Emerging technologies for resilient cities

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Digital Catapult is:

1. Here to help grow the UK’s digital economy
2. A not-for-profit, private limited company
3. Completely neutral
What we do in the BE space…

Stimulate the adoption and exploitation of data

Accelerate the transfer of digital possibilities within construction

Make links with SMEs to address evidenced challenges within construction

Look at emerging new tech and its application (sensor technology, new communications networks and the use of VR / AR / MR)
Why are cities problematic to address?

City data are clearly very important, but the market is not immediately there to fund it.

It involves multiple stakeholders and multi-year decisions.

More is needed to unlock the market.

Plan for change, not technology.
Urban change is not new

Robin Reynolds (2016)
Resilient is different from sustainable

Environment

Infrastructure

Economy

Society

Productivity
Three main classes of city solution

Excel/VBA (macro) based models

Custom software models

‘Smart City’ models
Solving urban challenges with data

- Forecasting Climate Change Impacts on Urban Electricity Distribution Network Loads
- SkillsPlanner
- Dynamic Insights for Health Care
- NEXUS - Real Time data fusion and Network Analysis for Urban Systems
- Engaged Smart Transport

Source: http://gtr.rcuk.ac.uk
Entirely data driven

- Historical data
- Real-time data
- Predictive analytics
  - dependent on robustness of previous data and need a lot to make it work
- All down to a good data strategy as it is very difficult to start collating data in retrospect
- This is our Achilles heal - relies on collaboration, which is challenging and not in our nature
Access to data is our \((2^{\text{nd}})\) biggest barrier

- Clarity
- Quality
- Security
- Provenance
- Cost
- Fragmentation
Emerging solutions

OpenSensors.io

Things Connected

witan

witan.mastodonc.com

thingsconnected.net
PropTech Co’s are changing our cities
Competing for the pride of the human race

Artificial Narrow Intelligence (ANI)

- chess, draughts, and Go
- Imperfect information
- Alternative facts
- The Turing Test

A major step forward in developing Artificial General Intelligence (AGI)
AI in our cities
If I could only afford a TESLA
Bored of your reality?
Blockchain

Internet is about the exchange of information

Blockchain is about the exchange of assets and value
May you live in interesting times
THANK YOU

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