

Built Environment Digital Twin G-Cloud 15





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1 Service Overview

Capgemini's Built Environment Digital Twin Offer, leverages digital technologies including AI and cloud computing to support clients with assets across the built environment develop cloud-based and secure digital representations of their physical assets (or entities within their assets) and processes, synchronised at the desired operational frequency and fidelity as their physical assets.

Our offer considers the various purposes that digital twins are able to serve. Capgemini can identify and deliver the appropriate digital twin to address the range of needs various stakeholders have of the digital twin and the different benefits it is set to deliver. We deliver digital twins which are not just a digital replica but a collaborative platform that leverages digital continuity.

2 Business Need

The ownership and maintenance of assets in the built environment poses several challenges for clients. Primarily the need to understand the impact of the operational envelope of these assets and the impact of changes to the performance of assets. Some physical changes imposed on assets also pose a very high risk to the asset life and safe operation of the asset. For example, physically simulating the effects of an increase in pressure flow through a pump valve poses a risk of injury to test operators and damage to the valve itself. The key areas of business need are:

- Concepting is carried out in silos, taking more iterations and longer time due to fragmentation
- Product improvements are driven by iterations and experimentation, prototyping and testing with each adding time and costs
- Changes to the product, process or resources require online testing which puts production at risk
- Large amounts of scrap and waste are generated in prototyping and testing.

3 Our Approach

Capgemini's Built Environment Digital Twin offer adopts an agile iterative approach across 4 key phases: Mobilise, Design, Develop and Build, and Validate and Iterate.

1. **Mobilise:** Within this phase, Capgemini will look to conduct an as-is capability analysis, risk analysis and Return on Investment (ROI) assessment. We will conduct management interviews, focus local interviews and tactical interviews with the aim of creating a view of the current system engineering processes, simulation capability, manufacturing definition and quality inspections, 3D models and existing DT capabilities for re-use. We will also scope the ontology fields and data sets, conduct the risk & impact assessment and identify the desired production line and use cases to use. This phase will set up the MVP Macro scope, planning and success criteria which will guide the subsequent phases.
2. **Design:** Capgemini will conduct workshops to support the development of the to-be architecture, validate the MVP scope and draft the future roadmap. We will also create the initial ontology hierarchy and iterate the ontology design. The outputs of this phase will be the platform architecture draft, detailed value matrix, integrated use case validation and updated risk assessment.
3. **Develop and Build:** This phase will look to deliver the End-to-End Value Pilot and validate the linked roadmap. Building on from the last phase, Capgemini will look to validate the to-be solution architecture, analyse the ROI and feedback from piloting and update the risk assessment. We will setup the platform and data pipelines, ingest data and create the Elastic Knowledge Graphs (EKGs). We will also explore the EKG with stakeholders and iterate the ontologies. Further to this, we will specify the UI, APIs and Analytics and build these APIs, algorithms and 2D/3D apps.



4. **Validate and Iterate:** This phase will look to validate the roadmap and ROI analysis with stakeholders and communicate the risk assessment. The MVP will also be reviewed and validated by stakeholders. Further to this, the process will be iterated over as needed to create the agreed level at which the Digital Twin is needed.

4 Buyer Responsibilities

Please refer to the Supplier Terms listed with this service on the Platform. These may contain additional Buyer obligations/costs the Buyer is subject to that are not identified anywhere else in the Supplier's Application or on the Platform.

If these responsibilities do not match your expectations, then please contact us in order that we can explore options to vary our approach.

5 Service Management

This service can be delivered as part of a defined project.

6 Protection of Data

This service is based on a security classification of 'Official', however should you have a requirement for a different security classification that you would like us to consider, please contact us to discuss.

7 On-boarding and Off-boarding

Capgemini shall undertake on-boarding and off-boarding activities agreed within the Order Form (including as a minimum an exit plan in line with the Call-Off Contract terms) which will be charged for in accordance with the Pricing section for this service.

8 Skills and Knowledge Transfer

Capgemini recognises that skills and knowledge transfer is a critical element in the provision of G-Cloud services to public sector clients. Where possible and applicable, this forms part of the delivery plan for the service agreed at the start of the engagement. Our consultants and engineers are experienced in providing skills and knowledge transfer for major private and public sector clients.

Where appropriate, we may use a standard approach, tailored to topic, skills-gap and individual, to ensure consistency and effectiveness. The approach, Capgemini's Assess-Plan-Implement framework, has been used repeatedly by our teams to structure the work involved in transferring skills and creating new teams capable of driving and sustaining change long after the end of the formal programme. The framework can be applied throughout a project to understand knowledge transfer objectives, plan training delivery methods and materials, and deliver and evaluate success.



9 Vendor Accreditations/Awards



For the 13th year in a row, Capgemini has been recognised as one of the World's Most Ethical Companies® by the Ethisphere® Institute. This is an acknowledgement of our ethical culture that makes us an employer of choice and responsible player in the eyes of our clients, shareholders, and the wider community.



ISO 9001 Quality Management for Management Consultancy and IT Implementation and services to the Public Sector.



ISO 27001:2013 - Provision (Delivery) of IT services including business applications development, maintenance and Data, Digital and Cloud technologies.



NelsonHall has identified Capgemini as a Leader in its 2022 NEAT Vendor Evaluation for Learning Services due to its ability to meet future client requirements as well as its capability to deliver immediate learning benefits to them.



Capgemini is the first amongst consultancy and technology firms to be recognized six times in a row for its thought leadership reports.



2023 Ecovadis Platinum Rating: We maintained a platinum rating, recognising us as a responsible and sustainable business in the top 1% of companies assessed.



Better Society Awards: Our collaboration with Code Your Future to offer digital skills training won a Better Society Award in 2022. The awards celebrate efforts by commercial organisations to create a better society.



Inclusive Top 50 UK Employers List: We achieved second place in the Inclusive Top 50 UK Employers List 2022/23 – a list that assesses companies for best practice on diversity, equality and inclusion



UK Best Workplaces for Women: We were listed as a Best Workplace for Women by Great Place to Work®. This listing is based on responses from our team to an anonymous survey about their employee experience.



UK Best Workplaces for Wellbeing: We are listed by Great Place to Work® as a Best Workplace for Wellbeing.



Great Place to Work: We were certified as a Great Place to Work® in 2023, reflecting our employees' experience of working at Capgemini in the UK.



10 Sub-contractors

Capgemini UK may use the following subcontractors to deliver this service:

- Capgemini Technology Services India Limited.

11 Business Continuity and Disaster Recovery

No disaster recovery plan is provided as part of these Services.

12 Pricing

This service is priced in accordance with the SFIA Rate Card attached. Capgemini can also provide offshore resources at reduced rates where appropriate. Projects can be priced either on a Time & Materials or Fixed Price basis.

13 Ordering and Invoicing

Please refer to the Supplier Terms for this service.

We would be pleased to arrange a call or meeting to discuss your requirements of our service in more detail.

14 Termination Terms

Please refer to the Supplier Terms for this service.

15 Further Information

For more information about this or any of our G-Cloud services, please contact our Public Sector Team.

Phone: 0370 904 4858

Email: publicsector.opps.uk@capgemini.com including the following information:

1. The name of this service.
2. The name of your organisation.
3. Your name and contact details.
4. A brief description of your business situation.
5. Your preferred timescales for starting the work.

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, generative AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2024 global revenues of €22.1 billion.

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