PLACE FUTURES NOTE

DIGITAL TWINS

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DIGITAL TWIN, AND IT'S CORE CAPABILITIES

A Digital Twin is a series of capabilities - some human, some digital.

In essence, it includes a digital representation (a digital model) of something physical/natural (the real).

But a digital representation is not enough, it needs to be fuelled by data so we can see what's happening, and what might happen, so the best decisions can be made in order to deliver outstanding infrastructure and community services.

And there are five core data activation 'capabilities' that help a Digital Twin come to life. You can see them on the next page.

But you just don't buy a Digital Twin, people need to build them. And there needs to be a reason, a vision, a business case. No one organisation or individual or department can just build and implement a Digital Twin, successfully.

And while there may be a range of digital tools needed to assemble a Digital Twin, people operate them. So human capability really becomes the essential ingredient.

At HUB we design and deliver infrastructure and data services that support many of the core Digital Twin capabilities and we are committed to engaging with our industry peers, ecosystem partners and government customers to advance their Digital Twin journey.

1_CONNECTION

A digital connection between the digital replica and the physical world is a critical enabler of Digital Twin capability - it allows information to flow between the two.

2_INTEGRATION

The digital replica has the capability to ingest disparate data sets from various sources, aggregate, verify and cleanse them and prepare them for analysis and simulation.

3_ANALYSIS

This is the core capability of analysing data which includes interpreting, transforming and modelling data for the purposes of creating actionable insights.

4_SIMULATION

Here, the Digital Twin uses computer-based numerical models to imitate a system. This helps users understand the potential impacts and outcomes of alternative conditions and scenarios and potential actions to support positive outcomes.

5_VISUALISATION

Through the use of different digital tools, the Digital Twin is capable of representing multiple sources of data and insights in multiple dimensions (width, height, depth, time etc) - and move from 2D to 4D+.

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