



Agenda

- 1. ODI data trusts programme
- 2. Findings
- 3. What's next?









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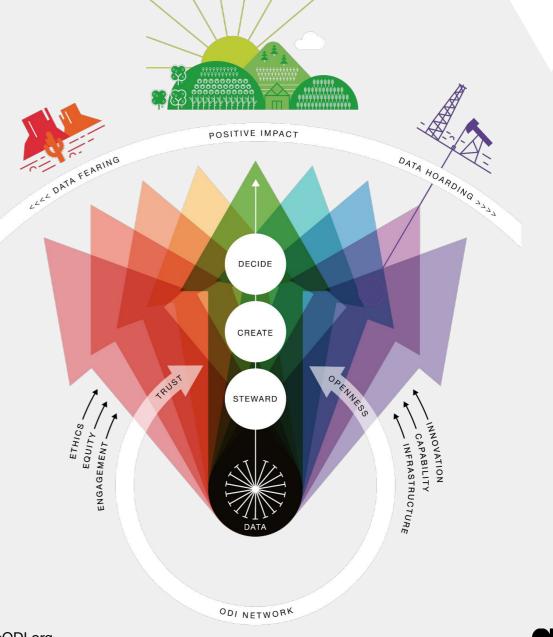
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We need to increase access to data while preserving trust





There are a number of data access approaches



There is a family of collaborative approaches



Independent report

Recommendations of the review

Published 15 October 2017

Recommendations to improve access to data

1. To facilitate the sharing of data between organisations holding data and organisations looking to use data to develop AI, Government and industry should deliver a programme to develop Data Trusts – proven and trusted frameworks and agreements – to ensure exchanges are secure and mutually beneficial.



- A data trust as a repeatable framework of terms and mechanisms.
- A data trust as a mutual organisation.
- A data trust as a legal structure.
- A data trust as a store of data.
- A data trust as public oversight of data access.

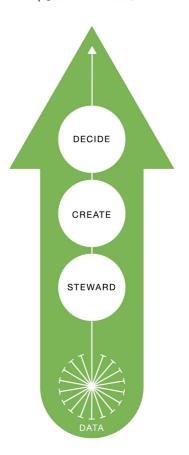


Data stewards

Decide who has access to data, under what conditions and who can benefit from it.



POSITIVE IMPACT





What is a data trust?

A legal structure that provides independent stewardship of data.

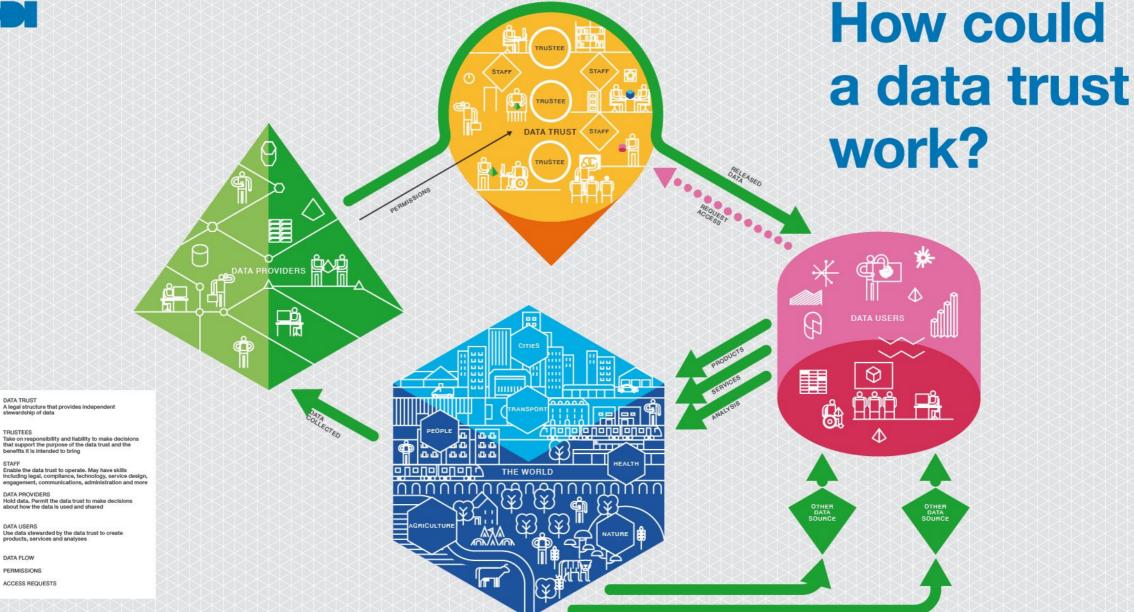
With data trusts, the organisations that collect and hold data permit an **independent** institution to make decisions about how that data is used and shared for an agreed purpose.

The **trustees** of the data trust take on responsibility for how data is used and shared and take on some liabilities. They must ensure these decisions support the purpose of the data trust and the benefits it is intended to bring.

While data trusts cannot take the form of 'trusts' in a legal sense, they use **legal structures** and forms that take their inspiration from them.







Pilot projects to understand

- 1. the types of challenges that data trusts could be used to address, as well as their limitations
- 2. what 'a legal structure that provides independent stewardship of data' looks like in practice
- 3. how data trusts could be built and the process made more repeatable



Pilots



City

data about electric vehicle parking spaces and data collected by heating sensors in residential housing



Food waste

food waste and sales data



Illegal wildlife trade

image, acoustic and data acquired by officials at borders



Pilot methodology

A multi-disciplinary team undertaking (over three months):

- user research
- legal analysis
- designing decision-making processes
- technical architecture assessments
- data governance
- economic research
- assessing the viability of implementing data trusts





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Setting up a data trust: potential benefits

- balance conflicting views and incentives
- reduce costs and skills needed to steward and share data
- make decisions that organisations make about data use and sharing more open, participatory and deliberative
- ensure data's benefits are distributed more widely, ethically and equitably
- create new opportunities for startups and emerging technologies



Lessons (1/2)

- We need to consider whether the term 'data trust' is appropriate
- Data trusts should be created without using trust law
- Data stewardship might not be recognised by relevant regulators
- Data holders may find data trusts useful because they lack capability themselves
- Scoping and co-designing requires significant commitment from data holders

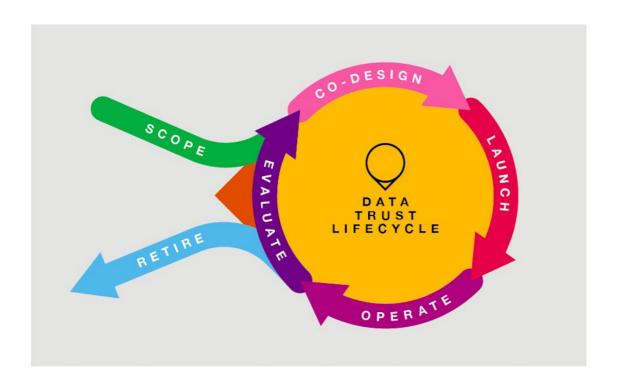


Lessons (2/2)

- It is currently difficult to estimate the effort required to build or operate a data trust
- There is a huge appetite to trial data trusts
- To be a trusted data steward, data trusts need powers over data users
- Data trusts need a multidisciplinary team
- There are still risks around technology-first solutions



Building data trusts



Scope

Establishing what the problem is

Co-Design

Designing a data trust collaboratively

Launch

Building and implementing a data trust

Operate

Maintaining and building on the initial structure

Evaluate

Assessing effectiveness, including external evaluation

Retire

Retiring a data trust if it has served its purpose





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For people who want to create an enabling environment

- 1. Monitor the use and impact of data trusts
- 2. Develop tools to enable people and organisations to assess the trustworthiness of data trusts
- Consider where data trusts should be mandated or funded

. . .



For data holders exploring data trusts

- 1. Ensure data trusts are an appropriate data stewardship approach to meet your goals
- 2. Use and improve the data trust life-cycle
- 3. Be trustworthy in how you collect, use and share data

. . .



For people who want access to data held by organisations, or are concerned about how it is held

- 1. Join forces with others to request access to data
- 2. Advocate for data trusts, and other models, over point-to-point data sharing agreements



Recommendations to GLA/ RBG

- 1. Define a clear purpose
- 2. Make sure the incentives to share data are understood
- 3. Start small and prove the need
- 4. Understand how citizens will need to be involved from the beginning

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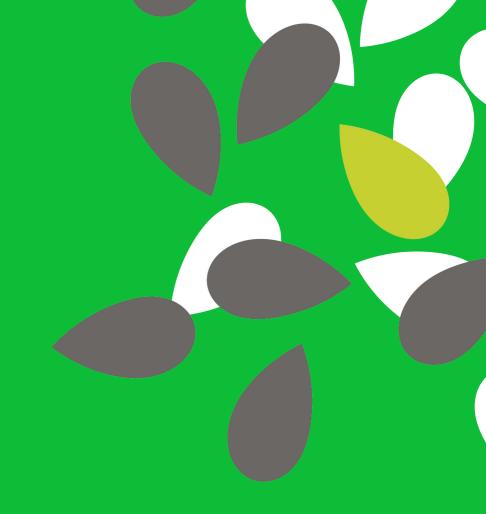
https://theodi.org/article/data-trusts-gla/







Thank you



@jhardinges

@ODIHQ



City Al Ethics Smart London Board Update

@EddieACopeland





10 QUESTIONS TO ANSWER BEFORE USING AI IN THE PUBLIC SECTOR

ASSUMPTIONS

What assumptions is the Al based on and what are their limitations and potential biases?



ETHICS

What assessment has been made of the ethics of using this AI?



OBJECTIVE

Why is the AI needed and what outcomes is it intended to enable?



DATA

What datasets is / was the Al trained on and what are their limitions and potential biases?



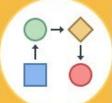
OVERSIGHT

What human judgement is needed before acting on the AI's output and who is responsible for ensuring its proper use?



USE

In what processes and circumstances is the Al appropriate to be used?



INPUTS

What new data does the AI use when making decisions?



EVALUATION

How, and by what criteria, will the effectiveness of the AI be assessed, and by whom?



IMPACTS

What impacts - good and bad - could the use of the AI have on people?



MITIGATION

What actions have been taken to migitate the negative impacts that could result from the Al's limitations and potential biases?



@EddieACopeland @nesta_uk

nesta

Laws

Existing Context

Use of Al

Questions

Guiding checklist of steps to "show your workings" before using Al

Methods

Iterative process of discovery, prototyping and feedback around problems and solutions

City Objectives

Training

Development of skills, attitudes and mindset needed by public sector staff to use AI appropriately

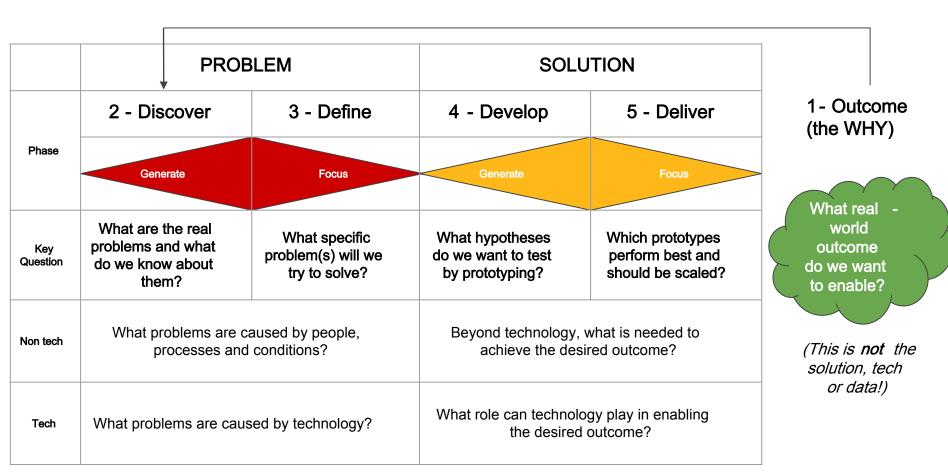
People

Robust process for consulting and involving a diverse range of people in the design and use of Al

Ethics

Values

Starting with the end in mind





Creative Facilitation

Building Bridges

Brokering

WORKING **TOGETHER**

Agile

Actionoriented

Curious

Reflective

Outcomesfocused

EXPERIMENTING &

PUBLIC PROBLEM

SOLVING

Empathetic

Courageous

LEADING

ACCELERATING LEARNING

new ideas to inform and validate solutions

Future Acumen

Prototyping & Iterating

Data Literacy & Evidence

Systems Thinking

Tech Literacy

CHANGE

Resilient

with resistance

Imaginative

Exploring and

Storytelling & Advocacy

Political &

Bureaucratic Awareness

Financing change

Intrapreneurship

decision-making purposes

Being insurgent and use business

Demonstrating Value Articulating the value of new

> Public sector innovators combine key attitudes and skills to successfully drive innovation in government and solve public problems



Government plans to develop a National Digital Twin — an ecosystem of digital twins that are connected by securely shared data and one common approach.

Together, the 'digital twins' outlined in this presentation represent the built environment as it is, as it was, and is it could be in future. And increasingly, we are looking at tools that look beyond the built environment...



London's Digital Twins help answer (previously) difficult questions...

Questions	Digital Twin
Where should infrastructure providers increase capacity to accommodate growth? Where can infrastructure providers coordinate so that they dig up the road only once?	London Infrastructure Mapping Application (2016 -)

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How can we reduce energy costs and increase efficiency by anticipating changes in energy demand?	Smart Energy Management Systems (2018)

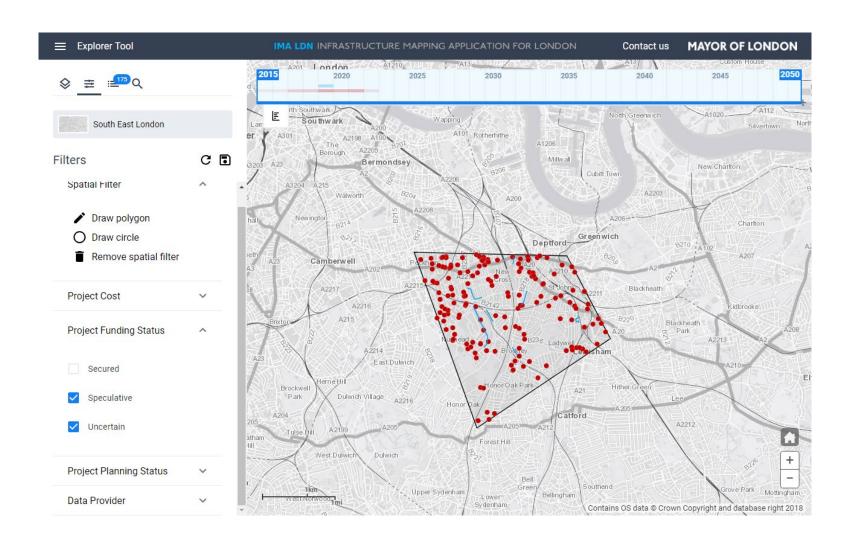
Questions	Digital Twin
How can we most effectively move towards a zero carbon London? Which of London's buildings should be retrofitted to increase energy performance?	London Building Stock Model (2019)
How can policy protect London's cultural infrastructure (e.g. rehearsal space)?	Cultural Infrastructure Map (2019)
How can we monitor projects better?	Project simulators (in existence, not currently applied in London context)
How does the UK infrastructure system impact on us?	Various national models

Nb -

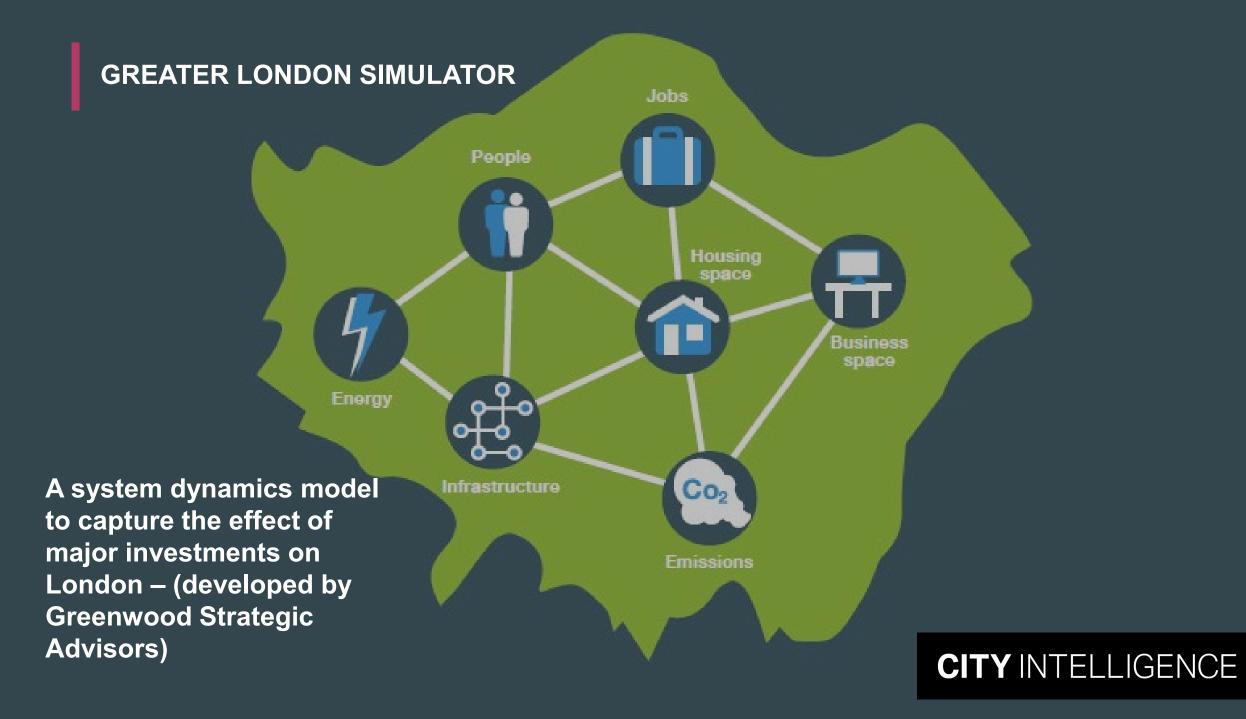
- Digital twins can help answer different questions...
- Not all questions can solely be answered by a single 'twin'...
- Other questions and twins emerging and interacting, revisiting...
- Traditional modelling can also be brought into this concept...



LONDON INFRASTRUCTURE MAPPING APPLICATION



A web-based tool bringing together infrastructure future investment plans, capacity information, and development data to support better infrastructure planning and coordination

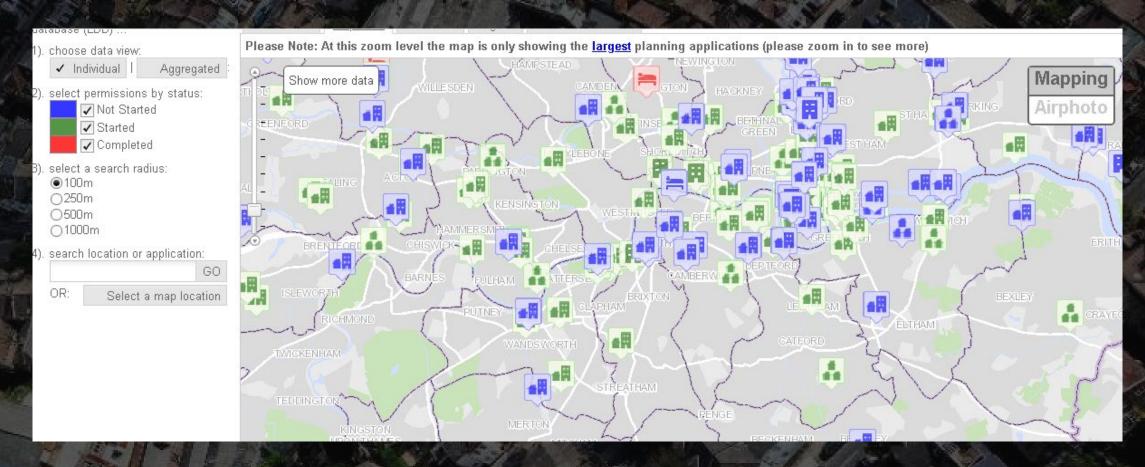








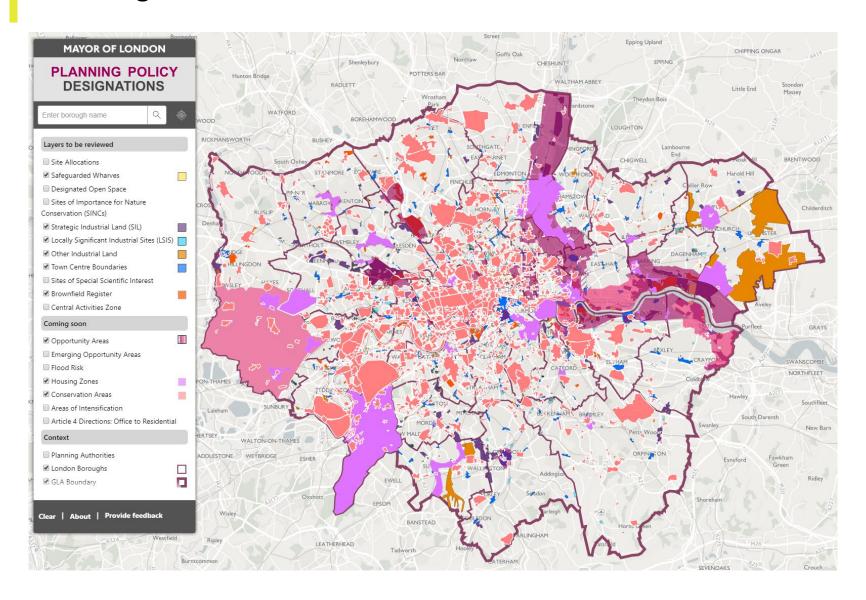
London Development Database Automation



Creating a live, public stream of comprehensive planning and development data for London

CITY INTELLIGENCE

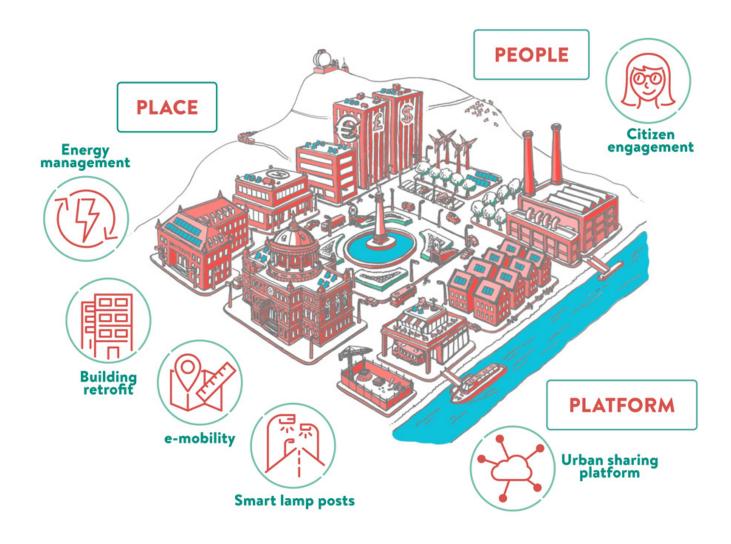
Planning Constraints



Creating and maintaining a live open spatial data set for all recorded planning constraints in London



Smart Energy Management Systems – Sharing Cities



A tool to optimise a neighbourhood's energy use via advanced predictive control software

London Building Stock Model

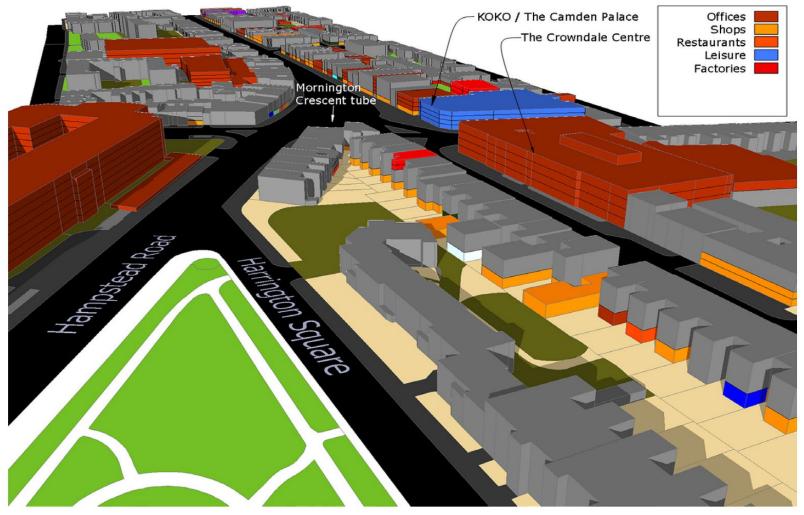
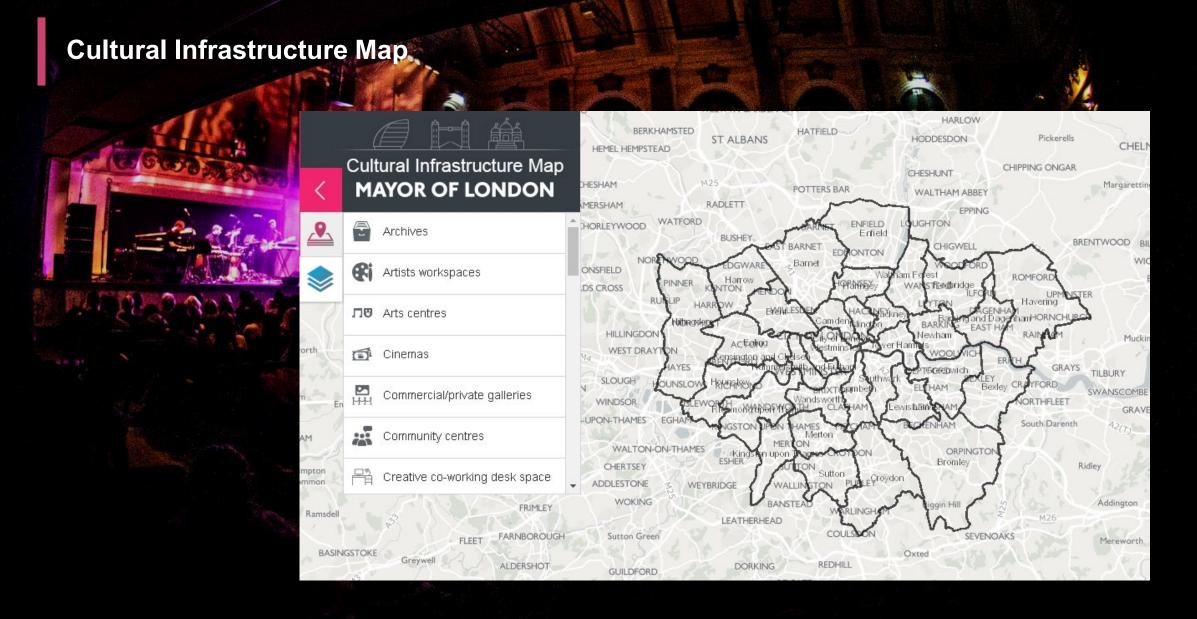


Figure 0—1 3DStock model of Camden High Street. Colours code for activity groups: grey is domestic.

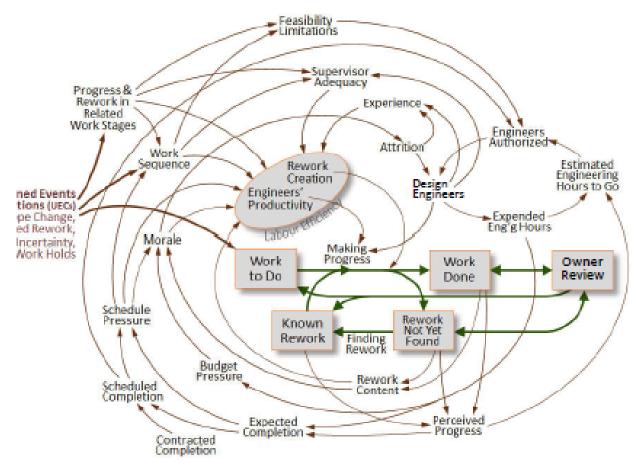
A digital representation of London's building stock, including environmental information





CITY INTELLIGENCE

DYNAMIC SIMULATION OF DESIGN / BUILD PROJECTS



System view of a design work-stage in a large project

Diagnosing, anticipating, safeguarding and improving project performance

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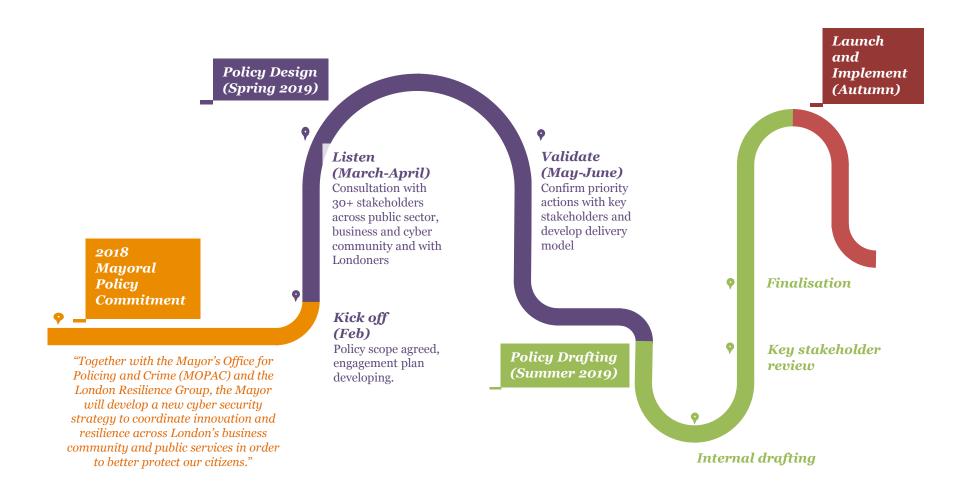
AGENDA

- 1. Smarter London Together Cyber Policy commitment
- 2. Cyber policy roadmap
- 3. Consultation findings
- 4. Next steps

1. SMARTER LONDON TOGETHER COMMITMENT

"Together with the Mayor's Office for Policing and Crime (MOPAC) and the London Resilience Group, the Mayor will develop a new cyber security strategy to coordinate innovation and resilience across London's business community and public services in order to better protect our citizens."

2. CYBER POLICY ROADMAP



3. CONSULTATION FINDINGS

3.1 WHERE ARE WE NOW?

- London is...
 - a world-leading Smart city
 - home to Europe's largest cyber hub
- Some organisations are innovating cyber-secure smart services
- But many public and private sector organisation have less mature cyber security and need additional support
- Under developed cyber capacity may prevent many organisations from benefiting from digital transformation
- Key cyber-related risk that will impact London's future growth include:
 - 1. Poor awareness within leadership
 - 2. Lack of focus on resilience.
 - 3. Low staff capacity and awareness
 - 4. Underinvestment in cyberservices and training
 - 5. Poor procurement practices

- 6. Supplier underperformance
- 7. Rise in connected devices
- 8. Out of date infrastructure
- 9. Poor awareness of existing advice
- 10. Massive Skills shortages

3. CONSULTATION FINDINGS 3.3 WHERE DO WE WANT TO BE?

- London's future as a Smart citizen-centric City is reliant on achieving cyber maturity
- To achieve this, co-ordinated city-level support is needed
- It is imperative that this support is provided now, so Londoners can benefit from digital transformation
- It is important that the GLA helps deliver more:
 - Cyber-resilient public services
 - Secure businesses
 - A vibrant global cyber hub
 - Safer citizens

3. CONSULTATION FINDINGS STAKEHOLDER CONSULTATION

A. Cyberresilient public services B. Secure businesses

C. Supporting cyber sector growth

D. Safer citizens

MOPAC, LOTI, British Standards Institute, ETSI, PETRAS, NCSC, DCMS, Tech UK, Global Cyber Alliance

GLA

Transport for London

London's Local Authorities

London Legacy Development Corporation

London Prepared

LGA, NHS, ISFL, MHCLG, CC2i Police Digital Security
Centre

Resilience First

Cyber Griffin

LORCA

London and Partners

Level 39

Metropolitan Police

City of London Police

Skills for Londoners

3. CONSULTATION FINDINGS A. CYBER-RESILIENT PUBLIC SERVICES



Strengths and weaknesses

Whilst some public sector organisations are leading the way in cyber secure service delivery, significant additional support is needed if the public sector is to benefit from digital transformation and the opportunities that smarter service delivery can provide.

Strengths

- Some public sector orgs
 - · demonstrating cyber leadership
 - Innovating cyber-secure procurement
 - Innovating cyber secure 'smart' services
- Various orgs providing capacity building support
- London Prepared are stepping pan-London cyber resilience co-ordination
- LOTI launch will provide additional resources

Weaknesses

- Public services only as secure as their weakest link
- Under resourcing of cyber security across the board
- Lack of senior leadership and co-ordination
- Continued under resourcing may mean that London public services are unable to fully benefit from promise of digital transformation and smarter service deliver

- Set the bar, and support public service providers in achieving the cyber resilience required to benefit from digital transformation and support smarter future services
- Provide leadership across London's public services so that ALL London's partners are aware of the need to, and benefits of, becoming more cyber secure
- Support co-ordination of capacity build support
- Provide cyber leadership training to ensure improved cyber leadership across public services
- Provide Procurement training to enable improved procurement decision making
- Ensure, over time, that public sector suppliers are provider cyber secure services – in order to ensure 'soft underbelly' is protected
- Support future proofing of emerging 'smart' city services e.g. harnessing IoT, or data trusts
- Support ramp up of London Prepared cyber activities

3. CONSULTATION FINDINGS B. SECURE BUSINESSES



Strengths and weaknesses

Whilst there are a number of organisations supporting businesses, players are generally small and capacity constrained, both in terms of the direct services they can provide, and their outreach capacity. However with co-ordination and outreach support they could theoretically offer a coherent support model, reaching a much wider spread of London's small businesses.

Strengths

- Large corporates already investing in cyber
- Range of organisations already supporting SMEs
- PDSC cyber aware assessment and certification provides accessible entry point for SMEs
- Large volume of online guidance for all businesses

Weaknesses

- Low awareness of cyber resilience at board level
- Very poor awareness of cyber risk in SMEs
- Few SMEs access info on, or invest in, cyber
- Private sector cyber providers to SMEs often oversell, and many providers will not support SMEs
- Initiatives supporting SMEs are small non-profits / public sector orgs with limited reach and resourcing
- Paucity of comms materials which make cyber 'real' and personal for business owners
- Poor outreach coverage of SMEs

- Greater co-ordination needed between orgs supporting businesses
- Opportunity to better signpost material and online / in-person support to SMEs
- Need to improve messaging to SMEs focus on real life, case study examples – not big biz/tech threat
- Need to increase outreach to SMEs and find better more comprehensive channels
- Need to provide greater resourcing and skills support to SMEs – link to skills gap, potential overlap with opportunities to develop cyber careers
- Need to improve private sector advisory /product support to SMEs
- Need to increase awareness of and uptake of existing products / services by SMEs

3. CONSULTATION FINDINGS C. SUPPORTING CYBER SECTOR GROWTH



Strengths and weaknesses

London has a world-leading cyber sector, and the Mayor and the CDO should seek to build on this lead through activities aimed at supporting the sector to grow. This means supporting current weaknesses getting earlier stage companies that serve the public sector to access finance, and those with mature products and services to get to market quicker.

Strengths

- Accelerator programmes well-connected into public sector stakeholders and corporates
- Access to finance (when the target clients of cyber startups is the financial services sector)
- BSI leader in developing kitemarks that startups can use
- Strong business growth programmes (L&P, GLA)

Weaknesses

- Access to finance (when the target clients of cyber startups are the public sector)
- Public sector doesn't identify their needs to the cyber sector
- Collaborative R&D programmes not well-developed
- Public sector doesn't employ innovative procurement procedures
- Poor diversity in sector means that product design processes miss out on wider perspectives.

- Support more cyber firms to reach industry standards/kite marks needed to get to market
- Encourage R&D between business of all sizes and cyber firms
- Supporting cyber innovators to run their business and to access growth capital
- Supporting cyber innovators to get to market through programmes like the Civic Innovation Challenge and work to support London's GovTech sector.
- Supporting cyber delegations (e.g. L&P)
- Work jointly with L&P, DIT and TechUK to identify critical cyber export promotion activities
- Work with LOTI, ISFL and London Prepared to identify public sector cyber needs
- Work with LORCA to deliver a mini public sector service accelerator
- Work with partners to explore alternative procurement methods than could unlock public-private sector cyber security collaborations
- Develop digital apprentice programmes

3. CONSULTATION FINDINGS D. SAFER CITIZENS



Strengths and weaknesses

Although there is much advice available online, the information is spread across many stakeholders, and it is uncertain which resources are updated frequently in this fast-moving field. The nature of advice and basic digital skills partnerships and delivery that pose risks of citizen confusion, especially for vulnerable groups. Citizens that want to be trained to work in the sector have increasing, but time-limited, resources available.

Strengths

- Information online via NCSC
- Near-real time alerts through Neighbourhood Alert Platform
- Direct protection offer (Quad9)

Weaknesses

- Advice sources fragmented between NCSC, City, Met Police, DCMS, and partner organisations (e.g. Get Safe Online)
- Basic digital skills fragmented between FE and police roadshows
- Time-limited programmes in cyber workforce training
- Skill shortage in cyber; no messages to citizens to train to enter workforce

- Identify London-based amplification partners as NCSC expands its citizen-oriented activities
- Help City Police direct Londoners to use GCA's Quad9 on their computers/mobiles
- Amplify PDSC and MOPAC messages to citizens on how to safely use public Wifi
- Invite citizens to be testers (e.g. Met's recent global pentesting competition attracted 70,000 applicants)
- Promote citizen skills programmes / support through Mayoral communications channels
- Connect Digital Basic Skills to larger NCSC/Police advice
- Support for cyber apprenticeships, by recruiting new host businesses
- Engage with DCMS Cyber Security Immediate Impact Fund to develop an innovative cyber training scheme
- Actively market cyber careers to adults with Skills for Londoners

3. CONSULTATION FINDINGS

3.3 PROMOTED ACTIONS

A. Cyberresilient public services

- 1. Promote improved cyber leadership in public sector
- 2. Ensure London can respond to cyber events
- 3. Set the bar for cyber-secure public services in London
- 4. Promote cyber security in public sector supply chains
- 5. Support development of future cyber security approaches

B. Secure businesses

- 1. Communicate importance of cyber security to London's SMEs
- 2. Develop a Mayoral business cyber support coalition
- 3. Help SMEs access cyber secure technologies/ services

C. Supporting cyber sector growth

- 1. Support development of London as a global cyber hub
- 2. Promote investment into, and export of cyber services
- 3. Help innovate new public-sector cyber support services
 - 4. Improve sector diversity

D. Safer citizens



- 1. Amplify MOPAC and NCSC messages to citizens
- Actively develop citizens cyber and digital skills
- 3. Secure public Wifi and improve citizen awareness of Wifi risks
- 4. Promote cyber careers to Londoners

Significant additional support requested; Greater additionality

Fragmented space with less asks; Lesser additionality

4. NEXT STEPS

Review approach

- Agree and prioritise actions internally
- Review resourcing required

Re-engage stakeholders

- Citizens: Action Talk London / focus group engagement
- Business/Public sector: Re-engage stakeholders to review/refine/agree actions

Policy Design (Spring 2019)

Listen (March-April)

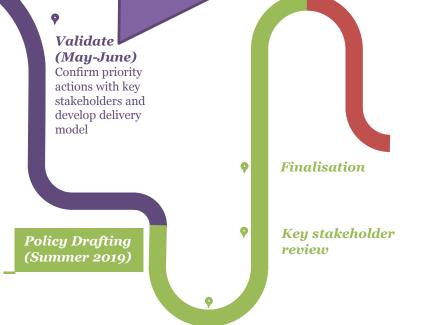
Consultation with 30+ stakeholders across public sector, business and cyber community and with Londoners

Kick off (Feb)

Policy scope agreed, engagement plan developing.

2018 Mayoral Policy Commitment

"Together with the Mayor's Office for Policing and Crime (MOPAC) and the London Resilience Group, the Mayor will develop a new cyber security strategy to coordinate innovation and resilience across London's business community and public services in order to better protect our citizens."



Internal drafting

