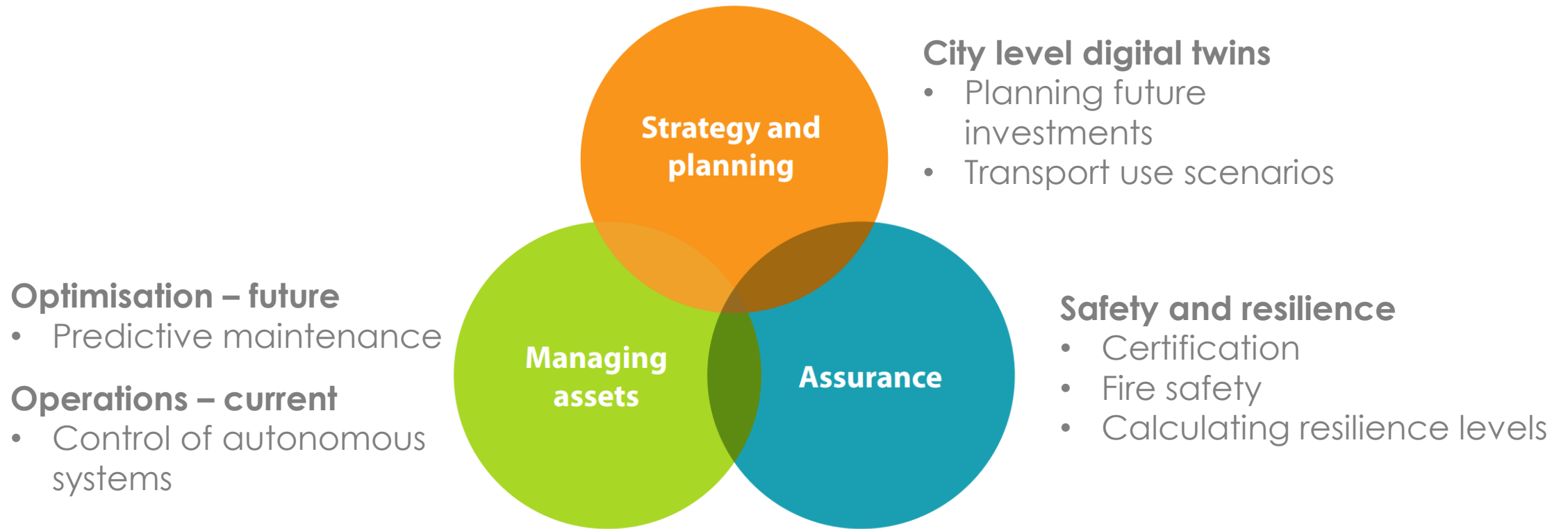
What is a digital twin?



What is a digital twin?



The use case framework



The use case framework



Case studies on the DT Hub



Colouring London

Colouring London is described by the ODI as an example of a 'successful collaborative data maintenance model' along with Wikipedia, Open Streetmap, Music Brainz...

Organisation Colouring Cities

Sector Cities

Type Gemini principles case study

[See Case Study](#)



Smart Energy Digital Twin for Bridgend County Borough Council (BCBC), Wales

Buro Happold has developed an in-house Digital Twin tool for district heat network that automates optimised plant, pipe sizing, and network routing based on peak...

Organisation Buro Happold

Sector Energy

Type Community case study

[See Case Study](#)



Network Digital Twin – Knowledge Management

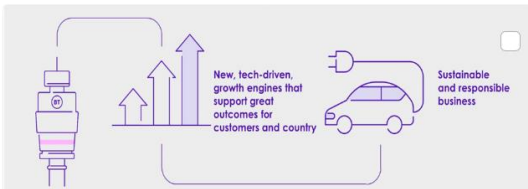
As part of the Network Digital Twin project, we are developing applications that leverage the capabilities of digital twins. This project aims to create a digital twin of...

Organisation BT

Sector Telecoms

Type Community case study

[See Case Study](#)



Reducing Network Energy Consumption and Carbon Footprint

Our organisation uses significant amounts of electricity to



Disaster Planning and Mitigation - Typhoon preparedness and response

The purpose of this digital twin is to improve disaster



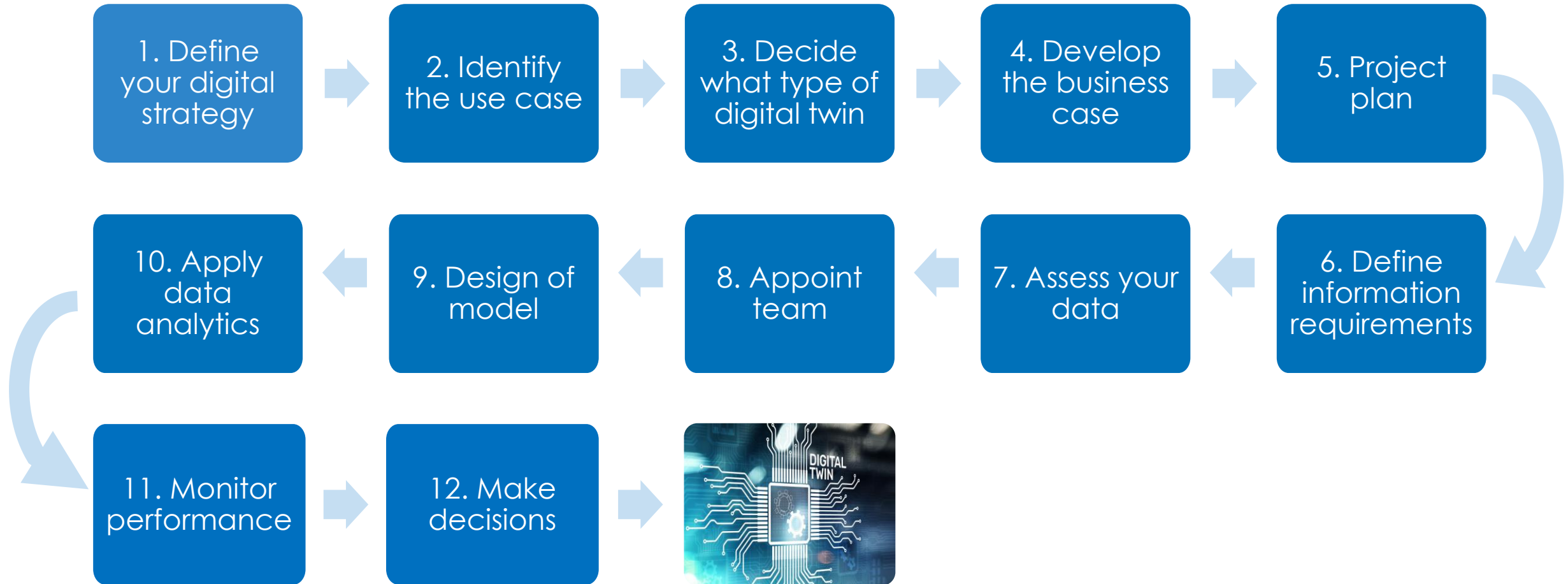
City-scale Digital Twin Prototype for Cambridge

The Cambridge City-scale Digital Twin (CDT) project addresses a local policy aspiration of developing a

DT Sophistication Levels

Level of sophistication	Key questions	Key activities
Descriptive	What happened?	Data aggregation
Informative	Why did it happen?	Data analytics
Predictive	What will happen?	Data science and machine learning
Prescriptive	What should I do?	Simulation and scenarios
Cognitive	What actions can be taken automatically?	Decision automation

Roadmap 12 Steps:



Legal considerations

- Responsibility
- Liability
- IP rights/copyright
- Data restrictions
- Technical specifications
- Security and integrity



Business case template

HMT Green Book 5 case model:

- Strategic
 - Economic
 - Financial
 - Commercial
 - Management
-
- Along with “desirability, viability, feasibility” approach
 - Word document to download and edit

Digital Twin toolkit

Appendix 2 - Digital Twin business case template

This business case template is a part of the [Digital Twin toolkit](#) published in February 2021. It is intended to help you put together the business case for a digital twin.

What next?

- Feedback on the DT toolkit
 - Use it and tell us what we can do to improve it
 - Developing a collaborative workshop tool based on the DT toolkit
 - Contribute to future iterations of the DT toolkit
-
- Contact us at ndtprogramme@cddb.cam.ac.uk
 - Join the DT Hub: www.digitaltwinhub.co.uk

