

Data-sharing: The beating heart of a successful public sector



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Contents

The purpose of our research	4	Findings and recommendations	22
Executive summary	6	Next steps	44
Reimagining data as a national good	8	Methodology	46
What's needed – at-a-glance	10	Acknowledgments	48
Why sharing and using data is critical in the public sector	14	Bibliography	50
The main challenges for the public sector in sharing data	18		

The purpose of our research

This research was carried about by a study group of experts from PA, the Office for National Statistics and the Infrastructure and Projects Authority. We are also grateful for contributions from individuals at the Blavatnik School of Government (University of Oxford).

Our goal was to co-develop tangible, implementable actions to unlock progress on public sector data-sharing. We see such progress as crucial for bringing social and economic outcomes that transform life for UK citizens.

This data-sharing study builds on extensive prior research that identifies the challenges of data-sharing and collaboration within the public sector and with partners. While it reconfirms many of these findings, we focus on positive, forward-looking actions. Implemented across the public sector. These actions would support the Government's commitment to better data-sharing and value creation for the public good.

Participation in this study, its findings, and calls to action are independent of any 'machinery of government' changes occurring before, during, or after its release.



Executive summary

The UK public sector is gearing up to achieve five key missions in line with government priorities: achieve high economic growth, become a clean energy superpower, improve the NHS, reform the justice system, and raise education standards. Through effective, robust data-sharing, these ambitions can become a reality.

Data has become the lifeblood of the intricate patchwork of departments, agencies, and bodies in the public sector – and data-sharing is the beating heart. Improving how data is shared will provide public sector decision-makers with the insights they need to chart the best course towards better economic, health, and social outcomes for the whole of society.

In this report, experts from PA, the Office for National Statistics, the Infrastructure and Projects Authority, and leading academic institutions explore how public sector leaders can unlock the power of data to create a more prosperous and purposeful public sector.

Understanding the challenges

Building on previous research into the challenges of data-sharing and collaboration within the public sector and with partners, we interviewed 29 experts from 20 organisations. These in-depth conversations generated valuable and detailed insights.

We carried out two rounds of interviews. The first round helped us identify themes to explore more thoroughly in the second round. Those 10 themes fall into two focus areas: people and process.

Covering the ‘people’ area, the main points raised were:

- **Culture** – the ‘human factor’ can’t be underestimated and can involve a reluctance to cooperate
- **Leadership** – an absence of strong central mandates deters collaboration
- **Skills** – there are misconceptions and gaps in knowledge around whether and how data can be shared
- **Trust** – there’s a lack of trust between public sector teams, and between the public sector and the public
- **Risk** – fear of data misuse discourages sharing.

And considering ‘process’, our respondents talked about:

- **Funding** – having separate budgets creates barriers and funding is insufficient
- **Datasets** – people don’t know what datasets are available and the datasets are of inconsistent quality
- **Legislation** – individual departments own their data so sharing requires complex permissions
- **Standardisation** – skillsets and practices are inconsistent
- **Technology** – incompatible technology prevents fast and seamless data-sharing.

Making the difference

Combined with our own experience and expertise, these insights have allowed us to make specific recommendations – and highlight areas for further research. Here’s what’s needed:

- **A plan for creating an empowering environment for data-sharing**
- **Formal mandates for sharing data for the public good**
- **A road map for improving skills of data analysts, data architects, data engineers, and data scientists**
- **An analysis of the risks associated with sharing data**
- **A new legal definition to make data an asset of the public sector as a whole**
- **A central function for reviewing data-related project proposals to better allocate funding**
- **Data assets tailored to the public sector’s missions.**

The most important area for further investigation is technology – in terms of ensuring and future-proofing compatibility. Other ideas include how:

- **better data management could contribute to a slicker and more effective, agile data-sharing operation**
- **integrated, mission-driven departmental strategies for data-sharing could make a difference.**

Strengthening the heartbeat

In an ideal world, there would be a central year-round secure data-sharing service. This should perform a central operational role to govern, secure, safeguard, and administer streamlined data-sharing. With this and our other recommendations in place, the flow and sharing of data within and between public bodies can thrive – for everyone’s benefit.

Reimagining data as a national good

Data has become essential to modern governance, commerce, and society. Its effective management and use now determine how well governments serve their citizens, how businesses create value, and how individuals navigate daily life.

In the public sector, data drives the continuous improvement of citizen services. Recent governments have implemented reforms to enhance public sector performance through new policies, processes, and service delivery models. Data-sharing must now become central to this ongoing transformation.

The public sector's organisational structure - with its departments, agencies, and independent bodies - creates inherent operational challenges. However, this complexity need not prevent progress. By fostering greater coherence across government through effective data-sharing, the whole of government can deliver outcomes that exceed the sum of its individual parts.

Grasping the opportunities

Drawing on insights provided by leaders across the UK government, academics, and experts, this report explains in detail how to unlock the potential for data-sharing to achieve successful reform.

We identify the cross-government interventions needed now to improve the way public sector data is shared. And we highlight issues for further consideration. Our recommendations provide a timely resource as departments prepare for a multi-year spending review settlement early in 2025.

We carried out qualitative research, undertaking in-depth interviews with 29 experts from 20 organisations. (You can read more about our methodology on page 46.)

In the report we:

- **Provide an at-a-glance guide to our recommendations**
- **Analyse the potential for data-sharing to achieve the UK Government's five missions**
- **Explore the data-sharing challenges the public sector faces**
- **Present our findings and recommendations in detail, and**
- **Identify opportunities for further research.**

While sharing data in a secure, ethical, controlled and safe manner is a complex exercise, implementing our practical recommendations will get the public sector's heart beating at its optimum rate. And the meaningful opportunity that will bring is clear for all to see.

What's needed – at a glance

As well as a year-round secure service, performing a central operational role to govern, secure, safeguard, and administer streamlined data-sharing, these actions will enable the public sector to succeed. →



People →

1.

Culture

(see pages 24-25)

1.1

A deep dive into the existing data-sharing culture

1.2

An empowering environment for sharing data

1.3

Communication that emphasises the value of data for the public good

2.

Leadership

(see pages 26-27)

2.1

Formal mandates for sharing data for the public good

2.2

Letters of responsibility

2.3

Standardisation of the role of chief data officer

3.

Skills

(see pages 28-29)

3.1

A road map for improving the skills of data analysts, data engineers, data scientists, data architects, and information governance specialists

3.2

Training and intra-departmental collaboration opportunities

3.3

A public-sector-wide emphasis on the role and importance of data

4.

Trust and transparency

(see pages 30-31)

4.1

A new approach to transparency in data processes and the means to achieve it

4.2

Defined protocols for custodians and consumers of data

5.

Risks and incentives

(see pages 32-33)

5.1

An analysis of the risks associated with sharing data

5.2

A blueprint risk management plan to alleviate doubts and mitigate risks

5.3

An analysis of the value chain of sharing data

5.4

Recognition for effort and the impact of sharing data



Processes →

6.

Funding

(see pages 34-35)

6.1.

A central function for reviewing data-related project proposals

6.2.

Extra funding to broaden the impact of data projects

6.3.

Explicit data-sharing capability plans in departmental spending submissions

7.

Datasets

(see pages 36-37)

7.1.

Data assets tailored to the public sector's missions

7.2.

A common 'data explainability practice'

7.3.

Cross-departmental groups of analysts aligned to the public sector missions

8.

Policy and legislation

(see pages 38-39)

8.1.

A new legal definition to make data a 'national asset' and a clear definition of 'public good'

8.2.

An evaluation of existing legal gateways for data operations

8.3.

A new risk threshold for sharing data assets and extra support for data owners

8.4.

Discretion around data analysis used for policy making

9.

Standardisation

(see pages 40-41)

9.1.

A standardised framework for all aspects of the data ecosystem

9.2.

A solution for indexing data for sharing purposes



Why sharing and using data is critical in the public sector

With the right controls in place, data can provide a robust link between policy decision-making and positive citizen outcomes. →

Sharing cross-organisational de-identified data, the public sector could, for example:

- better predict the likelihood of ‘at risk’ children ending up in prison
- significantly improve employment outcomes for people with a serious health condition
- facilitate the transition of buying or selling residential and commercial property, from a paper-based system to a digital system
- make better use of Council Tax information in partnership with and supporting local authority intervention programmes for positive citizen outcomes
- create a simpler and more effective way for businesses to interact with administration processes, (allowing them to provide their data once rather than multiple times).

What’s more, sharing data can help achieve specific government aspirations.

Supporting the Government’s missions

The UK Government, elected in July 2024, has given the public sector five missions. The goals are to:

1. Kickstart economic growth
2. Make Britain a clean energy superpower
3. Take back our streets
4. Break down barriers to opportunity
5. Build an NHS fit for the future.

To succeed in those missions, the public sector needs to work with data in focused coalitions, horizontally, across departmental boundaries.

Looking at the datasets available, we’ve identified some specific data-sharing opportunities that would support each of the missions. Here, we provide an example for each.

Mission 1: **Kickstart economic growth**

By linking labour force data with health data, such as hospital episodes statistics, the public sector could better understand the causal connection between chronic conditions and inactivity in the labour market. That would allow the public sector to develop and implement fit-for-purpose solutions to support individuals in returning to work.

Mission 2: **Make Britain a clean energy superpower**

By linking more than 70 datasets – including from BEIS, DEFRA, the Met Office, and devolved administrations – the public sector could better address and communicate actions that support climate change policy. Those datasets cover around 40 climate change indicators, including weather, emissions, drivers, mitigation activity, and adaptation activity.

Mission 3: **Take back our streets**

By linking mobile data¹ with England and Wales crime statistics from the Home Office, the public sector could more accurately identify the causal link between people's movements and crime. That would identify crime hotspots, and allow tailored mitigations to be put in place. This data could also support the Geospatial Commission's Population Movement Data Project – seeking to understand the link between population movement and innovation.

Mission 4: **Break down the barriers to opportunity**

By linking Textkernel² data with Department for Education data, the public sector would be better able to inform its response to critical public service needs. One example might be monitoring labour market demands for skills and qualifications in teaching, tracking, and predicting teaching vacancies, and spotting emerging teacher recruitment issues. This would enable steps to address shortages to be taken sooner than later. What's more, linking Textkernel data with Ministry for Housing, Communities and Local Government data, the UK Coastal Communities Project could improve its town-centre regeneration work and local transport links with coastal towns.

Mission 5: **Build an NHS fit for the future**

Linking personalised data with risk factors for disease it will be a key enabler in helping the public sector analyse and identify people who could be at risk of illness and will enable the NHS, and others, to target interventions to them before they get ill. This is essential to delivering preventative care.

1 <https://integrateddataservice.gov.uk/news/virgin-media-o2-business-mobility-data-now-available-on-the-integrated-data-service>

2 <https://www.textkernel.com>



The main challenges for the public sector in sharing data

Many of the challenges involved in sharing data in the public sector are well-understood, but what's needed now is a systematic approach to enact and embed transformative change. Here we look at six major challenges identified in previous research and confirmed by our recent interviews. Four challenges relate to missing 'ingredients' and two reflect prevailing attitudes that are hindering progress. →

Lack of leadership

Despite many in Whitehall having grand aspirations for data-sharing reform, aspirational plans have not withstood contact with the complicated realities of the public sector. And while many have stated their intentions to grasp the opportunity that data-sharing and use bring, there isn't a critical 'senior' mass of genuine support in favour of reform. Those with power need to use it.

Lack of confidence

Many parties, including the public, question how robust policy decision-making is. Using data as an evidence base for decision-making can remove many currently unforeseen or unintentional errors when decisions are made that affect people's lives. Furthermore, it is essential that government is as transparent as possible when making policy decisions for the public good – data enables policymakers/decision-makers to build such trust through transparency.

Lack of resources and funding

Resourcing is a major constraint to data-sharing reform. In an already streamlined fiscal environment, departments don't have the capacity to commit to data-sharing as a practice – no matter the potentially rewarding consequences. Central government and HM Treasury should set bold, audacious goals that provide a clear purpose and direction to departments – and offer a funding mechanism to enable and support departments to achieve them.

Lack of efficiency

The business of governing often requires rapid mobilisation of effort and swift decision-making. Data (its provision, access, and use) needs to fit within this context to be a useful resource to public sector employees and decision-makers. So the public sector's data services need to be highly efficient – and allow non-government accredited users 'easy' access.

Attitudes to risk

Departments are often sceptical about the risk their data could be used for the wrong causes, and rightly so – it's a legitimate concern when it comes to sharing data. But the public sector should consider what the risk of not sharing data is for the public good.

Attitudes to transparency

The impact of public sector and government tradition should not be overlooked. Departments may well understand the importance of their data and the opportunities that open up for the public good if it is shared. But they also understand it can be used to demonstrate performance or progress in relation to departmental strategy and/or objectives. Departments are understandably concerned that sharing it in good faith, could reduce the unique leverage they have on the issues or interventions they are specifically tackling.

Overcoming the obstacles

It's time for; the public sector makes the leap from theory to practice. It's not enough to understand discrete challenges independently of each other, they must understand the challenges in the context of the 'system'. In other words, they need to get to grips with the causal relationships different challenges have with one another – and how those are harming the public sector's heartbeat.

Trust and transparency

People

Trust and transparency

- A new approach to transparency in data processes and the means to achieve it
- Defined protocols for custodians and consumers of data

Culture

People

Culture

- A deep dive into the existing data-sharing culture
- An empowering environment for sharing data
- Communication that emphasises the value of data for the public good

Leadership and mandates

People

Leadership

- Formal mandates for sharing data for the public good
- Letters of responsibility
- Standardisation of the role of Chief Data Officer

Data is The Beating Heart...

Risks and incentives

People

Risk and incentives

- An analysis of the risks associated with sharing data
- A blueprint risk management plan to alleviate doubts and mitigate risks
- An analysis of the value chain of sharing data
- Recognition for effort and the impact of sharing data

Datasets

Process

Datasets

- Data assets tailored to the public sector's missions
- A common 'data explainability practice'
- Cross-departmental groups of analysts aligned to the public sector missions

Funding

Process

Funding

- A central function for reviewing data-related project proposals
- Extra funding to broaden the impact of data projects
- Explicit data sharing capability plans in departmental spending submissions

Policy and Legislation

Process

Policy and legislation

- A new legal definition to make data a 'national asset' and a clear definition of 'public good'
- An evaluation of existing legal gateways for data operations
- A new risk threshold for sharing data assets and extra support for Data Owners
- Discretion around data analysis used for policy making

Skills and standardisation

Extra support for Data Owners

People

Skills

- A road map for improving the skills of data analysts, data engineers, data scientists, data architects and information governance specialists
- Training and intra-departmental collaboration opportunities
- A public-sector-wide emphasis on the role and importance of data

...of a Successful Public Sector

Process

Standardisation

- A standardised framework for all aspects of the data ecosystem
- A solution for indexing data for sharing purposes

Technology and strategies

Next Steps

Technology

- Review the government and public sector's technology estate—including in-service, pipeline, and committed services—to assess its complementarity, impact on users, and contribution to the public good.
- Evaluate the interoperability and integration of public sector data-sharing services to build a coherent digital and data estate.
- Identify outdated data-sharing policies and areas where the private sector excels in effective data sharing, addressing barriers to public-private collaboration.

Findings and recommendations

As explained in detail on page 46, we carried out two rounds of interviews. The first round helped us identify themes to explore more thoroughly in the second round. Our interviews with experts across government departments, ministries, data services, and leading universities revealed 10 key focus areas that are central to embedding successful data-sharing into the public sector. For each focus area, we offer recommendations for action. You can read about them on page 44. →

Identifying the opportunities for change

Here, we look at why each theme is important, what our interviewees told us, and our recommendations for action. The themes fall under two main areas for attention: people (culture, leadership, skills, trust and risk) and processes (funding, datasets, legislation, standardisation and technology). There is understandably interplay between some of the relevant themes, but our recommendations will have the combined effect of resolving issues in each.



1. PEOPLE → Culture

In the context of data-sharing, ‘culture’ encapsulates a set of behaviours (including habits), mindset and emotional responses (conscious and unconscious) shaped by many factors. These include the perception and understanding of legislation, and individual and collective experiences of sharing data assets within and across departments. These factors may differ among government communities and individuals – and can be difficult to specify. But they shouldn’t be ignored. And it’s vital to recognise changes in culture can only happen over time.

Interviewees told us:

- The ‘human factor’ significantly hinders effective sharing of data assets – although it may not always be evident or deliberate, it can’t be ignored**

It manifests in several ways, fostering a specific mindset which, once established, is easily reinforced, leading to the formation of a culture that impedes collaboration.
- The perceived risks of sharing data assets create mental blocks, making public sector employees reluctant to work together**

People think the legal risk and potential penalties for data breaches outweigh the advantages of collaboration. So, there’s a dilemma over whether the best approach to serving the public is to safeguard data or share it with others.
- Sharing data assets is often seen as transactional, not collaborative**

Perceptions about legislation (see section 8), intricate or/and inefficient cross-departmental processes, high operational costs, and uncertainty around ownership of data create this view. So, data tends to be shared only when vital, resulting in missed opportunities for deeper, more productive collaboration.

What's needed:

1.1 A deep dive into the existing data-sharing culture

While there's a genuine sense that 'culture' is a significant barrier to data-sharing across government, the specific problems aren't well-understood. That needs to change. And representatives across the public sector could then co-develop solutions and design a roadmap for implementing them as soon as possible.

1.2 An empowering environment for data-sharing

People need to feel they can share data without going through a lengthy process to reach agreement. They need to feel it's straightforward, encouraged and supported. A new approach should include incentivising data-sharing – in other words rewarding and promoting it (see also section 2).

1.3 Communication of the value of data for the public good

There should be a narrative around sharing data that emphasises the potential value of data beyond the original purpose, representing a 'return on investment' for the public sector. This could be in the form of successful, lifechanging policies or efficiency gains.

2. Leadership and mandates

PEOPLE →

Despite admirable intentions to tackle data-sharing, goodwill alone will not be enough to turn the tide. Permanent Secretary and Ministerial, even Prime Ministerial leverage is needed to enact the changes that will bring data-sharing success. This leverage may come in many forms. Communication and engagement (internally and externally) are crucial, as are leadership mandates for senior postholders in critical data roles.

Interviewees told us:

- Accountability of data ownership and sharing often lacks a formal and respected mandate**
People feel there's insufficient leadership guidance and/or a lack of liability for the overall responsibility for data-sharing. Any current support feels inadequate or isn't carried out correctly. Ownership of data-sharing processes tends to be allocated to more junior staff where the risk of sharing data assets is not always properly understood. And that results in a tendency to avoid it.
- Shortcomings in directives contribute to delays in cross-departmental data-sharing**
Without strong leadership or a clear mandate there's an accumulation of unfulfilled or duplicated data requests funnelled through a limited legal pipeline without clear rules for prioritising. Some of our participants feel that, unless directives and standards are mandated by a central body, there are limited chances of success in improving data collaboration.
- The absence of strong central mandates impedes sharing data even if there is a need for it**
This is particularly evident when a public sector team works with a partner organisation. Sometimes there's a somewhat 'cavalier' approach, which can have a knock-on effect internally. Some of participants feel top-down mandated data collaboration occurs only when there's a 'market failure', and leaders need to intervene. But the strength of established relationships between some different players does drive success in data-sharing. As of now, there isn't a sufficiently strong mandate for data-sharing between teams that are different but must rely on each other, for example technical and policy teams.

What's needed:

2.1 Formal mandates for sharing data for the public good

Secretaries of State should give Permanent Secretaries a mandate underpinning Government and the public sector's intention to share and use data as an asset 'for the public good', in support of departmental objectives.

2.2 Letters of responsibility

Senior Civil Servants across departments who have delegated departmental accountability for the access and usage of their department's data should have a 'letter of responsibility' to facilitate access and the use of their department's data for the public good. Such letters should be coordinated by a central digital and data office, with sufficient powers to facilitate, encourage and if necessary, enforce their application in practice (in conjunction with 2.1 and 5.1).

2.3 Standardisation of the role of chief data officer

The role of 'chief data officer' needs to be thoroughly evaluated and standardised across government and the public sector, so responsibilities, accountabilities and performance expectations can be clarified and fairly agreed.

Newly-recruited chief data officers should receive a formal 'letter of accountability', endorsed and approved by a 'head of profession' and a Permanent Secretary within the relevant department.

3. Skills

PEOPLE →

Government and the public sector have struggled to recruit, retain, and develop talent within the digital, data and technology profession for some time. For analysts, the problems with the data estate described above exacerbate things. Data skills and capability need to keep pace with the government's investment in innovative technology (for example the Integrated Data Service at ONS).

Interviewees told us:

- Misconceptions and gaps in knowledge around legislation, datasets and operational processes affect the quality of data management**
Underestimating the value of data while overstating the risks of sharing it often stem from the lack of proper understanding and communication around data legislation and its practical application. Low awareness of the internal practices of different departments prevents teams from using existing data for extracting insights. A shortage of well-trained teams of data handlers and analysts means it's difficult to maintain high standards and share and store data in a legally compliant way.
- Effective data-sharing is only part of the process** Generating insights related to the public sector's missions requires highly skilled teams. The need to be able to understand and interpret data correctly is vital. However, processing and analysing large datasets becomes challenging due to the absence of well-implemented standardised practices, variations in individual skillsets, and a lack of cohesive, efficient IT systems. Uncovering meaningful insights that can be used for the public good requires high skilled data analysts, engineers and data scientists with access to proper technology.
- Public sector employees often resort to ad-hoc solutions for data-sharing**
Inconsistent governance, lack of interoperable standards and incompatible technologies make public sector employees resort to ad-hoc solutions for data management and sharing. They often develop their own databases of information which others can't access, share or analyse. These individual practices, internal siloes and boundaries result in overprotectiveness of data and hinder cooperation.

What's needed:

3.1 A road map for improving the skills of data analysts, data engineers, data scientists, data architects and information governance specialists

A formal evaluation of the public sector's analysis function should aim to:

- Accurately illustrate the size, scale and capabilities of data analysts (accredited and non-accredited by the Analysis Function) working for public sector departments or agencies.
- Link data analyst skillsets and qualifications to existing data services and systems (like the Integrated Data Service, for example), and services to be invested in when future innovation and reform comes to fruition.

- Develop a thorough understanding of the processes the data analysts work with, and the critical aspects of technical design required for them to work effectively and inter-operably in future.
- Understand the relationship between data analyst skillsets and qualifications, and the integrity of analysis being done in support of policymaking and Ministerial decision-making.
- Understand and define the role a horizontal analysis function must play to make sure public sector analysts have the right skills, competencies and qualifications. That would maintain credibility and integrity in the analysis being conducted in support of policymaking and Ministerial decision-making.

3.2 Training and intra-departmental collaboration opportunities

It's important to build on the current efforts in this area. Data analysts, engineers and scientists should also have access to the appropriate technology.

3.3 A public-sector-wide emphasis on the role and importance of data

A communication campaign should demystify the importance of data and data roles in the public sector, and how they contribute to the public good. Data should be seen as fundamental, not a specialism that's a 'DDaT thing'. So general communications should also highlight data-sharing and that it's important.

Posts and post profiles for all 'data' roles in government and the public sector, should be consistent from organisation to organisation, in grade and associated responsibilities.

4. Trust and transparency

PEOPLE →

Building a trusted and transparent ecosystem of data-sharing for the public good creates a circle of mutuality:

- the government and public sector can be trusted by its citizens to collect, manage, and use their data responsibly and in their interests
- government departments and public sector teams trust each other to handle data assets responsibly, whatever the source, and
- the public can be trusted to provide accurate and honest data when asked for it.

Interviewees told us:

- **Overall, trust in the public sector's ability to process data securely and effectively tends to be low**
This is driven by internal and external lack of transparency on multiple levels – from insufficient communication on the benefits of data-driven policies to the lack of clarity around how to obtain funds for improving data practices. This, combined with data vulnerability and instances of data leaks which, while rare, linger in people's memory, contribute to a negative perception of the public sector's ability to manage and use data well.
- **The public worry about how the public sector manages and shares their data**
People generally have more trust in the private sector – even if they have some doubts, they can perceive immediate benefits from sharing their data. That's not always the case with the public sector. In fact, the public sector has a limited understanding of public perceptions about data security, and differences between the public and private sectors in this context. Without a genuine public consultation about people's expectations for data-sharing with the public sector, important factors that could encourage the public to share their data are often overlooked.
- **There's not enough trust between public sector communities to create a truly collaborative environment**
Data is valuable to departments, and they often opt not to share because of uncertainty around how other departments will handle and use it. People need reassurance that the data they share will be used and stored ethically and securely. People receiving data need to be confident it is of sufficient quality and up to date.

What's needed:

4.1 A new approach to transparency in data processes and the means to achieve it

The Government and the public sector should reconsider how trust and transparency can be achieved across the whole public sector data-sharing ecosystem, seeking to:

- Be open and transparent about the collection and use of citizen data for the public good and communicate effectively with the public in this regard. People need to feel informed and safe but also in control of their data.
- Facilitate the inclusion and use of localised data in tailoring policymaking processes and highlight the positive impact that has on local communities. Such data could also inform national policies.

4.2 Defined protocols for custodians and consumers of data

In readiness for streamlined sharing, appropriate, robust governance, assurance and audit protocols and practices should be defined and embedded for custodians and consumers of data in government and the public sector.

5. PEOPLE → Risks and incentives

The main risk with sharing data is the possibility that it will be used by unauthorised handlers, users, or analysts, for reasons not approved by the data owner and against the public's interests. Data breaches can have serious repercussions, not least a drop in the public's confidence in the public sector's data management capabilities. Not surprisingly, this fear hampers collaboration. It outweighs public sector teams' willingness to share – even when they appreciate the potential benefits. Better governance is one element in the delicate balance needed between risks, incentives and rewards.

Interviewees told us:

- The complex nature of data-sharing across the public sector involves multiple actors and factors, creating an intricate set of perceived risks**
 These risks range from those outlined in legislation and those arising from incompatible practices and technology (see page 36). And psychological issues relating to those risks, like doubt, uncertainty and fear of making a mistake, contribute to a culture of avoiding data-sharing.
- Fear of data misuse is the main psychological barrier**
 Concerns surrounding data ownership, constraints (including skills and technology) around safe yet effective sharing, and unclear measures for preventing data misuse all serve to paralyse cross-departmental cooperation. (The latter often stems from a lack of understanding of the relevant legislation.) People feel torn between the perceived responsibility of protecting citizens' data and the incoming requests for sharing it. The potential misuse of shared data is beyond the control of the person who shared it, but they'd be held responsible if someone else did something wrong, intentionally or otherwise.
- Public sector employees often worry about reputational damage if data is mishandled**
 Civil servants feel they should protect their department's assets and not expose potential inefficiencies. That's because they don't understand other departments' data asset curation and management, there are disparities between frameworks (see page 36) and a limited system of control or tracking once data's been shared. What's more, departments have limited time and resources, so they tend to prioritise less risky pressing tasks than sharing their data assets.
- Public sector employees find data-sharing processes cumbersome, and the high level of responsibility tied to potential misuse makes it unrewarding**
 After investing time and effort into sharing data, the 'providers' often lose visibility over the subsequent use of it. They don't see how their data is used or what's been achieved as a result. That means the value of insights seems low compared to the effort involved – and makes people less willing to go to that effort.

- **The perceived benefits, tangible or intangible, of sharing data are not considered worth the effort**

The benefits for the ‘receiver’ of data seem greater than those for the ‘provider’ of data who has made the effort and taken the risk of sharing. And individual departments’ priorities are deemed more important than sharing data with other departments. Currently, there isn’t a balanced value exchange or sense of a common goal across the public sector that would encourage data-sharing (unlike the coordinated response in the COVID-19 pandemic). Not sharing data is likely to lead to opportunity cost – because it won’t be possible to predict how best to allocate future funding (public and internal).

- **The positive impact of data-sharing isn’t communicated to the public**

Interviewees feel the public has limited knowledge of how sharing their data with and within the public sector can improve their lives. The public is unaware of the advantages having data could bring to grassroots communities. It’s seen as a sensitive topic too. As a result, the public doesn’t trust the public sector to handle and share their data properly. So, citizens aren’t motivated to give their data – other than when they have no choice.

What’s needed:

5.1 An analysis of the risks associated with sharing data

Right now, the risk burden would appear to be so high as to deter data-sharing. But there’s also a lack of understanding of the risks, so that needs fixing. Carrying out an exercise to get a clear picture of the specific risks that sharing data across government and the public sector would allow relevant actors and parties involved to co-develop measures to balance the risk burden. Those measures should consider the impact of not sharing data.

5.2 A blueprint risk management plan to alleviate doubts and mitigate risks

The analysis above will allow a clear risk management and mitigation plan for data-sharing, explicit enough to be used by people who need data and those asked to share it. This should reduce scepticism and the fear of data mismanagement or misuse and reassure custodians of government and public sector data that their data is appropriately safeguarded and managed.

5.3 An analysis of the value chain of sharing data

The benefits of sharing or exchanging data – within the public sector and with private sector bodies – go beyond informing policy. They could include the ability to implement or improve services, enabling compliance and generating deeper insights. A thorough understanding of the value of those benefits would allow the constituent parts of the ‘chain’ to be funded appropriately.

5.4 Recognition for effort and the impact of sharing data

Internal and external government and public sector communications should highlight the positive impact of sharing data on the public good. This should be based on successful case studies and recognise the contributions of government departments (including individual civil servants’ efforts, where applicable) and public sector teams.

6. PROCESSES → Funding

Of course, public sector spending must strive to achieve the best possible value for money. At the moment, there's little or no analysis carried out to assess the returns on investments in sharing data. Without that understanding, it appears opportunities are missed, there's a reluctance to put in the effort and resources required, and things won't change.

Interviewees told us:

- **Allocating budgets separately by department is a barrier to effective data management and sharing**
The current budgeting model means departments focus on their individual responsibilities, goals and ways of working, instead of encouraging co-operation or developing standardised data processes (from collection to sharing) – which may require significant funds.
- **Data management and sharing processes are not sufficiently funded**
Individual departments often struggle to run every-day processes because they don't have the funds. And their yearly data expenditure isn't always accurately assessed, leading to unreliable future spending plans. The limited budget means departments prioritise other, seemingly more pressing, needs, than data-sharing processes which are complex and sometimes technologically challenging. Improving this requires long-term, significant investment. A lack of clarity on how to obtain extra funds for data purposes leads to missed opportunities.

What's needed:

6.1 A central function for reviewing data-related project proposals

This would enable coherence and increased interoperability across publicly funded data projects. Departments could then maximise the value of their funds in supporting the whole of government approach to data-sharing. If a department's proposal aligns with the central strategy and with the missions, funding should be cleared by this new central review. If not, the function should have the power to intervene or pause investment in a fair and transparent way.

6.2 Extra funding to broaden the impact of data projects

The central function could amplify the impact of individual data projects with extra central funding that would extend benefits beyond the proposing institutions. That central team could then prioritise investment in areas that would release benefits across multiple departments, agencies or types of institution. The design of this mechanism should incentivise data-sharing activities (like standardisation, preparation, and sharing interoperability).

6.3 Explicit data-sharing capability plans in departmental spending submissions

Overall spending submissions should require transparent detail on data-sharing practices (for example, for capability development or maintenance). That would require departments to explore and understand the cost:benefit ratios and plan effectively for the future. Departments should be made accountable for maturing data capability plans (for standardisation frameworks, for example). And there should be central funding on top of their own resources, so they're not left to build and maintain this capability in isolation.

7. PROCESSES → Datasets

Of course, data exists in every public sector team, department, agency or authority – each with its own level of digital maturity, capacity for innovation and resources available for sharing that data. So, the public sector’s ‘data estate’ is fragmented in shape and form. This presents some serious challenges. Specific datasets might exist but:

- people might not know they exist
- people might not be able to access them
- they aren’t always organised by relevant themes so can’t be analysed to support decision-making, and it’s not always possible to clearly articulate and evidence why certain decisions are made.

Ideally there would be a critical mass of thematic, cross-departmental data assets that is regularly updated and maintained with integrity. This could and should be accessed freely and swiftly by accredited analysts to inform Ministerial decision making.

Interviewees told us:

- **Public sector employees have limited awareness of the available datasets and how each department manages them**
There are sometimes challenges in accessing and linking appropriate data sets which two or more departments have deep in their stock and are only known about by a limited number of people. There’s isn’t a central accessible location detailing the datasets different departments have or the processes they use (from collection to sharing). That makes it difficult for external bodies and other teams in the public sector to understand how to access the right data. While there are some valid concerns about not sharing the availability of certain sensitive or classified datasets, our interviewees feel some of those concerns are unnecessary. They lead to the possibility that bad practice around the management of key data sets is hidden. To access data they need, public sector employees tend to rely on existing personal relationships. They go to the person they know who had the data they needed last time, even if they might not be the authoritative source for that data.
- **Using datasets operationally is undermined by inconsistent quality**
Data quality differs significantly as it depends on individual departmental processes and manpower – this leads to data silos and limited thought about how others could use or update it. Certain departments and institutions are believed to maintain a high quality of data. That’s because of the scrutiny and accountability that goes into it or there are analysts who accurately interpret data within its proper context. Those departments worry about what might happen to their data assets if the quality is not maintained once the data is shared.

What's needed:

7.1 Data assets tailored to the public sector's missions

The public sector needs a robust set of data assets across departments that will be critical for achieving its five missions, and a plan to mobilise them. This plan should specify using data services that are already active (The Integrated Data Service, One Login, and Data Marketplace) and articulate how the National Data Library will enable these datasets to be used effectively in future.

There should be a process to regularly update these critical data assets and to keep relevant data owners and users up to date regarding the administrative and operational use of these assets.

7.2 A common 'data explainability' practice

Having a common data explainability practice would allow the public sector to identify the reasons for failures and successes in delivering policies and services. It would improve the data collected and allow for more effective machine learning.

7.3 Cross-departmental groups of analysts aligned to the public sector missions

A radical change to the way critical, mission-aligned datasets are analysed thematically is needed. That would allow small cross-departmental groups of analysts to convene and collaborate effectively.

8. Policy and legislation

PROCESSES →

The Digital Economy Act 2017, the Statistics and Registration Service Act 2007 and other laws, set guidelines and give direction for sharing public sector data for any use – for developing policies or improving services, for example. The legislation is intended to protect people whose data is being collected and used, to make sure it's used appropriately in their interests and for the public good. That means safely, securely, ethically and morally. It's hard for governing policy and legislation to maintain relevance and suitability as the digital and data systems within the public sector rapidly evolve.

Interviewees told us:

- **A limited understanding of existing legislation means people think it's all about data protection and punishment for misuse**
Our interviewees feel the existing guidelines and legal gateways for data-sharing are difficult to find and navigate, especially for public sector employees without specialist expertise. The gateways don't enable effective data-sharing, given the rapidly evolving digital environment. Uncertainties and misinterpretations of the rules mean public sector departments spend extra time and funds trying to navigate these problems. So, there's a perception that legislation serves more as a barrier than a framework for sharing data.
- **Individual public sector departments and organisations legally own their data, not the public sector as a whole**
Public sector departments have to establish agreements with one another to be able to share data and/or have to get permission from the legal department. Demands are often urgent and problems in the process lead to delays in getting permission.

Requests are funnelled through a legal pipeline with limited resources – in terms of time, staff and budget, manual processes and without clear rules for prioritising, which causes further delays. Since sharing individual department's data isn't mandated, there isn't adequate funding to mitigate these challenges.

- **The role of data owners in the public sector is seen as 'rigid' – they're legally liable for data and their permission is needed for sharing**
This liability creates a level of uncertainty for departmental legal teams or individuals responsible for overseeing data compliance. Any failure to protect or properly manage the data could result in legal consequences for the data owner – and the legal team. Some public sector employees admit it isn't always clear who a data owner is, so requests for data go to the wrong person, resulting in delays getting permission. Some civil servants believe the role of data owner works against collaboration – it creates challenges because of the tension between a data owner's accountability and the shared responsibilities for effective collaboration.

What's needed:

8.1 A new legal definition to make data a 'national asset' and a clear definition of 'public good'

Public sector data, in its entirety, should be formally redefined in relevant digital and data policy. It should be an asset the 'whole-of-government' owns, to be used for the public good within the scope of public sector activities, regardless of the individual departmental source. And 'public good' should be clearly defined within this context.

8.2 An evaluation of existing legal gateways for data operations

Reviewing and updating the policies and applications in practice of the existing legal gateways should make it easier for people to access and share data. It's not always clear how relevant some of them are and they can be complicated to use.

8.3 A new risk threshold for sharing data assets and extra support for data owners

The existing legislation needs to redefine the risk threshold for sharing data assets, (responsibly and securely), except in clearly defined circumstances where data retention is necessary. The legislation should enable consistent, integrated, and trusted sharing of data assets, balancing associated risks that need to be well understood.

Data Owners need to be unburdened by the risks associated with sharing data. The Integrated Data Service could reduce the intended or unintended risks involved in onward use of data owners' assets³.

8.4 Discretion around data analysis used for policy making

Data analysis conducted in support of policy development, should not always have to be published in the public domain regardless of the chosen legal gateway. Some discretion should be afforded to analysts and senior officials working with data for policy development.

³ The Integrated Data Service is a platform that provides access to improved data, analytical and visualisation tools, in a secure multi-cloud infrastructure. <https://integrateddataservice.gov.uk>

9. PROCESSES → Standardisation

Currently, public sector organisations and government departments often operate their own data practices, independently of each other. With a fragmented technology estate, and multiple frameworks and standards, it's not surprising that sharing data is inefficient, ineffective or impossible.

Interviewees told us:

- **Data management skillsets and practices are inconsistent**
This fosters a degree of mistrust between departments. The introduction of the Government Analysis Function⁴ and Digital and Data Profession Capability Framework (DDaT)⁵ has provided useful guidance for civil servants and analysts for developing digital and data skills. But there are still disparities in data collection, storage, sharing and analysis between the departments. Some have capabilities for using complex AI modelling, while others use simple spreadsheets and are unable to work with application programming interfaces (APIs). (application programming interfaces)⁶. This adds to concerns about accessibility and quality of data between departments and what will happen to data once shared.

Teams with greater data control mechanisms and advanced and digitised practices can be considered 'mature'. But this maturity can hinder other departments from accessing their data when needed.

⁴ The Analysis Function is a network of civil servants involved in generating and disseminating analysis.

<https://analysisfunction.civilservice.gov.uk>

⁵ This is a government framework describing digital, data and technology roles

<https://ddat-capability-framework.service.gov.uk>

⁶ Application programming interfaces are pieces of software that enable different programs to connect

<https://www.gov.uk/service-manual/technology/application-programming-interfaces-apis>

What's needed:

9.1 A standardised framework for all aspects of the data ecosystem

The Data Maturity Assessment⁷ should be used to evaluate the data capabilities of individual departments and then develop a robust, standardised framework for data collection, and preparation for onward sharing. This should be done by ensuring data quality is consistent across the ecosystem, enabling department-to-department process and service interoperability, regardless of a department's size, maturity, and to-date history of data-sharing.

9.2 A solution for indexing data for sharing purposes

The public sector and the Government should develop a data preparation solution that can operate across departments. Data should be indexed/linked by default in preparation to be shared – ideally 'in-situ' at the data source (in conjunction with 7.1).

⁷ This is a government framework for measuring, improving and maintaining the health and strength of an organisation's data ecosystem
<https://www.gov.uk/government/publications/data-maturity-assessment-for-government-framework#:~:text=It%20is%20a%20self%2Dassessment,maturity%20level%20for%20each%20row>

10. PROCESSES → Technology and strategies

Clearly technology is a critical element when it comes to enabling data-sharing. In these interviews, we didn't go deep into the technical capabilities needed. Equally, we didn't explore the specific strategies individual departments would need to develop to achieve the public sector's newly-defined missions. That means we haven't made any specific recommendations. However, we have identified some headline issues that need to be addressed. You can read about them in the next section.

Interviewees told us:

- **Incompatible technology prevents fast and seamless data-sharing**
Some departments rely on IT systems introduced in the 1980s, while others have more advanced and modern technology. Where departments tend to share a lot of data with each other, improvements to one system are likely to disrupt the other and the flow of information between them. The lack of aligned technology infrastructure and, even more importantly, the 'maturity' in moving data makes data-sharing a challenge even before the actual data transfer begins. Considerable time and resources are spent on adapting systems to create the technological compatibility needed for exchanging data.
- **Advances in technology significantly outpace the legislation around sharing data**
Public sector infrastructure can't keep up with the speed at which technology changes. This is both in terms of how costly and complex it is to update and because legislation and policies relating to sharing data doesn't reflect these changes.



Next steps

Our research has uncovered some rich insights. It also highlighted some issues that need further investigation to help decide on the best course of action.

In terms of technology, we suggest thorough reviews of:

- Government and the public sector's technology estate, including the technology services that are 'in-service, 'in the pipeline to be delivered', or 'committed to be delivered'. Such a review should draw out the meaningful complementary nature of the estate, its impact on users, and for the public good
- How and to what extent Government and the public sector's technology services for sharing data assets are interconnected or interoperable, and how they complement each other. This should be with the aim of creating a coherent public sector digital and data estate
- The developing the technology landscape to identify outdated policies relating to data-sharing legislation. Identify where the private sector is ahead of the Government and the public sector with technological solutions for effective data-sharing. (The current gap hinders collaboration when information needs to be exchanged between public and private bodies).

We'd also suggest exploring these ideas:

- Developing a robust, credible, and accurate illustration of the complex causal relationships that exist between the discrete challenges within the data-sharing ecosystem
- Strengthening data collection, management, and use practices across Government and the public sector, should contribute to a slicker and more effective, agile data-sharing operation
- Developing integrated, mission-driven departmental strategies for data-sharing for the public good
- Enhancing HM Treasury's role as a prominent 'lever for change', including making clear its influencing, facilitating and enforcement obligations in support of proposed data-sharing change
- Improving the delineation between the concept and definition of 'operational usage' vs. 'government analysis usage' vs. 'academic research usage' of data

A crucial transformation

Taking our recommendations forward, it should be possible to draw up a detailed, practical delivery plan for transforming data-sharing in the public sector – making it healthier and more effective. And it's a transformation that's crucial for the sector to achieve the UK Government's five missions.



Methodology

We conducted this study using a qualitative approach that involved a two-stage interview process. We reviewed relevant literature, including available government and leading private sector guidance, to inform the focus of the interviews.

The themes from the literature were coordinated with the experience of the study working group and used to inform the interview schedules and coding of the data. Over the two-stage process, additional themes for analysis emerged from the first-round data that we explored in the second stage.

In the first stage (H1-H2 2024), we had a series of conversations to explore and investigate the existing landscape of data-sharing practices in the public sector. This initial phase was focused on gathering broad insights, identifying key themes and challenges. In the second stage (H2 2024), we validated and deepened the understanding of the findings from stage one, exploring with the interviewees potential short and long-term solutions to the challenges we'd uncovered.

Our interviewees

We selected a range of participants who represent organisations central to government functioning and expert individuals. We engaged with 20 organisations, represented by 29 individuals. During both stages, the interview participants comprised:

- Directors and deputy directors of data services (including the National Cyber Security Centre and the Office for National Statistics)
- Senior data and digital officers (including chief data officers, chief digital officers, chief digital & information officers, chief operating officers and chief technology officers)
- Senior data analysts across several public sector departments and authorities, and
- Scholars and experts from the Blavatnik School of Government (University of Oxford) and University College London.

The box below highlights the departments and institutions we engaged and interviewed during this study. Individuals remain anonymous due to the nature and sensitivity of their roles.

 Cabinet Office	 Department for Business & Trade	 Department for Education	 Department for Levelling Up, Housing & Communities	 Department for Science, Innovation, & Technology
 Department for Transport	 Department for Work & Pensions	 Driver & Vehicle Licensing Agency	 Foreign, Commonwealth & Development Office	 HM Revenue & Customs
 Home Office		 Infrastructure and Projects Authority	 Ministry of Defence	 Ministry of Justice
		 Planning Inspectorate		

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Bibliography

This bibliography provides a list of sources that have been consulted and referenced in the preparation of this study. The selected materials support the evidence for the topics discussed. Each entry has been carefully chosen to ensure relevance, credibility, and contribution to the overall understanding of the subject matter:

Adopting a digital-first public sector service approach from

<https://www.openaccessgovernment.org/adopting-digital-first-public-sector-service-approach/154357/>

Analysis Function Annual Report April 2023 to March 2024 from

<https://analysisfunction.civilservice.gov.uk/about-us/analysis-function-annual-report-april-2023-to-march-2024/>

Bridging the data-sharing chasm from

<https://www2.deloitte.com/us/en/insights/industry/public-sector/government-trends/2023/boosting-data-sharing-across-government.html>

Data Maturity Assessment for Government from

<https://www.gov.uk/government/collections/data-maturity-assessment-for-government>

IDG58000 - Information Disclosure Gateways with other government departments: The Trade Act 2021 from

<https://www.gov.uk/hmrc-internal-manuals/information-disclosure-guide/idg58000>

Data-sharing and Linkage for the Public Good from

<https://osr.statisticsauthority.gov.uk/publication/data-sharing-and-linkage-for-the-public-good/>

Data for the public good from

<https://nic.org.uk/app/uploads/Data-for-the-Public-Good-NIC-Report.pdf>

Data-sharing can help the public sector deliver improved outcomes for citizens from:

<https://www.openaccessgovernment.org/data-sharing-public-sector-deliver-improved-outcomes-citizens/155041/>

Data-sharing Governance Framework from

<https://www.gov.uk/government/publications/data-sharing-governance-framework/data-sharing-governance-framework>

Data-sharing across the public sector: the Digital Economy Act codes from

<https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/data-sharing/data-sharing-a-code-of-practice/data-sharing-across-the-public-sector-the-digital-economy-act-codes/>

Data Security For Governments: Current Challenges And The Way Forward from

<https://www.forbes.com/councils/forbestechcouncil/2023/02/22/data-security-for-governments-current-challenges-and-the-way-forward/>

Government Cyber Security Policy Handbook from

<https://www.security.gov.uk/policy-and-guidance/government-cyber-security-policy-handbook/>

Government data management for the digital age from

<https://www.mckinsey.com/industries/public-sector/our-insights/government-data-management-for-the-digital-age>

Government Digital and Data Profession Capability Framework from

<https://ddat-capability-framework.service.gov.uk/>

Six actions to help governments achieve data centrality from

https://www.ey.com/en_uk/insights/government-public-sector/six-actions-to-help-governments-achieve-data-centrality

Siemers, Olga, and Ileana Daniela Serban. 2024. "New Development: Addressing Wicked Policy Problems through Cross-Government Collaboration—Insights from the UK Context." *Public Money & Management*, September, 1–5.

<https://www.tandfonline.com/doi/pdf/10.1080/09540962.2024.2393242>

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<https://www.paconsulting.com/industries/defence-and-security/secure-futures>



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