



National Audit Office

# Challenges in using data across government

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# Background information

- Earlier this year we carried out a landscape review of government's use of data. The work was designed to support government as it develops its data strategy
- It draws together our experience of data from our studies across government
- Many believe that government can do much more with its data, for example



open data



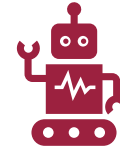
data sharing



personalisation  
of services



reduction in the  
citizen burden



analytics and cutting  
edge technology

- These are all good aims
- They sound easy to achieve - but they are not
- Whilst great opportunities exist there are also blockers and constraints that require sustained effort to overcome

# How we scoped the work

1. Understand the current landscape



Part one:  
introduction

Benefits of using data

Current responsibilities

Previous initiatives

2. Have a clear understanding of what it is trying to achieve



Part two: strategy and leadership

A clear strategy in place

Leadership and accountability

Funding to make it possible

3. Have the infrastructure in place to make it work



Part three: data, systems and processes

High quality data

Data standards to improve consistency

Systems and tools which talk to each other

4. Have the conditions in place to make it work



Part four:  
conditions

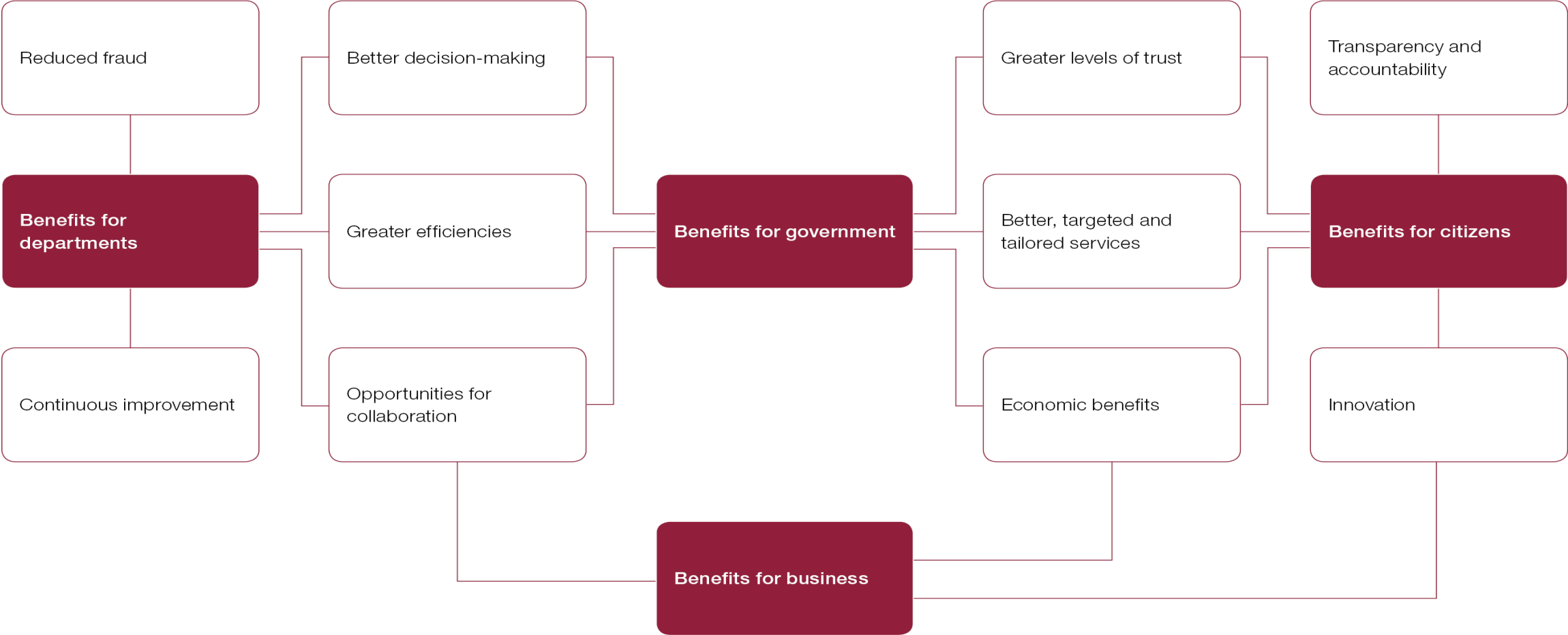
Creating a secure environment

Legislation to enable change

Capability to secure change

# Benefits of good data use widely acknowledged

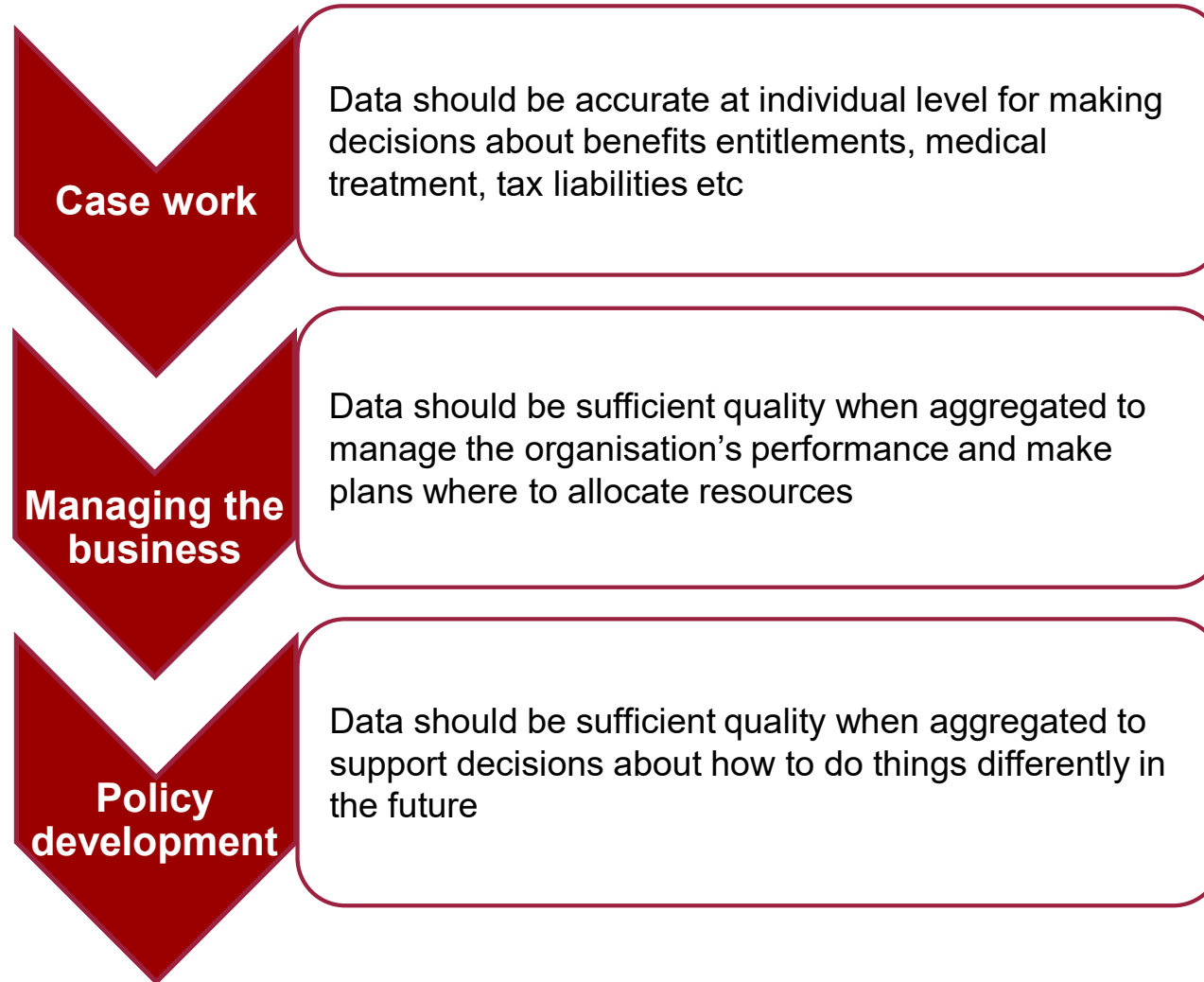
Using data well has many benefits for government and people



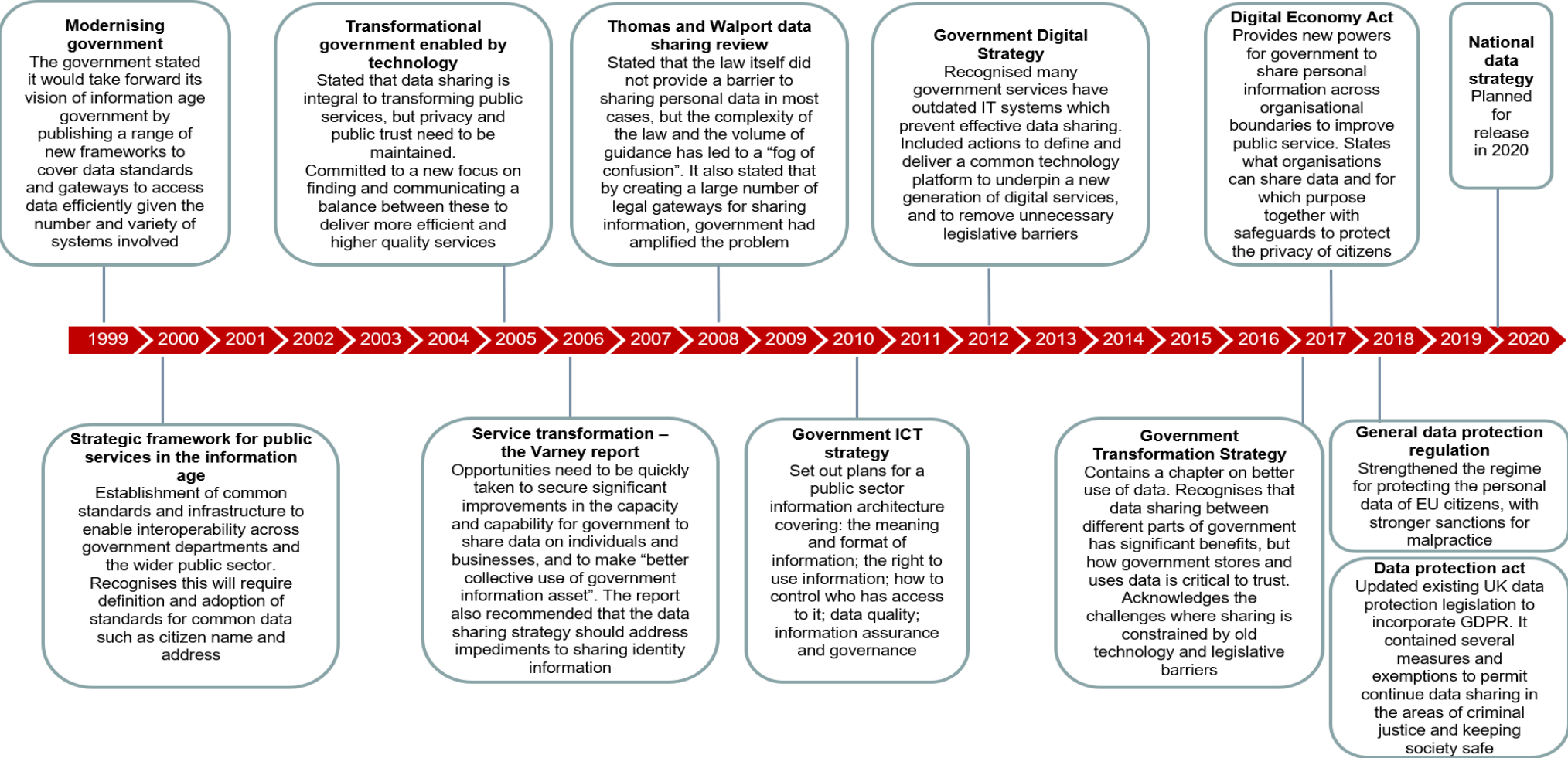
Source: Department for Digital, Culture, Media & Sport

# Government uses data at different levels

## Data quality needs vary



# Many attempts to address and harness data



# But challenges remain



## Strategy and leadership

- Government does not treat data as a strategic asset
- No single department leads on data improvements across government
- Funding pressures can inhibit progress on data projects



## Data, processes and technology

- Data quality is often inadequate
- A lack of data standards across government has led to inconsistent ways of recording the same information
- Legacy systems often only work for the policy they were built to deliver



## Conditions for success

- Government's use of data is shaped by the need to keep it secure
- Government has put in place legislation to make data-sharing easier
- Historical ways of working can inhibit progress



# Strategy and leadership

## Government does not treat data as a strategic asset

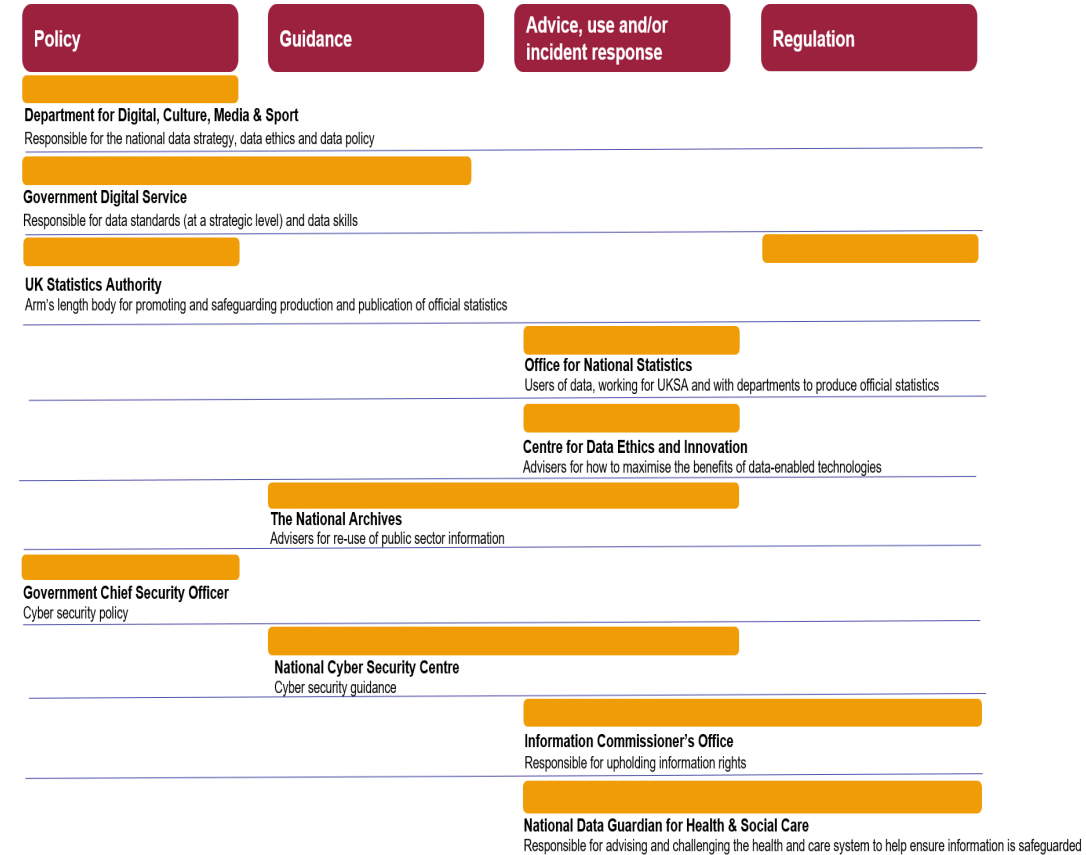
- DCMS is the only department that refers to data as a strategic asset in its 2018 single departmental plan. Five departments of the seven we examined in detail have data strategies, and these were of varying maturity.
- By contrast, for government property there are long-term funding plans, with publicly available strategies for the whole of government collectively and individual departments.

## No single department leads on data improvements across government

- Responsibility for data policy and data ethics sits within DCMS. The Government Digital Service (GDS) and the Office for National Statistics also have an interest in data policies and provide support to departments. Range of other bodies involved.

## Funding pressures can inhibit progress on data projects

- Data projects have sometimes been set aside when funding is under pressure.







# Data, processes and technology

## Data quality is often inadequate

- Effectiveness of programmes can be compromised because data quality is poor.
- It takes manual effort to make the data usable and to extract the relevant information.

## A lack of data standards across government has led to inconsistent ways of recording the same information

- A lack of standards across government has led to inconsistent ways of recording the same data.
- The problem is replicated in local areas where information is recorded differently across local and constitutional boundaries.

## Legacy systems often only work for the policy they were built to deliver

- Even within the same department, data cannot be extracted or shared easily. A lack of common data models and standards within and between departments makes it difficult and costly to combine different sources of data.
- Some government departments have not always prioritised replacing older technology, but until they do so there will be ongoing costs and inefficiencies in decision-making.

**Figure 10**

Selected examples of identifiers used for citizens and businesses

There are more than 20 identifiers for people and businesses

Department	Customer record identifier
Identifiers for individuals and addresses	
Local government – registers of births	Name, date and place of birth, parents' names and occupations
Local government – electoral roll	Name, address, date of birth
Local government – council tax	Council tax reference number
Department for Work & Pensions	National Insurance number Benefit number (which differs for each benefit)
Department of Health & Social Care	NHS number Hospital number (each hospital has own record system) Medical Certification of Cause of Death register (not the same as the local authorities' registers of deaths)
HM Revenue & Customs	National Insurance number Unique taxpayer reference
Department for Education	Unique learner identifier Education provider identifier
Ministry of Justice	Her Majesty's Prison & Probation Service unique offender identifier Parties' names
Home Office	Passport number/biometrics Police National Computer identifier/biometrics Criminal Records Office identifier
Office for National Statistics – census	Address, names, dates of birth
Cross-government	Gov.uk Verify identifier Government gateway identifier
Driver & Vehicle Licensing Agency	Driver's licence number Vehicle registration number
Identifiers for Businesses	
HM Revenue & Customs	Business trading names VAT registration numbers Economic operator registration and identification number (imports/exports) Other tax- and duty-specific registration numbers (different for each tax or duty)
Companies House	Company registration number
Office for National Statistics – business register	VAT or PAYE numbers



# Conditions for success

## Government's use of data is shaped by the need to keep it secure

- Well-publicised misuse of data has increased concerns and undermined efforts to communicate benefits.
- Departments' concerns about retaining public trust can discourage them from looking for legal solutions to use data to maximise its potential.

## Government has put in place legislation to make data-sharing easier

- The Digital Economy Act 2017 provides a legal framework for establishing data-sharing arrangements.
- DCMS has provided support to departments on how to use the Digital Economy Act to support public services, but departments still lack confidence.

## Historical ways of working can inhibit progress

- There are boundaries between civil servants as well as systems.
- Return on investment for a department can often be difficult to justify in data projects because the benefits might be seen elsewhere in government.

Challenges in using data across government 2019

### Figure 14

#### Case example: Centre of Excellence for Information Sharing

One of the greatest challenges impacting on both individual and business support was historic ways of working

**Main departments:** Initiative jointly funded by the Department for Education, Department of Health, Department for Work & Pensions, Home Office and Department for Business, Innovation & Skills.

**Description:** An initiative to encourage and explore how to overcome barriers to data-sharing at local level.

**Objectives:** The Centre was set up in 2014 to work with local and central government departments to investigate, challenge and overcome cultural barriers to information-sharing.

#### What happened

The Centre drew on research to show that focusing only on data-sharing can lead to confusing assumptions about the nature of what is being shared, for what purpose and with what intent. The Centre's work showed that existence of an information-sharing agreement or protocol is not on its own enough to resolve all information-sharing issues. Taking a technological approach as the starting point is also rarely successful; and being sensitive to the cultural issues is a more fruitful way of approaching the situation. The Centre found that one of the greatest challenges impacting on both individual and business support was historic ways of working. Working with partners, building relationships, consulting, communicating and developing trust are all required to make information flow. The Centre published numerous case studies on its website to illustrate these points.

#### Outcome

Funding was not maintained, and the Centre closed in June 2018.

#### Why this is important

Sharing data is difficult and may be expensive and ultimately unsuccessful unless organisations understand each other before they start commissioning technological solutions. Partners may have different priorities; different legal constraints; data that is quite different as it is used for different purposes; different systems in which the data is held and secured; and different arrangements and costs for extracting data. Jointly exploring and resolving these issues builds the trust and confidence needed to share data.

Source: Centre of Excellence for Information Sharing, 2019. Available at: <http://informationsharing.org.uk/> (accessed 12 June 2019)

# Practical steps for government to improve data

**Have a clear understanding of what you are trying to achieve**

- A clear plan in place
- Leadership and accountability
- Funding to make it possible

**Have the infrastructure in place to make it work**

- High quality data
- Data standards to improve consistency
- Systems and tools which talk to each other

**Have the conditions in place to make it work**

- Creating a secure environment
- Legislation to enable change
- Capability to secure change