cdbb

Centre for Digital Built Britain

The governance of digital technology: Implications for the city-scale digital twin

Benefits to local authority users (city planning and management), urban planners, urban modellers, smart city delivery companies, activist community groups

"We don't have access to the model...At the end of the day, most things come down to judgement and you can't challenge people's judgement, you can criticize it, but you can't formally challenge it... I think what we have to do is just enlighten people, particularly councilors, in some cases council officers, to help them make better decisions"

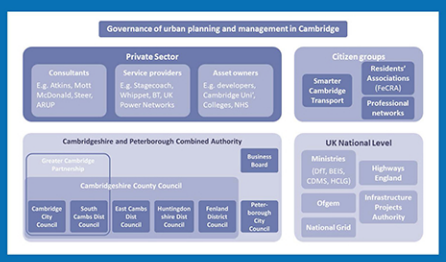
- Citizen Activist, Cambridge

Summary

The study investigates how **existing governance systems** – both in terms of their structural and cultural characteristics – influence the **design** and **implementation** of **city digital twins** (i.e. a realistic digital representation of urban assets, processes and systems).

Moving towards city digital twins as evidence for decision-making in urban planning and management will have implications for urban governance and modelling. First, it contributes to more a more **effective** use of evidence through enabling a **better understanding** of **cross-cutting problems** and the **communication** of data-driven decisions. Second, by supporting the development **in-house modelling capabilities**, commissioning will be become **more time and resource efficient**. Third, broader **accessibility** improves the **democratic quality** of evidence-informed decision-making through **enhancing transparency** and **accountability**.

Thus, to harness the benefits offered, the design and implementation of CDTs needs to consider how currently existing local governance systems **function** and **use modelling outputs** as **evidence for decision-making**, as well as **grounded citizen participation** and **feedback**.



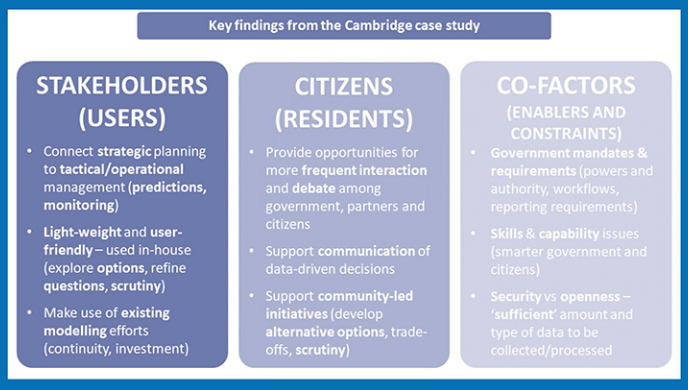
Next Steps

Future Steps	2019 Q3	A4	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3
Context: in-depth analysis of CDTs from different cities to understand generalisability									
Competence: identifying skills and capability gaps for successful CDT implementation									
Experimentation: new research project including real-world case studies and implementation (Cambridge Biomedical Campus, Northern Fringe East- subject to funding)									

Long-term Vision

- Embedding the significance of research on socio-technical processes to assess impact of digital tools in local contexts.
- Connecting, expanding and re-defining experiences of city digital twins across countries to form a global knowledge network of new generation urban modelling for 'smarter' city planning and management.

Key Findings



Conclusions:

1. There is an apparent need for **participation and better collaboration mechanisms** and across the governance landscape based on **systemic interdependencies** and **pressing problems** situated at the nexus of governance structures and processes.
2. 'Black box modelling' and siloed evidence base **limits comprehensive responses** and negotiations of accountability relationships and responsibilities; and **increases difficulties for engaged citizens** to be heard.
3. Cambridge citizens will continue to be engaged, and **developing inclusion strategies** throughout the modelling process will **decrease re-planning costs** and **negotiation time**; and **increase trust** in the value of modelling evidence.
4. Public scrutiny in Cambridge has increased in the past years with the **manifestation of economic growth on citizens' everyday lives**, and will continue to demand **evidence-based policy-making** using **traditional** and **new methods**.

Research Acknowledgements

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