

Data: uses, opportunities and risks

Digital transformation training programme
Module #5



ASIA AND THE PACIFIC

**Regional
Innovation Centre**

A few zoom we start

house rules before

- Make sure your name is displayed
- Keep your video on unless you have connectivity issues
- Mute if you're not speaking
- Don't hesitate to ask questions by raising your hand or using the chat

Presentation of the learning modules

1. Introduction to digital government

2. Human-centred design for digital services

3. Agile and open ways of working

4. Building trust in digital government

5. Data: uses, opportunities and risks

6. Making the right tech choices

7. Navigating barriers to digital government

Learning objectives

- ✓ Understand how organisations can create value from data, from building better services to policy making and evaluation
- ✓ Understand the common barriers and enablers of data use in government
- ✓ Explain the 'once-only' principle
- ✓ Understand the importance of using data responsibly

- 1. Creating public value with data**
- 2. The value of open data**
- 3. Collecting, storing and maintaining data**
- 4. The once-only principle**
- 5. Responsible use of data**

1. Creating public value with data

2. The value of open data

3. Collecting, storing and maintaining data

4. The once-only principle

5. Responsible use of data



5-min activity

How would you define **data**?

Data is a collection of facts.

It can be quantitative or qualitative.



The world's most valuable resource is no longer oil, it's data.

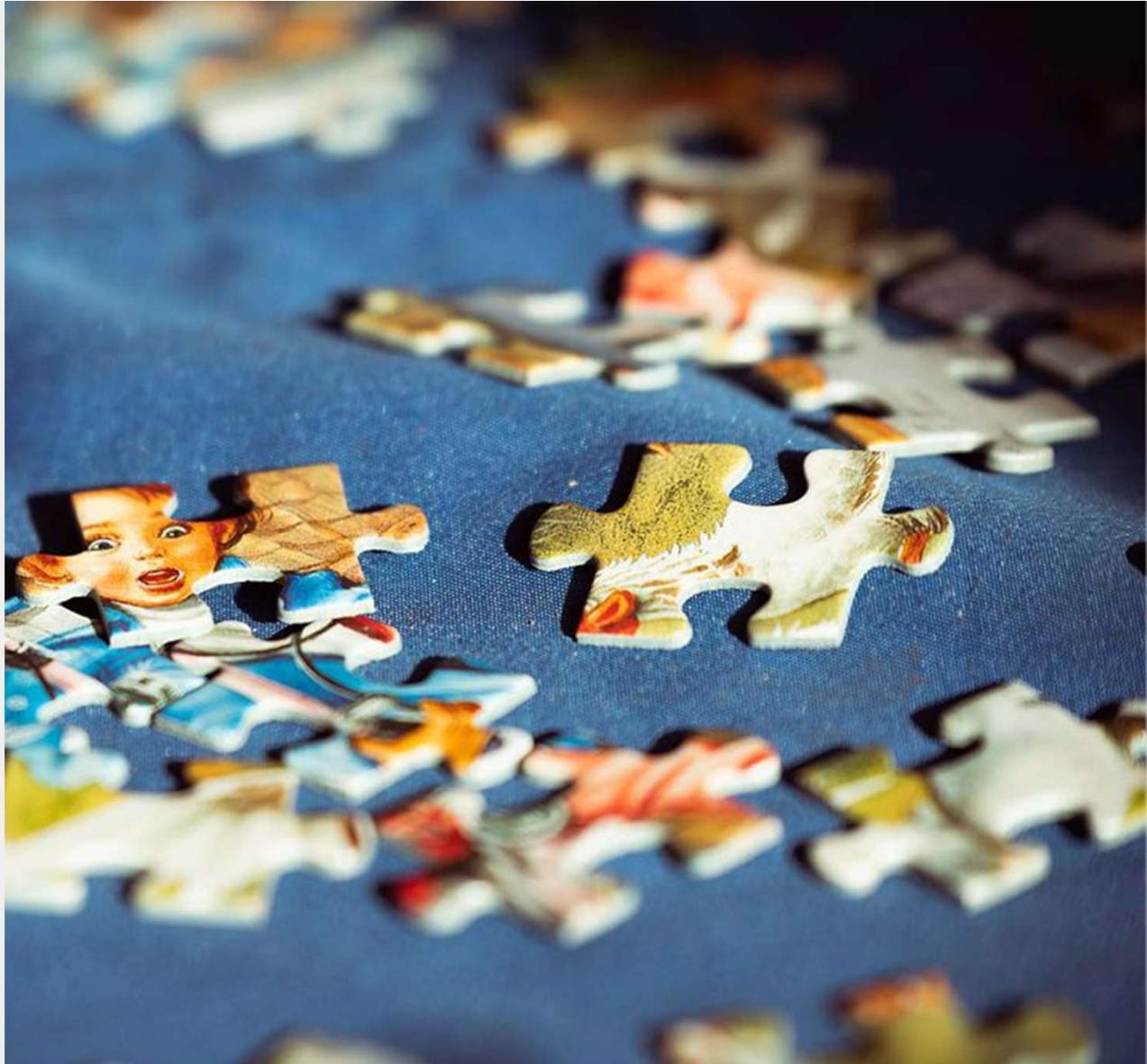
The Economist, June 2017

90% of the world's data has been created in the last **2 years**.

More data is generated through the increased use of connected devices and online services.



Data enables
better
**decision
making.**





10-min activity

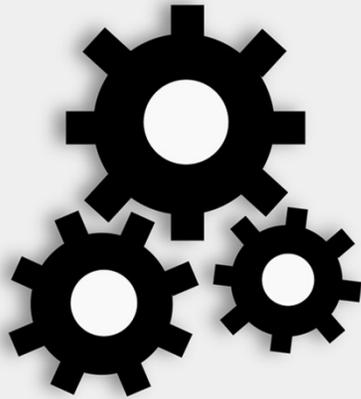
What makes data initiatives **fail**?

What are the biggest **barriers** to using data in government?

Biggest barriers to using data in government



Poor data
quality



Lack of
interoperabilit
y



Lack of
data
protection



“it’s the data
scientists’ job!”

Under-reported figures

From 25 Sept to 2 Oct

50,786

Cases initially reported by PHE

15,841

Unreported cases, missed due to IT error

8 days of incomplete data

1,980 cases per day, on average, were missed in that time

48 hours Ideal time limit for tracing contacts after positive test

Source: PHE and gov.uk [↗](#)



16,000 covid-19 cases lost in the UK in October 2020

Getty Images

A good use of data can impact people's lives positively. It can even save lives.

Sierra Leone: using data and digital tools to fight Ebola



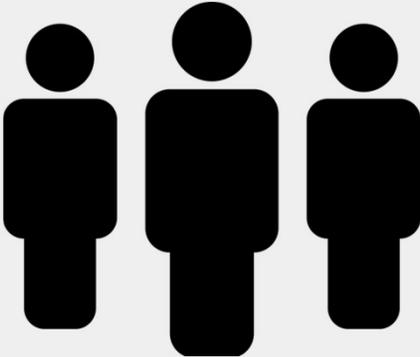
Field visit of the 2nd Vice-President of the Republic of Burundi, Dr Joseph Butore to get to know more on Ebola preparedness activities in the country.

Data users



Government

t



Civil society



Businesses

Example

An aerial night photograph of a city, likely Kuala Lumpur, Malaysia. The foreground shows a large, organized residential area with many apartment blocks and parking lots. In the background, the city skyline is illuminated with various lights, including the Petronas Twin Towers. The overall scene is a dense urban environment at night.

**Malaysia's electricity supplier uses
consumption data to anticipate demand and
reduce waste**



10-min activity

Give an example of how data that can be useful for (1) government organisations, (2) civil society and (3) private companies.

1. Creating public value with data

- 2. The value of open data**

3. Collecting, storing and maintaining data

4. The once-only principle

5. Responsible use of data

Open government data refers to the information collected, produced or acquired by public bodies and made freely available for re-use for any purpose.

A Venn diagram illustrating the relationship between different types of data. It features four overlapping circles: a green circle for 'OPEN DATA', a purple circle for 'PRIVATE DATA', a yellow circle for 'GOVERNMENT DATA', and a light blue background area for 'PUBLICALLY AVAILABLE DATA'. The 'OPEN DATA' circle is entirely within the 'PUBLICALLY AVAILABLE DATA' area. The 'PRIVATE DATA' circle overlaps with the 'GOVERNMENT DATA' circle. The 'GOVERNMENT DATA' circle overlaps with both the 'OPEN DATA' and 'PRIVATE DATA' circles. The 'PUBLICALLY AVAILABLE DATA' area is the largest, encompassing the other three circles.

PUBLICALLY AVAILABLE DATA

PRIVATE DATA

OPEN DATA

GOVERNMENT DATA

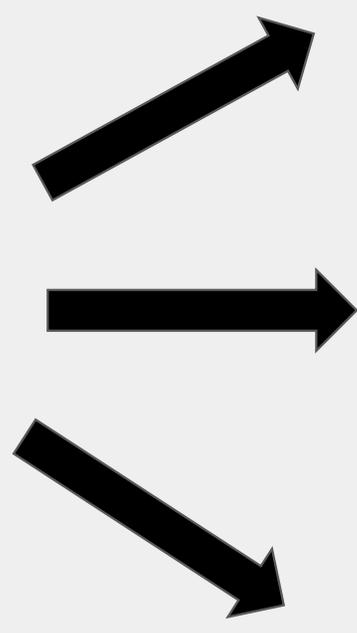
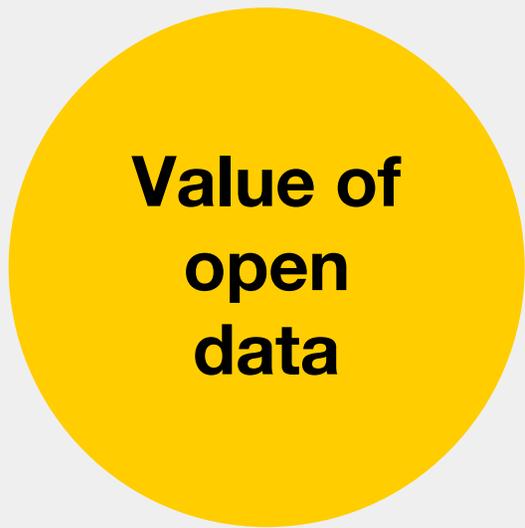
Not everything can be shared

Conditions for data to be open

- Everyone must be able to access, use and share data
- Free or reasonable cost to access
- No constraints on re-use (even for commercial purposes)

Open data characteristics

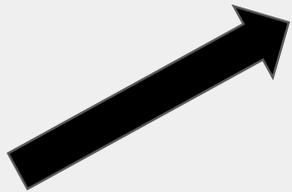
- Open data is shared in a **machine-readable format**
- Open data must be **licensed for re-use**



Economic

Governance

Social



Economic



Governance



Social

Example

The Economic Value of Open Data



Estimated values for 2020 for the EU28+

The economic benefits of Open Data are being reaped at different extents across the EU28+ countries



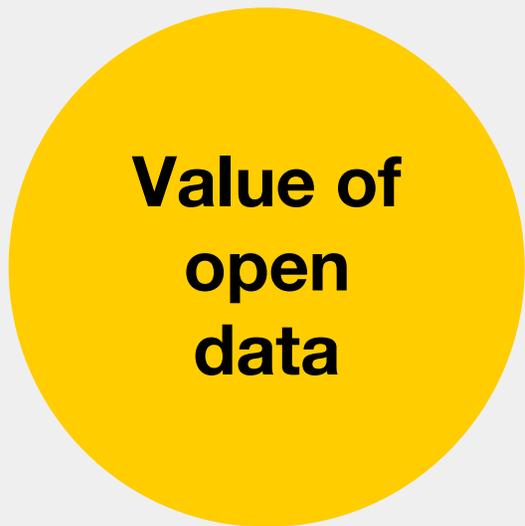
Open Data per country
Direct market size in 2020 per EU28+ country

Classification:
■ < €0,5 bn ■ € 0,5 - 5 bn ■ > € 5 bn

Example

Shanghai Data Exchange





Economic



Governance

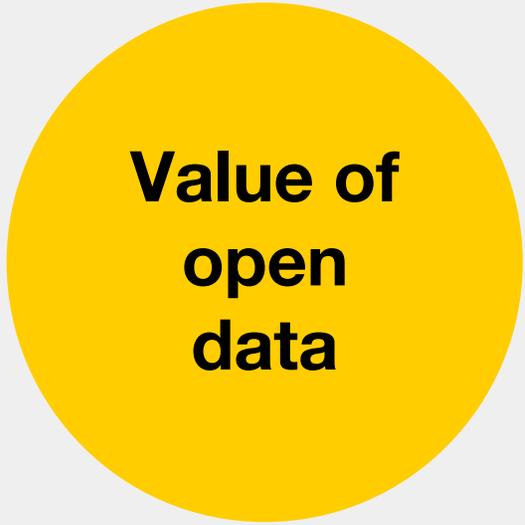


Social

Example

Thailand: increasing transparency in the infrastructure sector

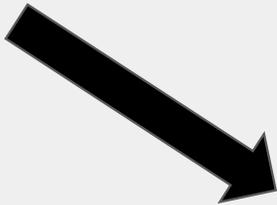




Economic



Governance



Social

Example

Choosing healthcare service providers in Uruguay



Example

Finding masks in
Taiwan's
pharmacies at
the peak of the
covid-19 crisis

Only the designated pharmacies whose registration information contains addresses are listed. Other pharmacies 38,257,950 views

SHARE

All items

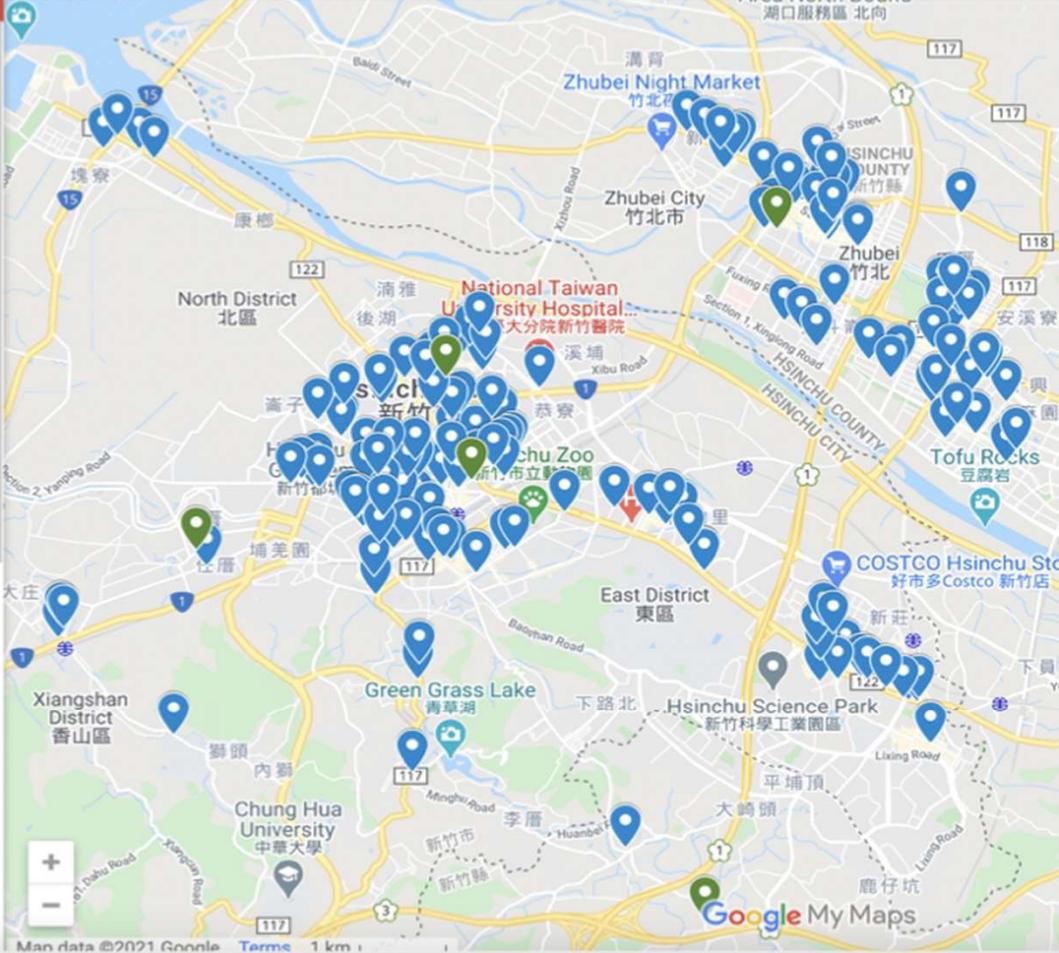
Group (1)

Group (2)

Southern District Business Team

All items

High screen business group



Map created using open location data of designated pharmacies selling masks in Taiwan.

Barriers to using open data

- Users don't know about the data
- Fear of breaching data protection rules
- Data quality concerns

Example



How open data on crops helps farmers make sustainable decision

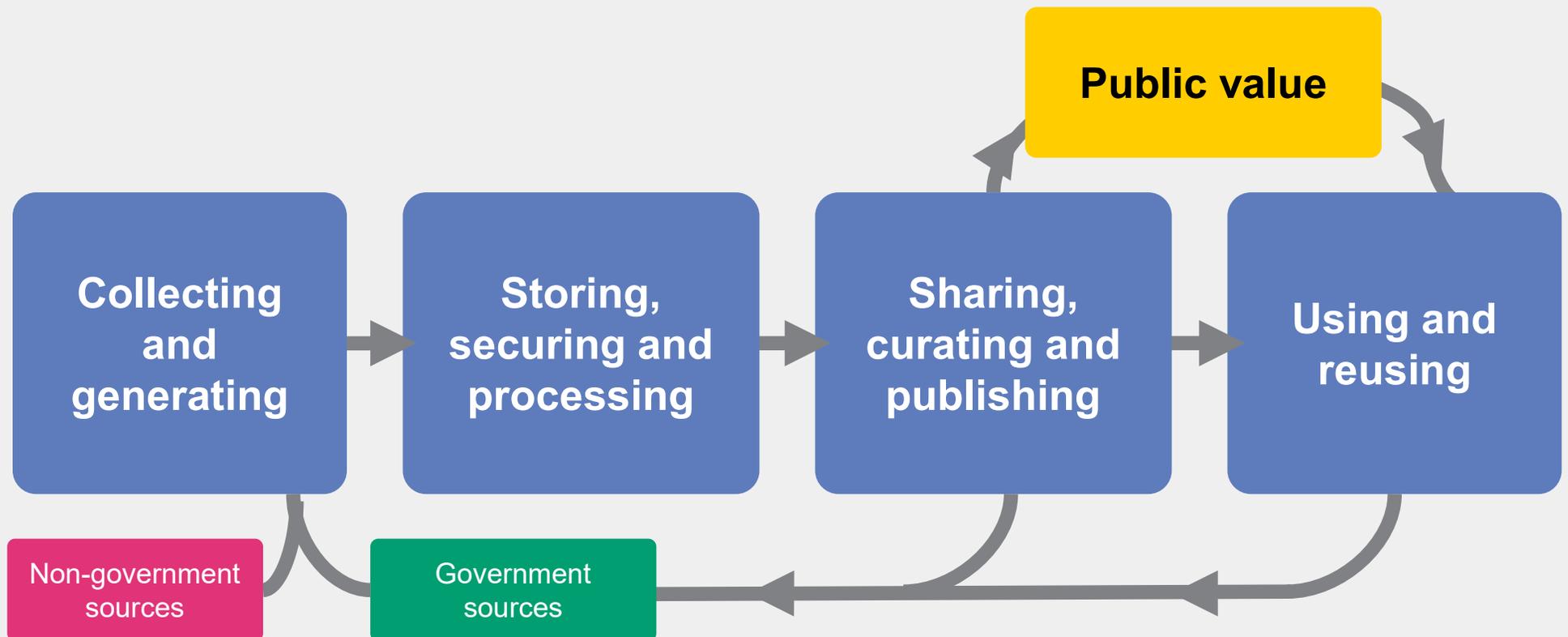


1. What data does your department organisation collect?
2. Identify at least one data set that you could release in open data.
3. How could they use this data to create public value?

1. Creating public value with data
2. The value of open data
- 3. Collecting, storing and maintaining data**
4. The once-only principle
5. Responsible use of data

The right data is not always available at the right place and at the right time to enable decision making.

The data value cycle



Data is not ‘the new oil’. We collect data. We choose what to collect, how we collect it and how we structure it.

This has significant implications on service outputs.

Example

**Airport scanners discriminating against
coloured minorities**



Example



Determining how to reduce drop out rates from schools



15-min activity

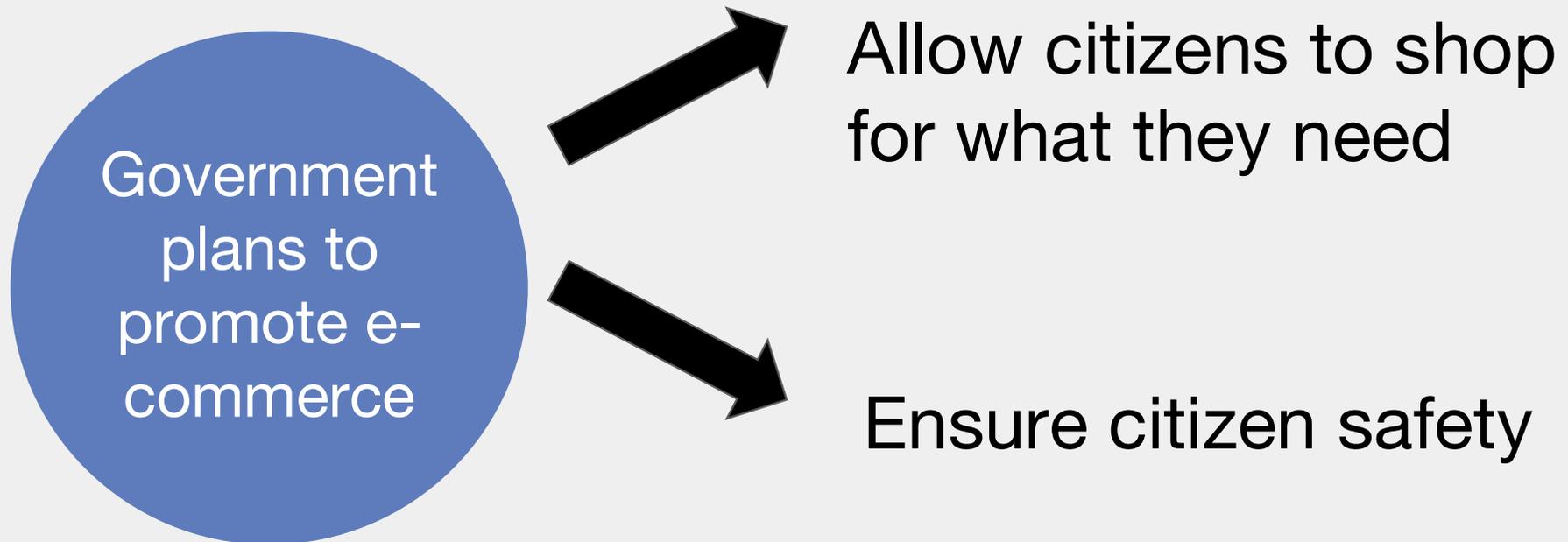
With the covid-19 pandemic, people's lives changed drastically, between lockdowns and other mobility restrictions.

Let's say that a government wanted to promote e-commerce as a way to ensure safer shopping for people.

How could data have been helpful?



What is the problem we're trying to solve?





15-min activity

People's needs

Groceries

**Pharmaceutical
products**

What else?



What data may we want to collect?

Does the shop already have a delivery option?

Does the shop allow for online payment?

Are there any special requirements for delivery (eg. frozen goods)?

Does the shop have a digital way of marketing their goods?

What else?



15-min activity

Is the data already available?

Who has access to this data?

What additional data may we want to collect?



What do we need to know about users?

Do people have access to the internet?

Can people use online payment?

Are people digitally literate?

What else?



Women are less likely to have access to meaningful internet connectivity.



1. From your experience during the pandemic, can you think of digital services that have led to some people to be excluded?
2. What could be some policy considerations to ensure greater access to digital services?

Data infrastructure relates to the **components** of a system.

Data architecture describes how these components are **designed** and how they **interact** with each other.

Data is said to be **interoperable** when it can be easily reused and processed in different applications, allowing different information systems to work together.



5-min group discussion

Suppose we want to keep track of who attended this training programme, and that we captured participants' details in a different format at each session. At the end of session 1, we received hand-written information and then scanned it as PDF. In session 2, we gathered details in a spreadsheet. In session 3 in a word document. How easy would it be to gather all this data in one single place?



Now suppose that on the participant registration form, there is a field 'status'. Some of the participants understood the status to be marital status whereas some of them understood it as employment status. What consequences does this lead to?

Types of interoperability

1. Foundational
2. Structural
3. Semantic
4. Human

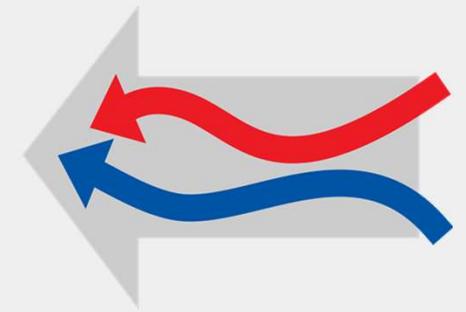
Data standards provide a common way for various departments to collect, store, manage and share data in a consistent way.

What can be standardised?



Vocabulary

Data
exchange



Guidance

Home	Business, industry and trade	Economy	Employment and labour market	People, population and community	Taking part in a survey?
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Search for a keyword(s) or time series ID

[Home](#) > [About us](#) > [Transparency and governance](#) > [Data Strategy](#) > [Data Standards](#)

Data Standards

The Data Standards that support our Data Principles and Data Policies.

Data standards from the UK Office for National Statistics

1. Introduction
2. Currency
3. Money
4. Dataset storage
5. Date and time
6. Flag
7. ONS character set
8. ONS asset description metadata schema
9. Metadata exchange
10. Naming standards for the Data Access Platform
11. Standard variable format – duration

Data maintenance

Data quality is important. This means that data must be kept up-to-date.

How and who should maintain data?

Data retention

How long do you need to keep data for?

- Legal requirements
- Infrastructure needs



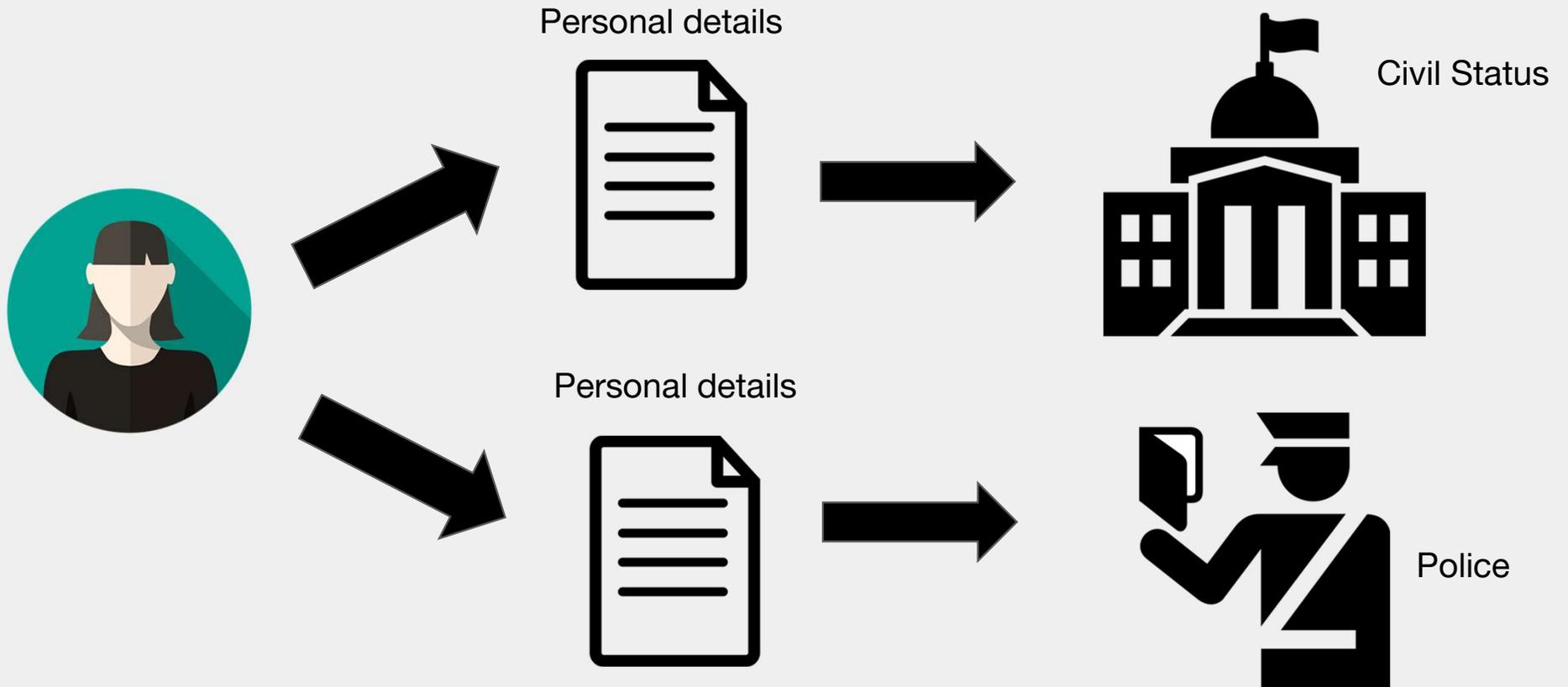
Data governance

How can organisations take a whole-of-government approach?

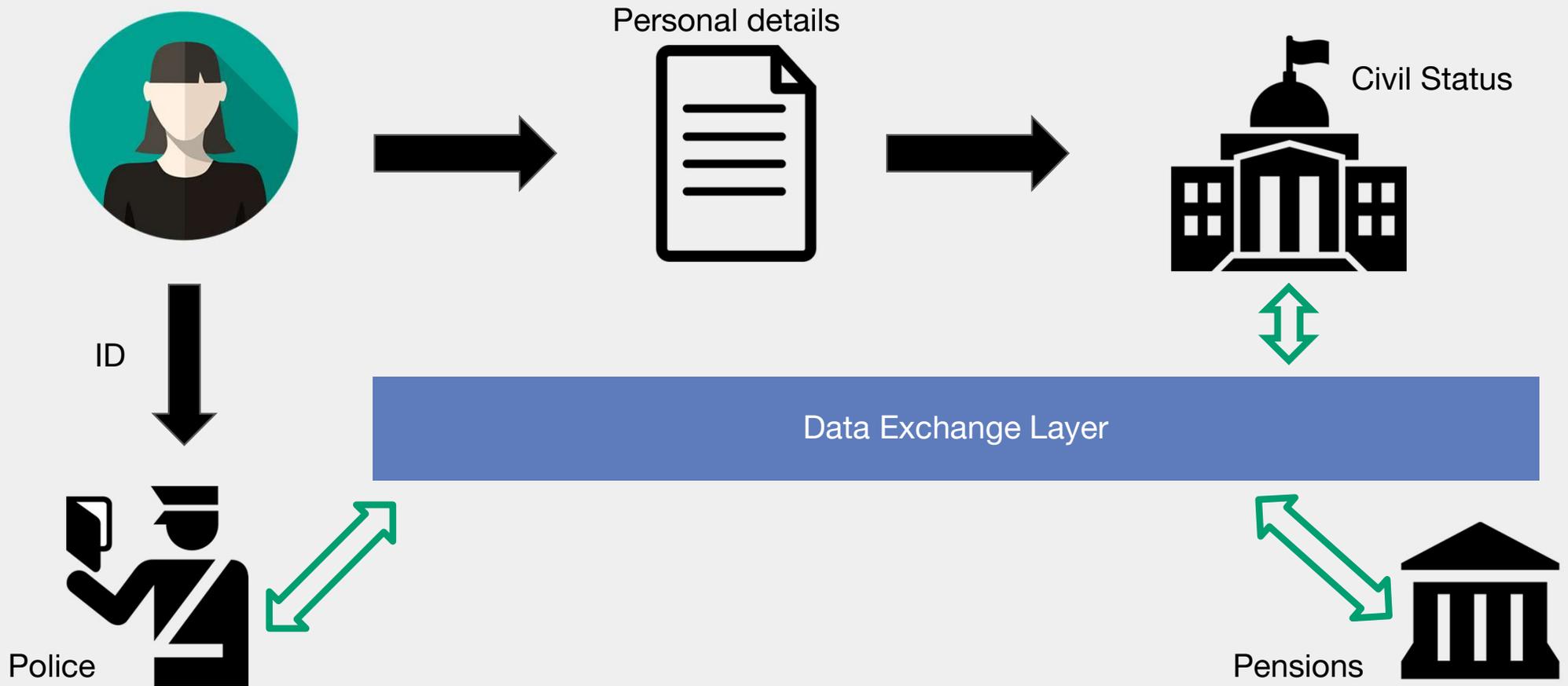
1. Creating public value with data
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5. Responsible use of data

The **once-only principle** means that people should supply their government with the same information only once.

A user journey without the once-only principle



A user journey with the once-only principle



Benefits of the once-only principle

- Less error-prone
- Reduced inefficiencies
- Better user experience

Common barriers to the once-only principle

- Governance



Policy can help create buy-in

- Interoperability



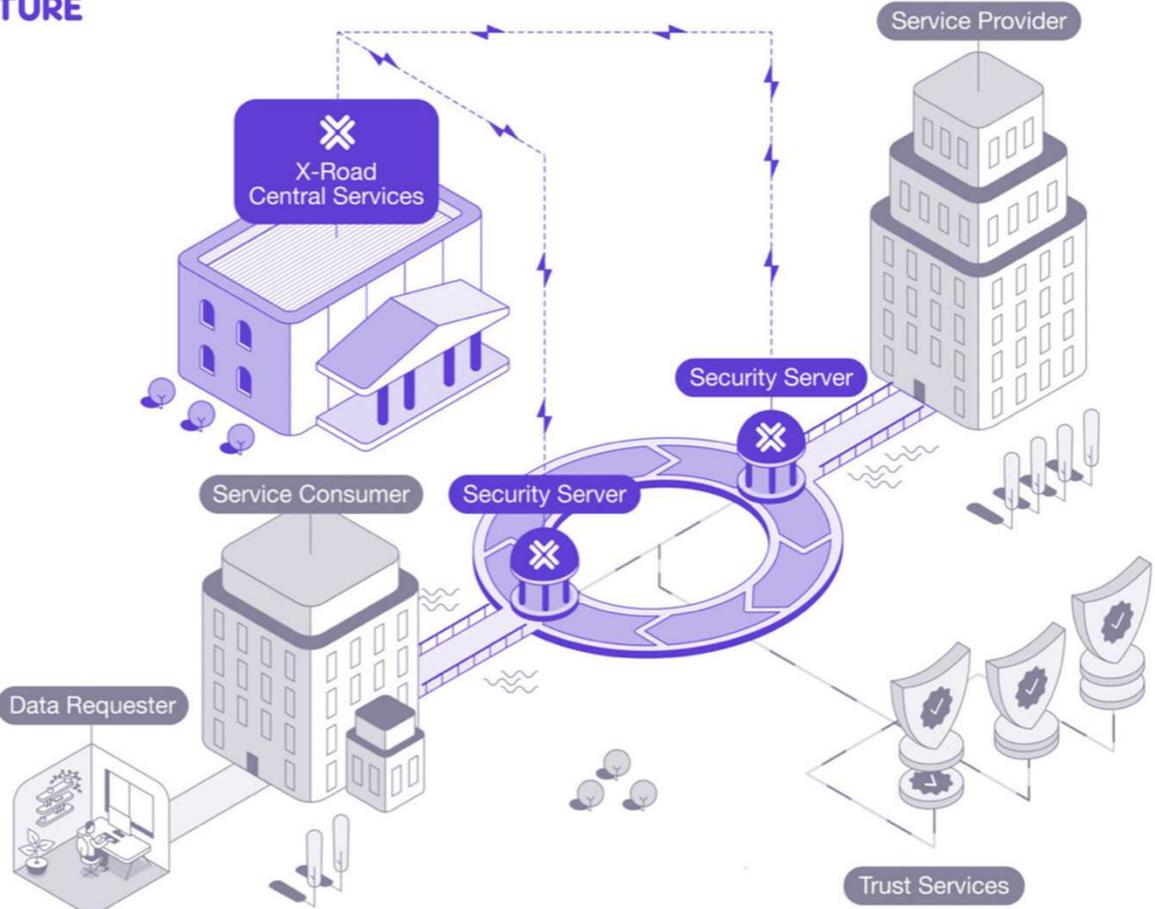
It's better to start small and incrementally!



1. As a user of public services, do you have to submit the same data multiple times to different organisations?
2. What data does your organisation collect? How other departments may use this data?

Implementing the Once-Only Principle using X-Road

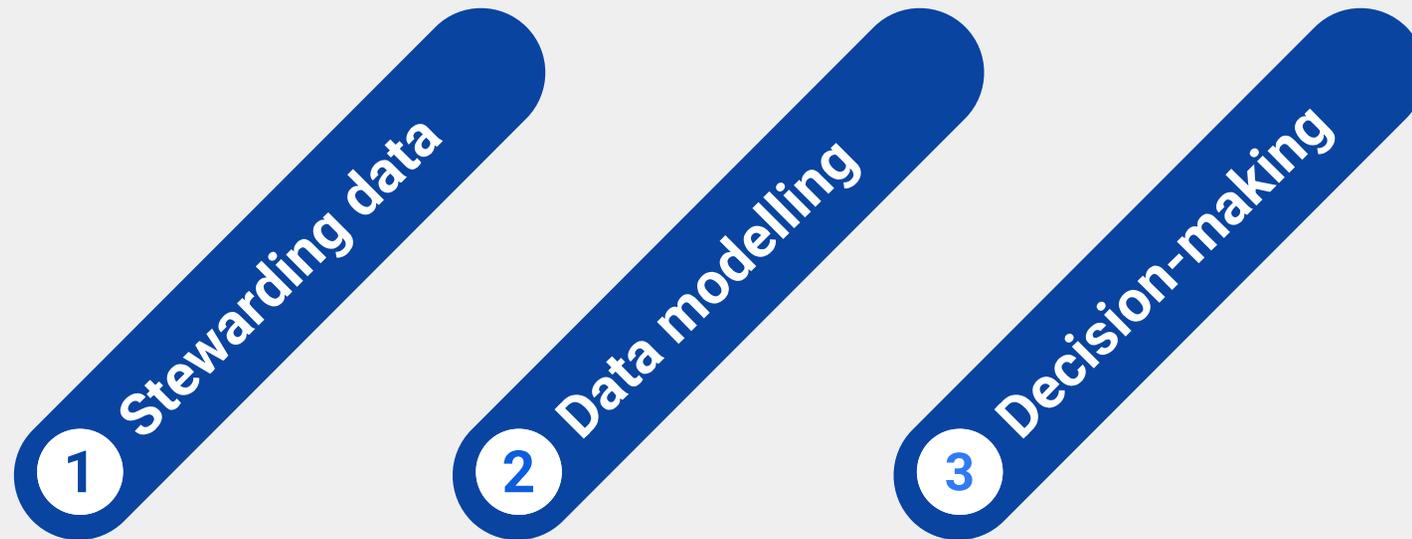
X-ROAD ARCHITECTURE



1. Creating public value with data
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Data ethics refers to using data without harming anyone directly or indirectly, even if the distribution of data is lawful.

Data ethics apply to all stages of the data lifecycle

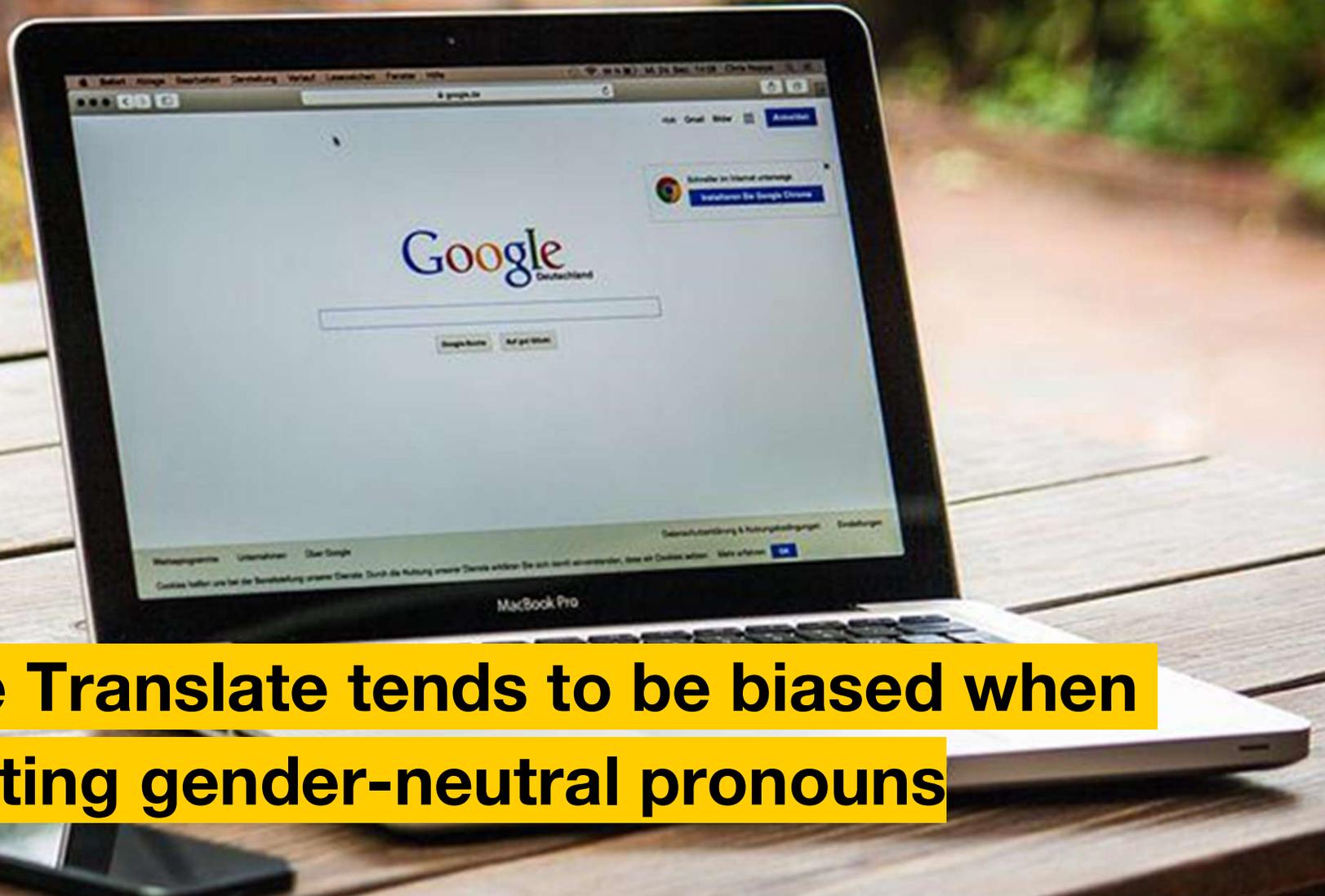


Example

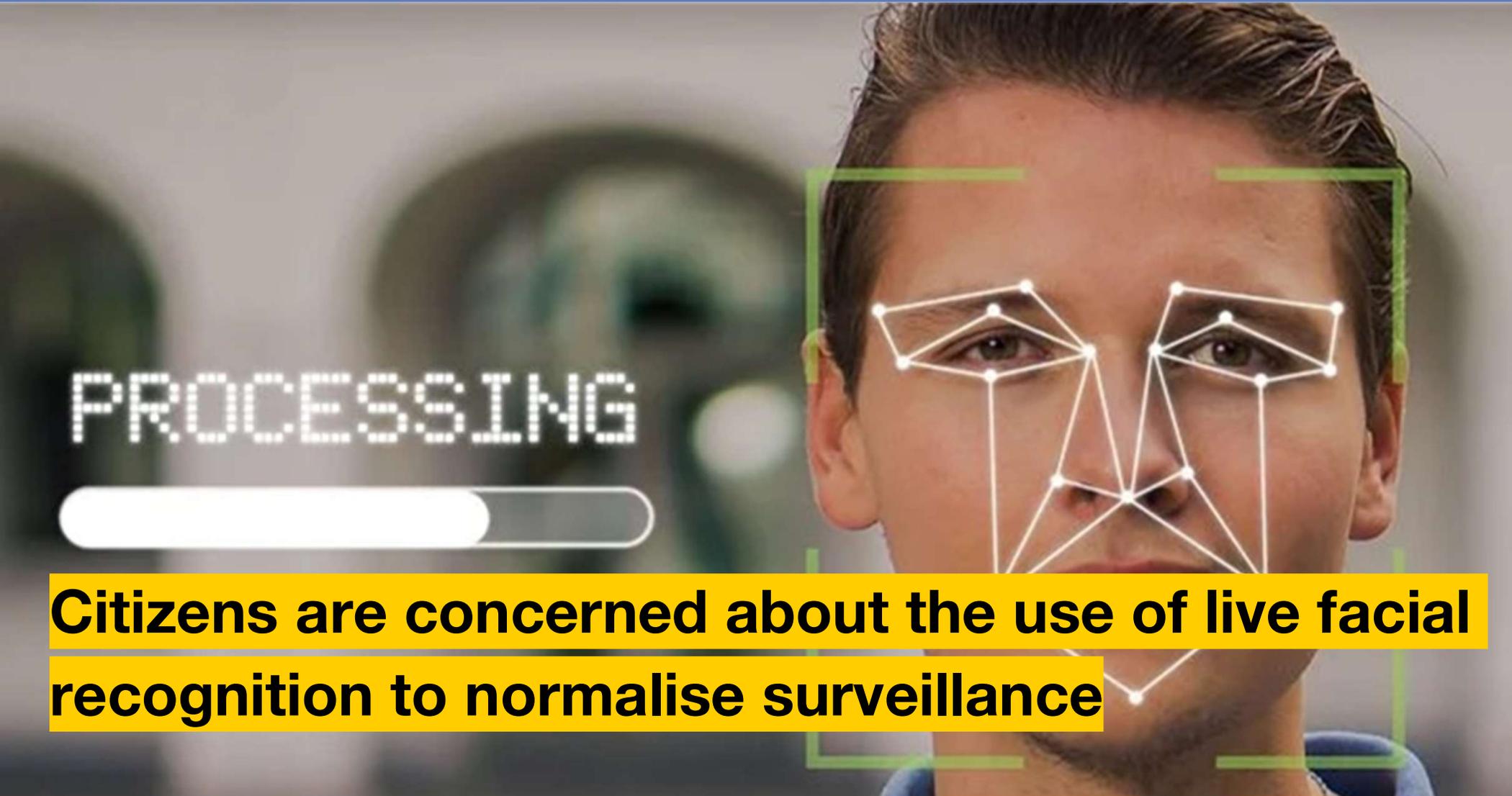
A photograph showing two women in profile, looking at a computer monitor in an office environment. The woman in the foreground is on the left, and the woman behind her is on the right. They are both looking towards the right side of the frame. The computer monitor displays a webpage with various text and graphics. The background is slightly blurred, showing office furniture and other people.

How Amazon's AI recruitment tool discriminated against female candidates

Example



Google Translate tends to be biased when translating gender-neutral pronouns



Citizens are concerned about the use of live facial recognition to normalise surveillance

How to ensure the ethical use of data?





10-min activity

Let's go back to the group discussion we had on the Once-only principle and the different data sets that you collect as civil servants.

Select a few of these data sets and try to test them through the Data Ethics Canvas.

Good practices

- Develop a government-wide data policy
- Be purpose-led
- Be transparent about data governance and data uses
- Be aware of data bias
- Monitor and evaluate



15-min group discussion

What are the goals of your organisation and how can data help you better achieve these goals? In one or two sentences, articulate a data vision for your organisation.

- Data enables better decision making.
- Open data creates economic, governance and social value
- Data can be used to improve policy-making and ensure no one is left behind.
- Interoperability allows data sharing between different systems

- The once-only principle is to ensure citizens do not need to provide governments with information they have already supplied.
- Implementing the once-only principle improves the citizen journey and increases efficiency.
- Data ethics apply to all stages of the data lifecycle, from the collection of data to the deployment of policies or services informed by data analysis.

Next module:

Managing digital technology risks



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digital**

This presentation has been designed using resources from [Flaticon.com](https://flaticon.com) and [Unsplash.com](https://unsplash.com).