

**Data and Public Services  
Toolkit guide + Checklist**

# How?



Methodology and training tools

We all rely on public services – from bin collections and road maintenance to schools and libraries. Local authorities provide essential citizen services but face the challenges of growing demand and limited resources.

Using data well in public services can help streamline processes, improve access to information for citizens, and enable innovators.

At the ODI, we have worked with local authorities across the UK to find and showcase data-enabled innovation in local public services.

We found that local authorities face consistent challenges when trying to use data – from a lack of clarity about what data is available or evidence of the value, to concerns over the ethical implications of using data.

This toolkit aims to help people designing and delivering public services overcome these barriers. The tools are designed to be used collaboratively by all involved in services, not just people with technical skills.

### **The Data and Public Services Toolkit includes:**

Data and Public Services Toolkit guide + Checklist

Data and Public Services Business Case Canvas

Data Ethics Canvas

Data Ecosystem Mapping

For more information visit [theodi.org/tools](https://theodi.org/tools). To let us know what you think, get in touch at [info@theodi.org](mailto:info@theodi.org)

|   |      |
|---|------|
| <b>Context</b>                                      | 3    |
| <b>Using data in public services</b>                | 5    |
| <b>The Data Spectrum</b>                            | 6    |
| <b>Open and shared data</b>                         | 7    |
| <b>The tools and how to use them</b>                | 9–12 |
| <b>Common challenges and how the tools can help</b> | 13   |
| <b>Who can use the toolkit?</b>                     | 15   |
| <b>Case studies:</b>                                |      |
| The Great British Public Toilet Map                 | 19   |
| Smartline   | 21   |
| Leeds Bins  | 23   |
| Kent County Council reducing fuel poverty           | 25   |
| North Lanarkshire                                   | 27   |
| <b>How do you design to scale?</b>                  | 29   |
| <b>Checklist: How to design to scale (foldout)</b>  | 30   |
| <b>Appendix</b>                                     | 33   |

When designing and delivering public services, using data well can help make them more accessible to people and organisations; make the services themselves more efficient; and help make policy interventions more targeted.

The case studies in this booklet show how data can be used to deliver innovative public services.

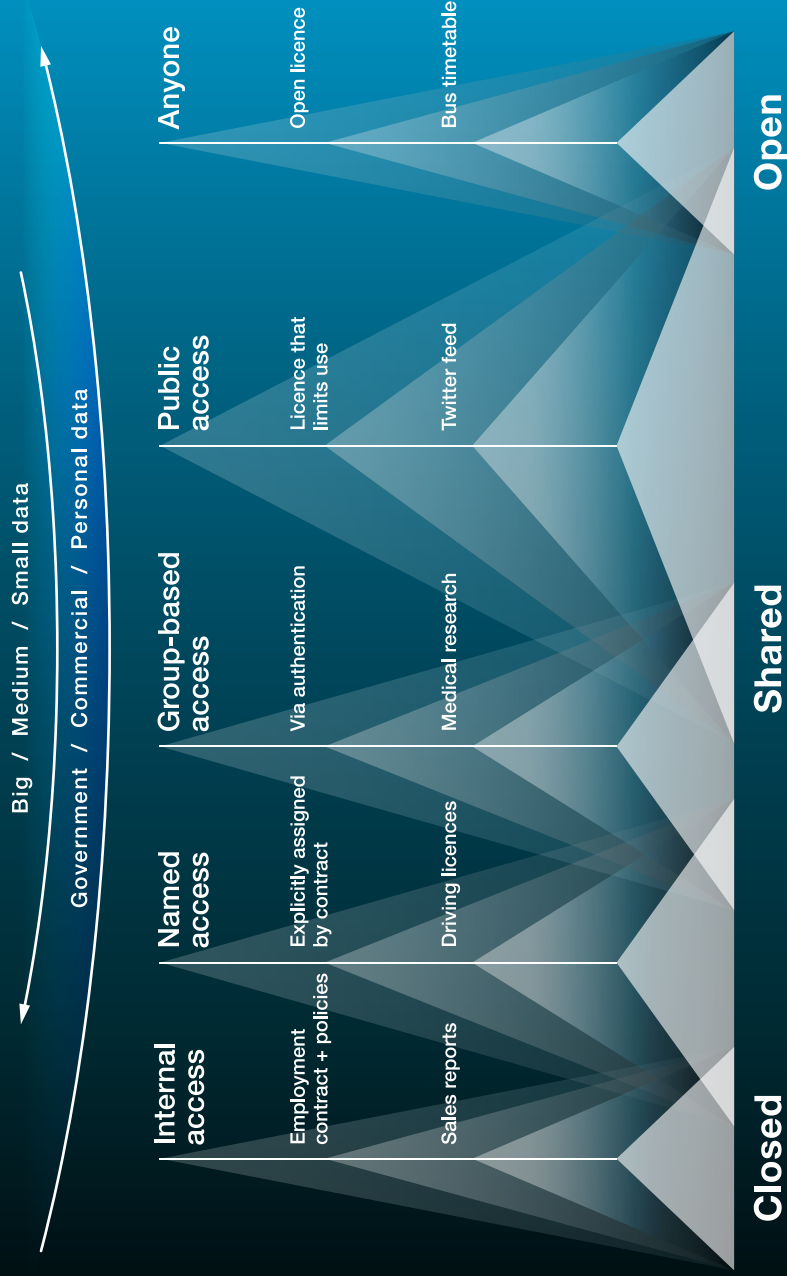
- **Great British Public Toilet Map** – mapping public toilets
- **Smartline** – using technology to help residents live healthier and happier lives
- **Leeds Bins** – an app to find bin collection dates and details
- **Kent County Council** – reducing fuel poverty with data
- **North Lanarkshire** – publishing data to reduce Freedom of Information (FOI) requests

Through our research we have defined three high-level ‘patterns’ for how open data is used in public services:

- 1. To improve access to public services**
- 2. To make service delivery chains more efficient**
- 3. To better inform policy development**



# The Data Spectrum



## Open and shared data

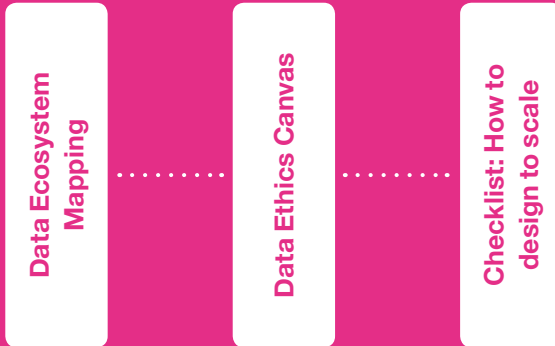
Data exists on a spectrum, from closed data to shared data to open data.

Data that is made open, or shared, presents huge opportunities for the public sector to enable innovative services. For example, the datasets that Transport for London has made open – openly licensed for anyone to access, use, and share – have been used by innovators to create journey-mapping apps to help people navigate the city.

We must make data infrastructure as open as possible, while protecting people's privacy, commercial confidentiality and national security. The important thing is how data is licensed.

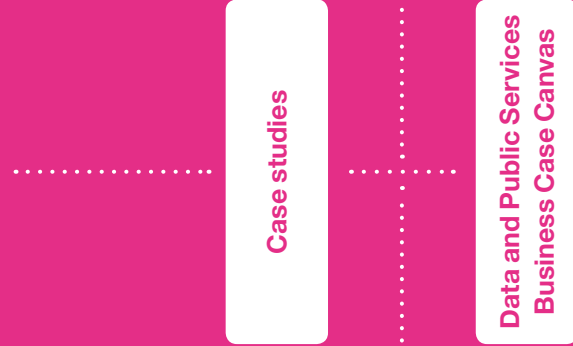
## Design and plan

Use these tools to help you understand the communities who will benefit and build on your work:



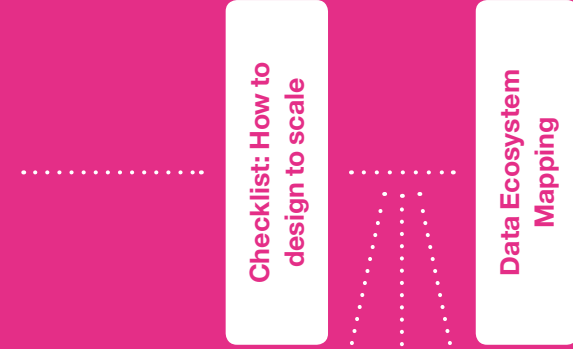
## Pitch

Use these tools to pitch the data use for your service and gain organisational support:



## Grow

Use these tools to grow your service in your region and scale out to other regions:



## The tools and how to use them

The ODI's Data and Public Services Toolkit is a set of collaborative tools to help people working on public service projects use data well. The toolkit includes:

The **Data and Public Services Business Case Canvas**, to help develop a business case for data-enabled public services that deliver your organisational objectives and meet user-needs.

The **Data Ethics Canvas**, to help you to identify any potential ethical issues in projects using data.

A guide to **Data Ecosystem Mapping**, helping you to understand how value flows through your wider ecosystem; and to plan the technical and organisational relationships you need to deliver a service.

**This guide** contains case studies of shared and open data being used to create or improve public services – they demonstrate the value of data in public service delivery, and benchmark requirements.

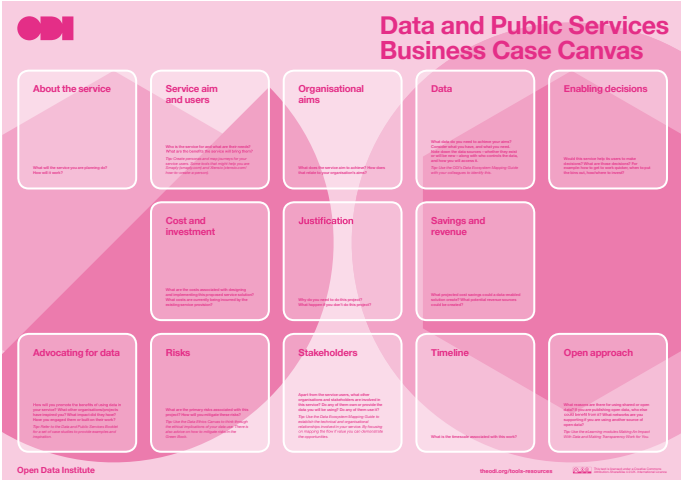
This booklet also contains a **Checklist: How to design to scale**. When designing a project or finishing a pilot, the checklist offers steps to take to share learnings and help others replicate your work.

The tools are flexible in how they can be used. You can use them as an individual or to stimulate conversation in a group setting – such as a team meeting, project review or workshop.

The tools can each be used independently or together as a set, at different stages of service development, from design to delivery.

You may not have all the answers the first time around, but you can add to your responses as you revisit the tools, to keep informing and improving how you design and deliver your services.

# Data and Public Services Business Case Canvas

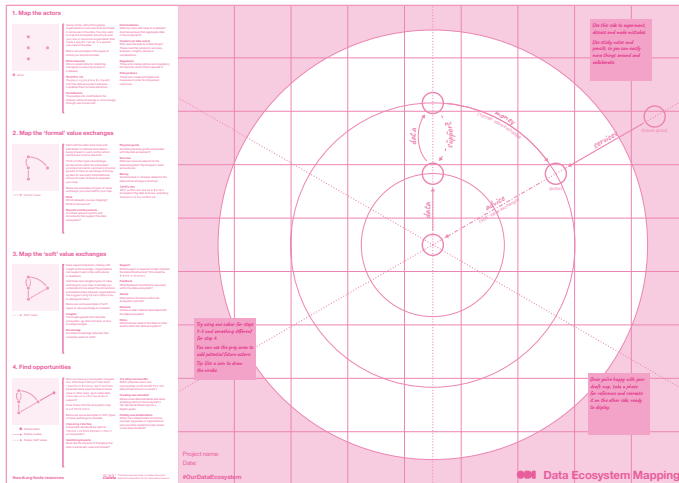


This is a tool that helps you to develop a business case for data-enabled public services. You can advocate for the use of open data in your services by creating a business case that demonstrates how data can help deliver your organisational objectives and meet user needs in an innovative way.

# Data Ethics Canvas



This tool helps you to identify potential ethical issues associated with a data project or activity. Use this to ensure that ethical – and legal – use of data is considered from the very beginning of your project, and throughout. It can feed into your business case for using data, or be used on its own.



The process of mapping a data ecosystem helps to identify and plan the technical and organisational relationships needed to deliver a service. Use this tool to help bring different stakeholders together to understand the flow of value through your data ecosystem. This can inform your business case, and be a useful standalone tool for project planning and delivery.

Local authorities face common challenges when trying to use data – from a lack of clarity about what data is available or a lack of evidence about the value of using data, to concerns about potential ethical issues.

### **It can be hard to know where data is and how it creates value**

The Data Ecosystem Mapping tool can help you to understand your data ecosystem, relationships within it and how to find opportunities to create more value.

### **There can be concerns about ethics**

The Data Ethics Canvas helps to identify and mitigate ethical implications in projects using data.

### **Getting buy-in from management can be a challenge**

The Data and Public Services Business Case Canvas helps to articulate why it is beneficial to use data in a service, and how using specific data helps meet organisational aims and user needs.

### **It can be difficult to collaborate across teams**

Local authorities often work in silos. All of the tools in the Data and Public Services Toolkit are designed to be used with colleagues across departments and disciplines, helping you to convene and collaborate.

### **Tangible examples of open data's value can be hard to find**

The case studies in this booklet – and on the ODI website – show evidence of the value and impact of open data initiatives in local councils.

### **It can be difficult to know where to start**

By using the Checklist: How to design to scale (summarised in this booklet), you can ensure that others can learn from and replicate your work.



## Who can use the toolkit?

The Data and Public Services Toolkit is aimed at helping anyone developing a public service using data. It can help inform the business case for a data-enabled service, identify ethical issues, and plan a data ecosystem to enable innovation.

We recommend that you ask for contributions and feedback from people in your organisation who fit the profiles listed below. There may be one person who does more than one of these roles, or several people who do them. We suggest using the tools as a way of getting their feedback and expertise.

### **Service Delivery Manager**

This person is responsible for the design of new services and needs to be able to demonstrate the process to others. It is likely that this person will be the one to create the business case, and oversee the design and delivery of the service. They need to meet the needs of the community and the strategic goals of the organisation.

### **Service design team**

Teams building a public service often include the following roles or skills: Product Manager, Service Owner, User Researcher, Content Designer, Designer and Developer. Involve these people early to shape your ideas.

### **People and communities**

These are the service users and constituents, with respective needs that ought to be understood and met by the service.

### **Budget holder**

This person will review and approve the business case for a data-enabled service. They want to ensure they use their budget wisely – they are looking for cost savings, efficiencies, and innovative opportunities.

*Continued overleaf*





### Data user (eg Data Analyst)

This person is passionate about the possibilities of data but needs their leadership team to see it and take a strategic view of the benefits. They can inform the business case for a data-enabled service from a technical perspective.

### Compliance Officer

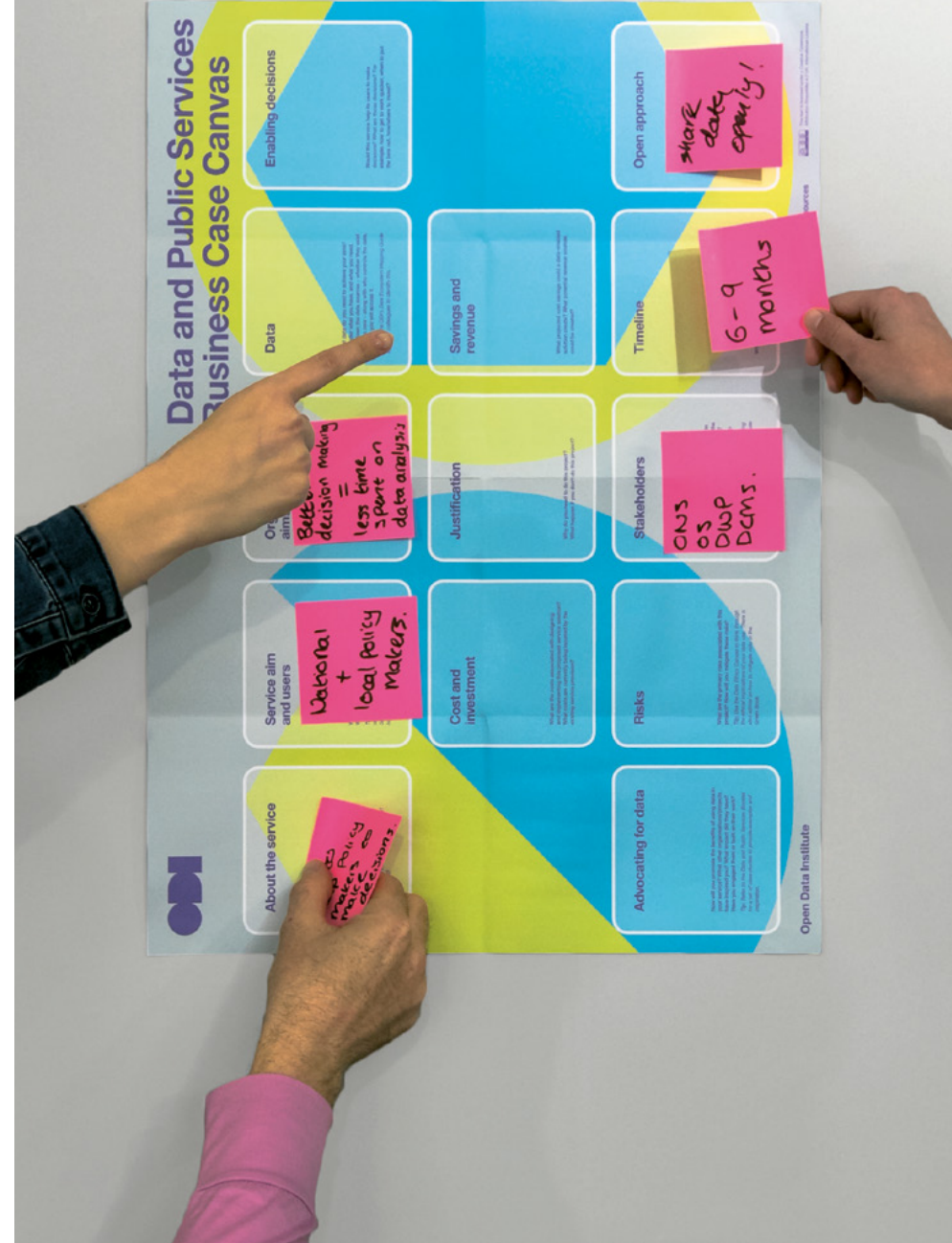
This person helps the organisation comply with its legal and contractual obligations, while enabling services and projects to deliver. They can be useful in informing a business case about risks. They may also be called a 'Data Protection Officer' or something similar.

### Digital Transformation Lead/Chief Digital Officer

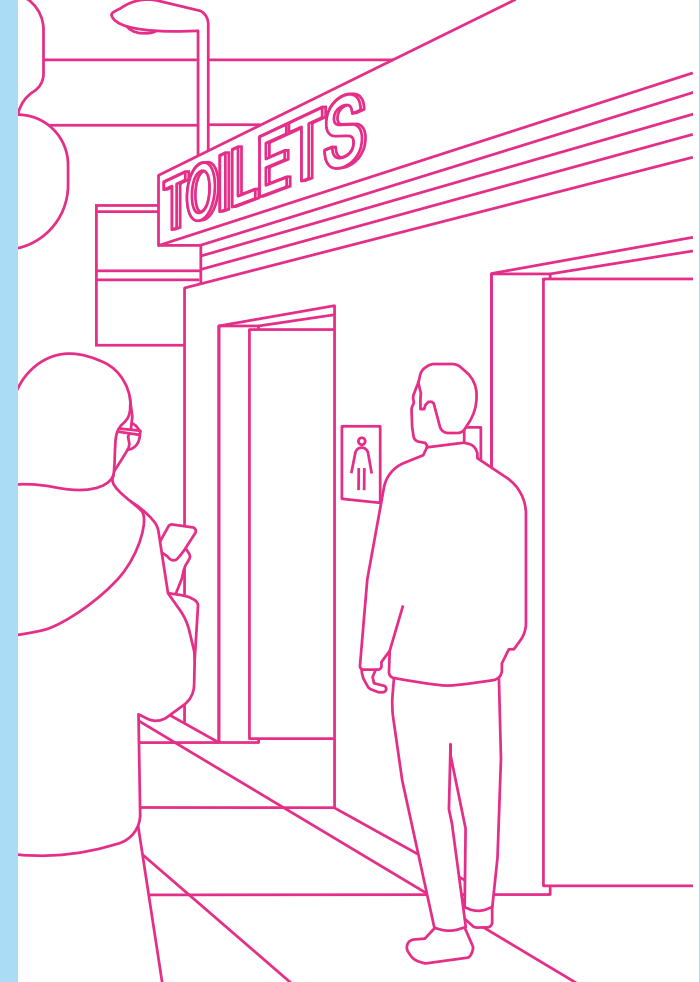
This person collaborates with colleagues throughout the organisation to find new ways of delivering public services. They can help by bringing departments and organisations together.

### Suppliers/third parties

Public services are often developed by a combination of organisations and providers. Include these groups in the conversations you have when you use these tools.



# Case study: The Great British Public Toilet Map



Across the UK, more than one in every three public toilets have been closed over the last two decades. Some councils no longer provide a single free public toilet. For some people, this is an immediate problem – particularly those with disabilities, digestion illnesses or parents who need baby-changing facilities.

**The Great British Public Toilet Map** uses data to develop a customisable map of publicly-accessible toilets, with a database of over 11,000 facilities. People can access the map online and find their closest toilets, how accessible they are, when they are open, and whether they have extra facilities such as baby-changing stations.

There were initially two national datasets with details of public toilets – Ordnance Survey and OpenStreetMap data. But these only had data on the buildings toilets were in, not accessible toilets in other public spaces such as shopping centres, train stations and cafés.

Gail Ramster – a researcher in community-led design – set about building a map combining this data with data from other sources. She encouraged local councils to publish the toilet data they held, to include in the map.

The UK's Local Government Association has included public toilets in its local open data incentive scheme, so more councils are publishing toilet-location data.

Users can also submit toilet locations, add ratings and update the map when a toilet is no longer accessible.

### Insights

- **Innovation in the public sector doesn't have to be done by councils** – when councils publish data, third-parties can build and deliver effective services which can benefit communities
- **Councils struggled to provide the open data due to a lack of understanding** of what open data is, how to create it and what standards to use
- **Using a collaborative approach for designing services can make the underlying data better** – for example, by allowing users to update the map

More at [theodi.org/data-public-services-case-studies](https://theodi.org/data-public-services-case-studies)



Smartline is a three-year research project looking at how technology can be used to help residents in Cornwall live healthier and happier lives. The project is led by the University of Exeter in partnership with Coastline Housing Ltd, Cornwall Council and Volunteer Cornwall.

The **Smartline** project has enabled the data collected to be used in academic research, and University of Exeter researchers have conducted research studies with consenting Smartline participants.

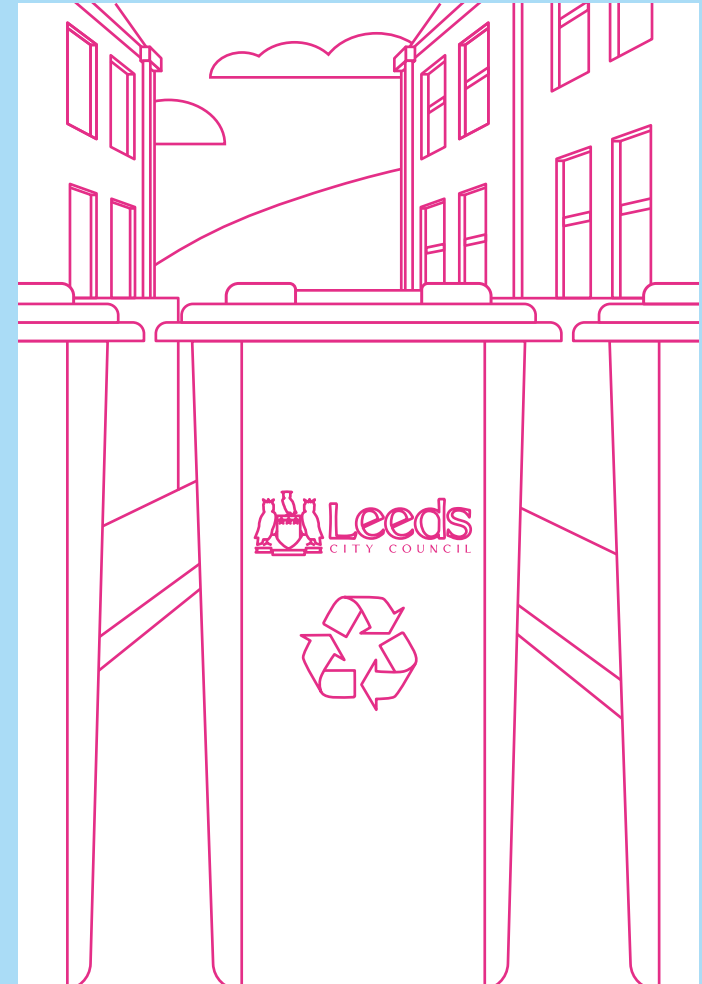
The homes of over 300 residents in the areas of Camborne, Pool, Illogan and Redruth were fitted with environmental sensors to collect data on local air quality, humidity, temperature, water use and energy use. The residents lived in social housing, managed and maintained by Coastline Housing, one of the project partners. Following an initial face-to-face study, participants were asked to complete monthly surveys using tablets – provided for free to each participating household.

Smartline was designed to support local innovation in Cornwall. The project runs schemes that support local small and medium-sized enterprises to engage with the data collected and the research it has informed, to help create better products and services for the community.

### Insights

- **Ambitious projects need funding** – this project was 80% funded by the European Regional Development Fund.
- **Sharing learnings helps others replicate** – it is important for projects like this to demonstrate their value and share learnings so that others can replicate them as efficiently as possible
- **Engaging with service users is key to building trust** – this project was opt-in for the residents, they were given detailed information throughout and they were encouraged to provide feedback

More at [theodi.org/data-public-services-case-studies](https://theodi.org/data-public-services-case-studies)



Local councils spend thousands of pounds each year responding to residents who are unsure when their bins are due to be collected, and telling them when timetables will change. With over 300,000 residents, this was a big issue for Leeds City Council.



**Leeds Bins** – a mobile app designed by imactivate – has shown that open data can be used to innovatively reduce this burden. Users can input their postcode to find out when their bins will be collected, and add this to their calendars so they will be notified beforehand. They can also use the app to look up their nearest recycling points.

The data underpinning the app is pulled from two datasets: one with all the addresses in Leeds, the other with bin collection dates. They are linked by a unique property identifier.

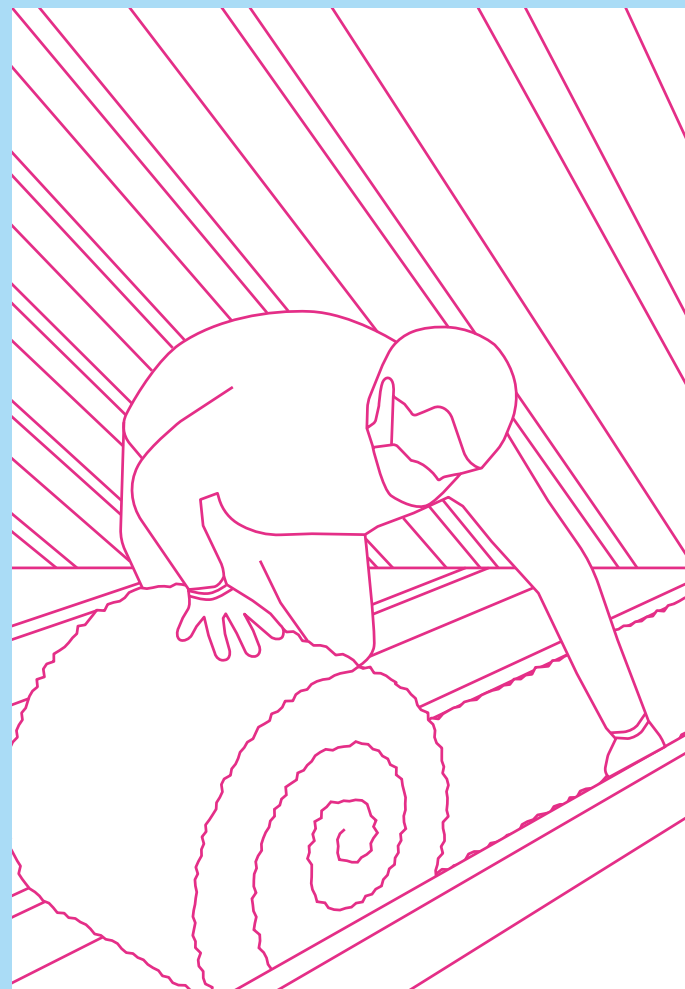
As of January 2019, the app had been used over 800,000 unique times, and over 13,000 postcodes had been looked up. It has been estimated that Leeds Bins saves the council £100,000 per year in communication with residents.

### Insights

- **Innovation is possible even on limited budgets** – this project shows how saving the council money can happen alongside improving the delivery of services to residents
- **Open data saves time and money** – councils publishing open data lowers the barrier to entry for innovative apps and services, since a core part of the service is available already for free
- **The app solved a specific problem** which has helped to keep the project focused, demonstrate value and encourage its use

More at [theodi.org/data-public-services-case-studies](https://theodi.org/data-public-services-case-studies)

## Case study: Kent County Council



Across Kent and Medway there are 64,596 households (2013) where residents are living in 'fuel poverty', meaning their income is below the poverty line and their energy costs are higher than normal for their type of household. Living in a cold home can have negative effects on wellbeing, and physical and mental health.

Working with **Kent County Council**, the **Kent Energy Efficiency Partnership** aimed to reduce the number of people at risk of fuel poverty. With 24,300 excess winter deaths in England and Wales in 2015-16, as estimated by the Office for National Statistics, the team wanted to see how data could help predict areas at risk in Kent.

The team mapped available datasets: closed, shared and open, and evaluated each dataset to see if the data could help address the problem.

By using a systems-modelling approach and combining closed, shared and open datasets, the team could identify areas at risk at the postcode level, with an average of 20 residential properties per postcode. This significantly improved their analysis and helped to target interventions.

### Insights

- **By understanding demand, the team found a clear business benefit** from using data – encouraging them to explore potential for further use
- **Data can enable better decision-making in public services** – but only if services know what data they have, where it is and how it can be useful to solve their specific problem. Doing a landscape review of available data helped this project to address the problem in a short time scale.
- **It's important to understand the motivations of those who design and deliver the service** – regular meetings to understand goals and challenges gave the project team clearer objectives from funders, strategists, policy officers and frontline workers
- **User personas helped keep the user in mind** and prevented the project from being too conceptual

More at [theodi.org/data-public-services-case-studies](https://theodi.org/data-public-services-case-studies)

## Case study: North Lanarkshire



North Lanarkshire Council receives high volumes of Freedom of Information (FOI) requests, and calls and emails to its customer service team about business rates (non-domestic rates). The council manually answers these queries, getting the required information from large internal datasets – a costly and time-consuming process.

Believing that ‘every FOI request is a service failure’, **North Lanarkshire Council**’s goal was to reduce the number of requests to the customer service centre, increase transparency and provide residents with information about their local area.

Working with Snook, a service design agency, and UrbanTide, a software company, the council aimed to publish the full non-domestic rates dataset (first removing personal data). This led to the publication of over 6,500 data entries as open data, providing a comprehensive picture of rates.

The team used the USMART data-sharing platform to process and create the open dataset.

The redesigned service makes the whole non-domestic rates dataset more accurate, because it automatically processes existing open data sources, including datasets from Companies House and the Food Standards Agency Hygiene rating scheme.

### Insights

- **Data access take time** – requesting access to data and creating data sharing agreements should be built into projects at the start
- **Existing service-design toolkits are useful** – team members used service-design templates and techniques that they were familiar with and existing open data resources
- **Data literacy should be built across the team** – UrbanTide had trained North Lanarkshire Council on open data practices before the project, which meant the team was more comfortable with the topic and championed data-enabled services across the council

More at [theodi.org/data-public-services-case-studies](https://theodi.org/data-public-services-case-studies)

## How do you design to scale?

### What does scaling mean?

As part of the ODI’s *Scaling data innovation* project, we explored how to help local data-enabled projects scale up or scale out.

A project or initiative can ‘scale’ in two ways:

- **It can scale up.** A project or initiative that has worked well at a small scale can be scaled up to improve systems, ensure sustainability, or cover a wider geographic area or larger population base. This could be managed by an original project team, in collaboration with partners, or by another organisation.
- **It can scale out** by being repeated, repurposed or re-deployed across sectors, organisations or areas. The project team can share insights and allow others to build on and reuse their work.

Around the UK, we have found that there are many ways that data – especially open data – and open approaches to design can be used to deliver more efficient and effective public services.

However, data innovation in public services is not being effectively reused across local government or in the wider public, private or third sectors. Solutions often remain local and innovations do not benefit as many people as they could. By designing services to scale, we can increase the impact of these innovations.

Working more openly can help overcome many of these barriers. Sharing what you are working on with peers – your ideas, frustrations and solutions – can lead to better collaboration, transparency and services.



# Checklist: How to design to scale

This checklist can be used by a variety of people, across different sectors with concerns about data-enabled services scaling up or out.

This checklist includes steps to take when designing a project or finishing a pilot, to share learnings and help others to replicate work elsewhere.

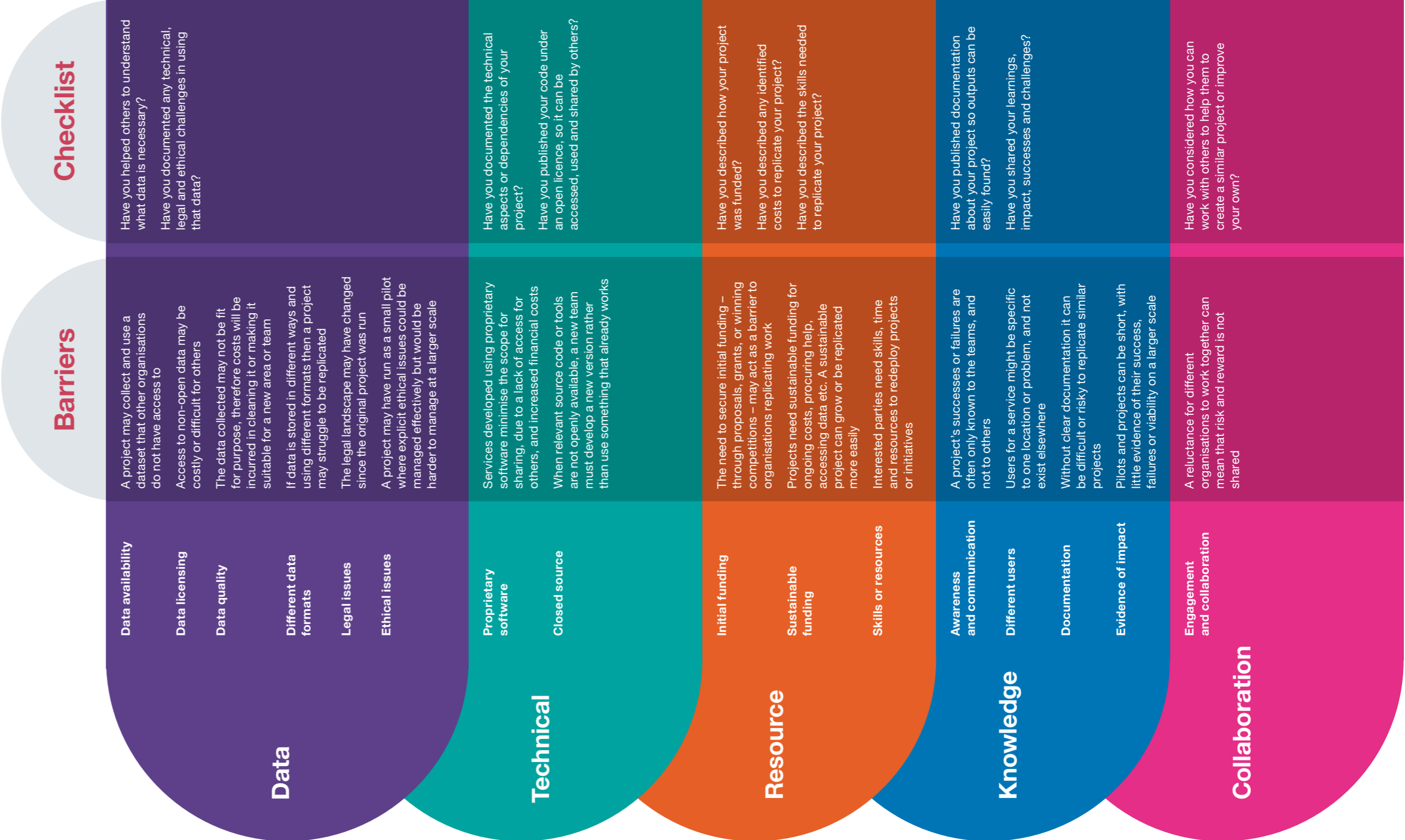
### Barriers to scaling

We have identified a number of barriers that can hinder the ability of a project to scale. (There will be other factors that can affect a project, such as regional differences, which are not included here.)

### How can you design to scale?

Follow the steps here when designing your project or finishing a pilot. This will help others to replicate your work elsewhere.

For a more detailed dive into things you may need to consider, see the full set of checklist questions at: [theodi.org/scaling-checklist](https://theodi.org/scaling-checklist)





The Data and Public Services Toolkit was created by the Open Data Institute, as part of its innovation programme, funded by Innovate UK.

**The toolkit includes:**

- Data and Public Services Toolkit guide + Checklist
- Data and Public Services Business Case Canvas
- Data Ethics Canvas
- Data Ecosystem Mapping

The tools are likely to be iterated upon as the tools are used.

You can find all the tools and resources at [theodi.org/tools](https://theodi.org/tools)

If you would like to discuss the Data and Public Services Toolkit, or how we can help you to use the tools, contact [info@theodi.org](mailto:info@theodi.org)

You can find out more about our work at [theodi.org](https://theodi.org)

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