Incorporating the economic value of data into the System of National Accounts.

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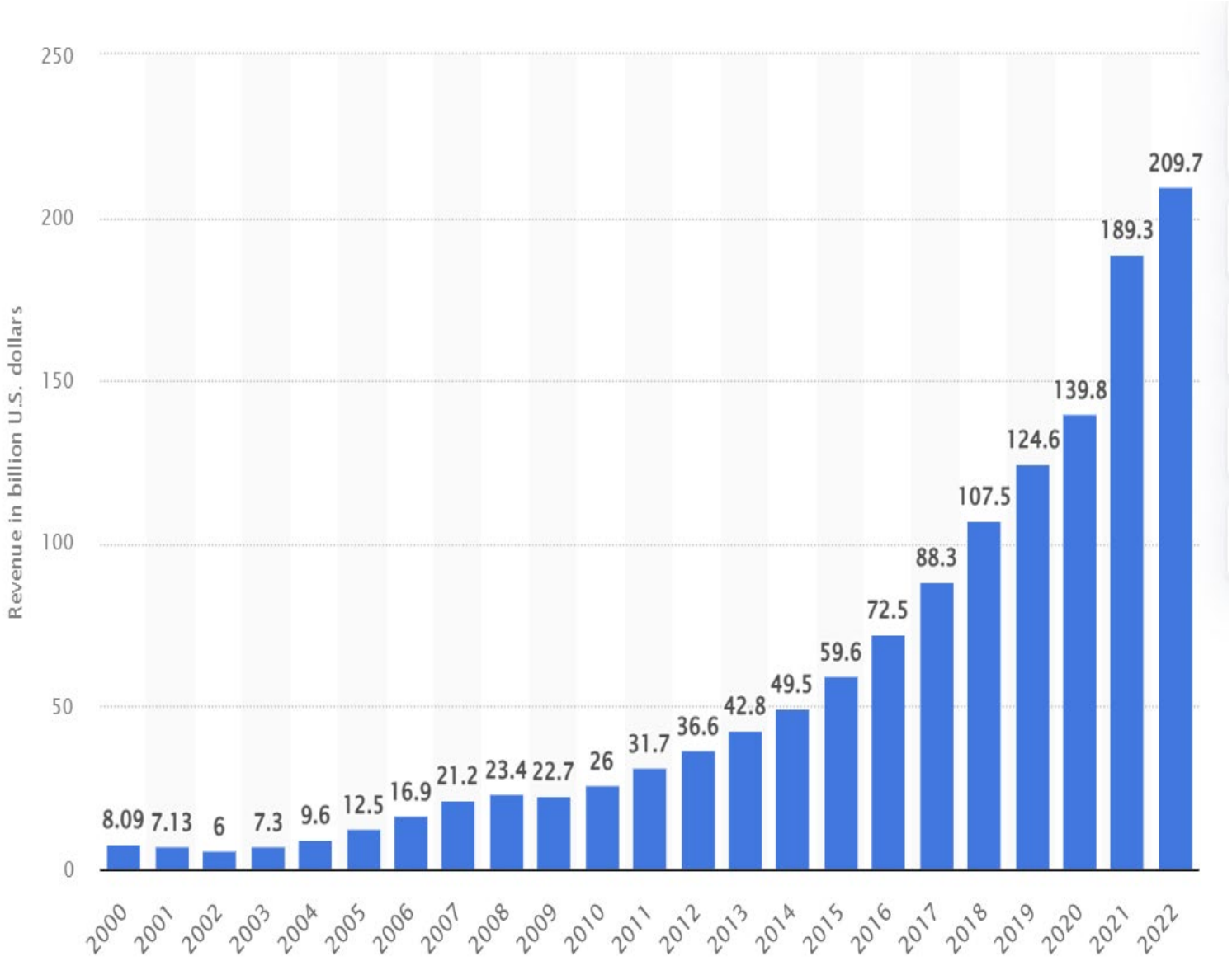
Data is becoming a critical input into new economic products.

- **Digital advertising**
- **Artificial intelligence**
- **Sharing economy**

...and Processes

- **Just-in-time supply chains**
- **Customer loyalty programs**
- **Improved demand forecasts**

Online advertising revenue, United States, 2000 - 2022



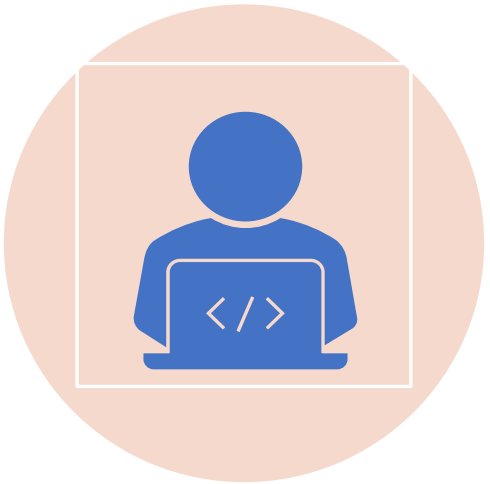
Source: Statista

Deriving the value of data

There have been many different approaches to estimating the value of data assets

Based on market capitalization or venture capital valuation

Revenue from sales of data products or data intensive products



WTP or WTA – either directly or indirectly (the user is implicitly placing a value on their data).

Bringing data assets into GDP

Estimates are most useful if, compiled by national statistical offices in a consistent, comparable manner

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Conceptually, Data would appear to align with other produced assets in GDP…

- Data (as defined for economic statistics) is the result of production.
- Data can be used repeatedly in the production of goods and services
- Data can be considered a store of value

Additionally, since…

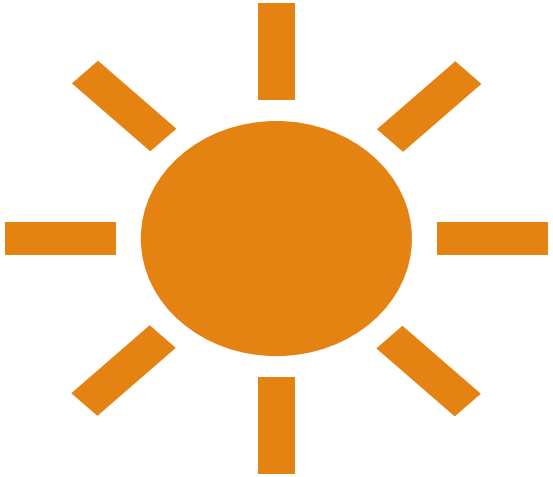
- Data is an ever-increasing input into production
- Data has the potential to drive productivity gains
- Data is fundamental to a wide range of new business models.

There is **strong demand from users** of economic statistics for estimates of data that are **consistent with the SNA**

But what data are we talking about?

Data can mean many different things to different people

Data as the new oil – it can be refined to create added value.



Data as sunshine – "we keep using it, and it keeps regenerating." *Ruth Porat*, Google CFO.

Data as water - It can be contaminated, distributed, stored… and there are leaks

Definition of data for the purpose of the SNA

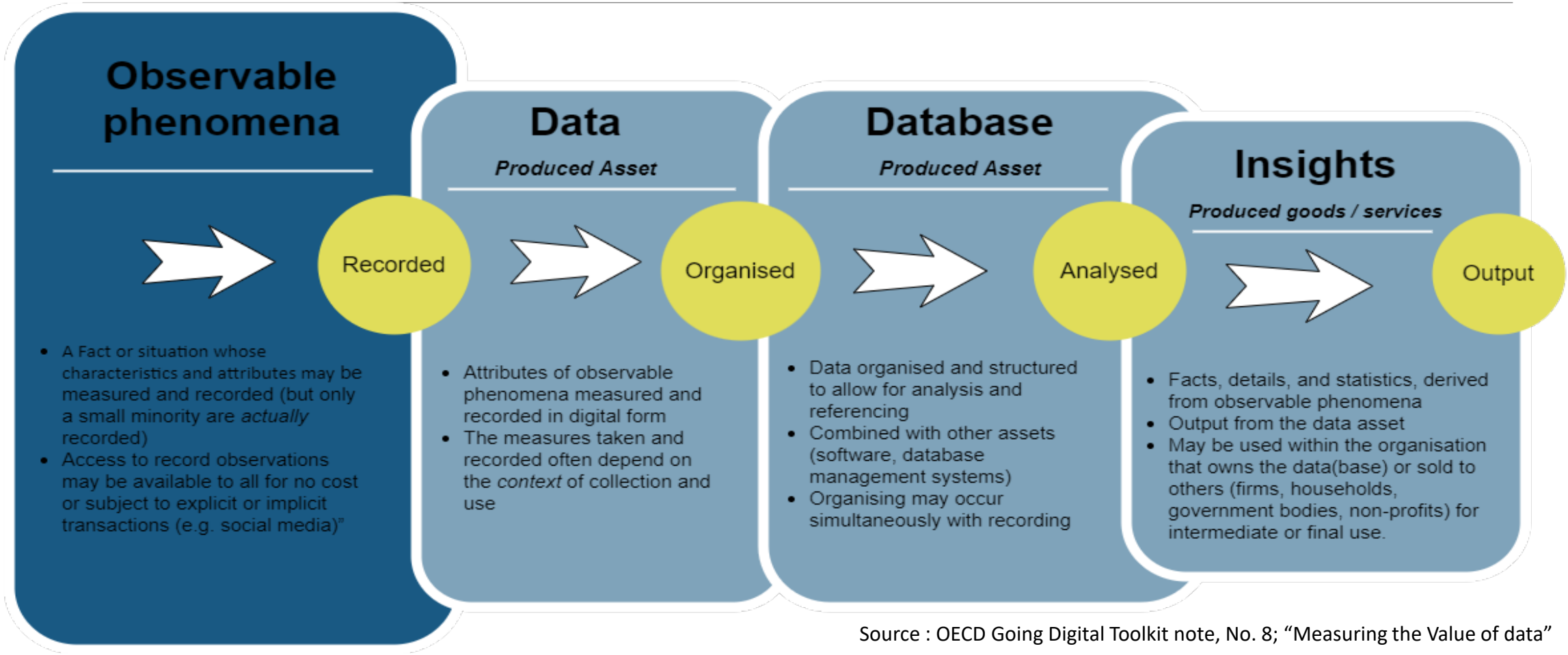
Not as romantic as "water" or "oil" but can be consistently applied.

*"Information content that is **produced** by accessing and observing phenomena; and recording, organizing and storing information elements from these phenomena in a **digital format**, which provide **an economic benefit** when used in productive activities".*

- Digital format only
- Needs to provide an economic benefit
- Is separate from the (often) non-produced phenomena (creation is an act of production)

Data information chain from an SNA perspective

As information about a fact or situation is recorded it becomes produced data



Source : OECD Going Digital Toolkit note, No. 8; "Measuring the Value of data"

Data vs other assets within the SNA.

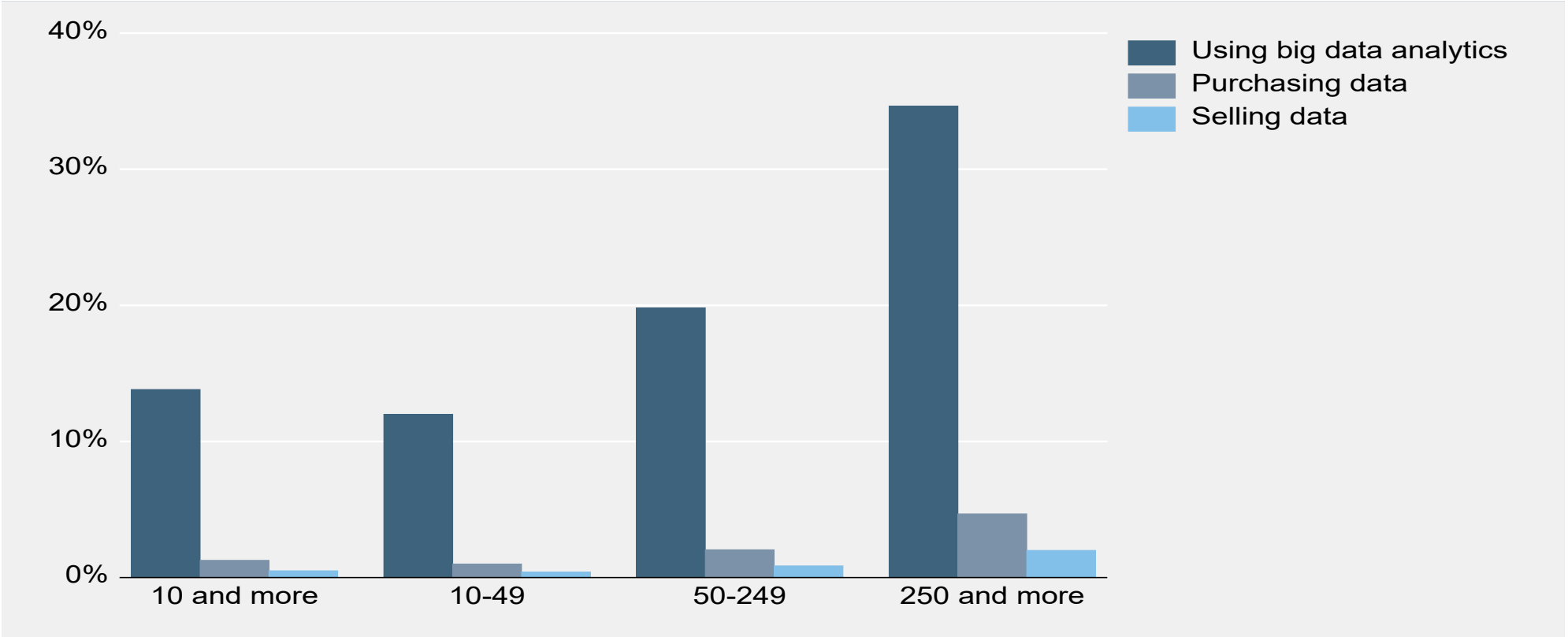
The unique characteristics of data create challenges for measurement.

- Most data is produced on **an own account basis**.
- Data **doesn't depreciate** in a conventional sense.
- Data is extraordinarily **heterogeneous**.
- **Quantity** often **unrelated to the value**.

Purchasing or selling big data is rare…

Even among large firms that conduct big data analytics

Average response, Europe, split by firm size (total number of employees), 2020



Source: Eurostat (2022), *ICT Usage in Enterprises*

How to value data assets in the SNA?

The SNA allows for different ways to determine the "exchanged value".

Market price	Net present value	Sum of cost
Data not sold in large enough quantities.	Limited information to formulate assumptions.	Similarities with other intangible assets in the SNA. Successfully tried by NSO's and academia.

Measurement via the sum of costs

The sum of cost approach is already heavily used in the SNA for non-market output.

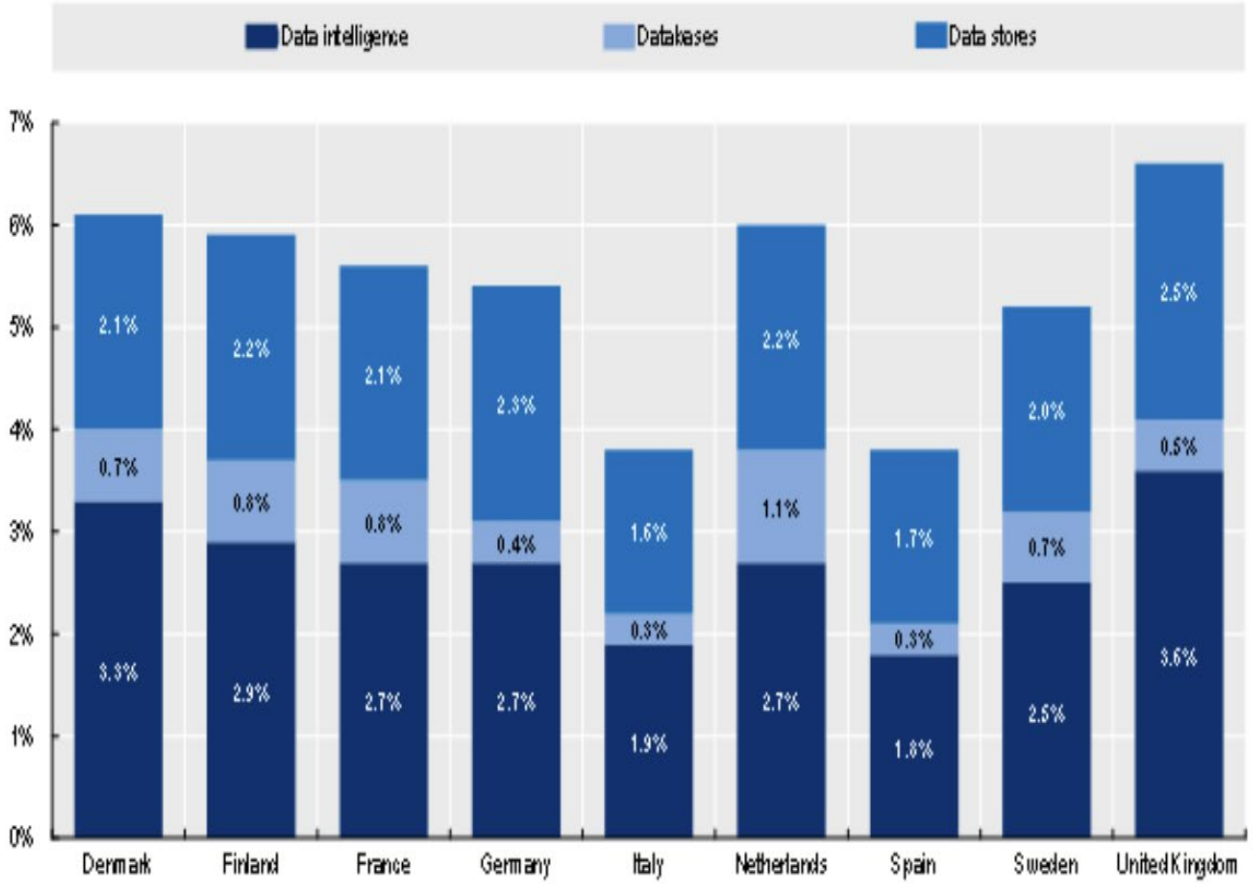
Estimated using **labour and other costs** involved in producing the good or service. For data assets, this would include,

- costs of planning, preparing, and developing a data production strategy
- costs associated with accessing, recording, and storing information embedded in OPs
- costs associated with processing, cleaning, and organising the data to allow for use in productive activities.

In addition, an estimate for **consumption of the fixed capital** used in the own account production of data and **a mark-up** for net operating surplus **for market producers** should be included.

Examples of Sum-of-cost application

Slight variations exist between each, but broadly they have been estimated in the same manner



Source: Corrado et al (2022)

Country	Year	Value of data asset, % of total GDP	PPT difference in total GDP growth for year	PPT difference in GCF for the year
Australia	2016	2.7%	0.016%	0.57%
Canada	2018	1.8%	-0.037%	-0.09%
Netherlands	2017	2.7%	-0.012%	-0.12%
India	2019	1.0%	0.000%	0.14%
USA	2020	0.8%	0.047%	0.26%

Source: ABS, Statistics Canada, Statistics Netherlands, ADB, BEA

The **beginning of the end** or just the **end of the beginning?**

Research & Development was included in the SNA for the first time in 2008.

"R&D should be recognized as part of capital formation. In order to achieve this, several issues have to be addressed. These include deriving measures of research and development, price indices and service lives. ***Specific guidelines****, together with* ***handbooks on methodology and practice****, will provide a useful way of working towards solutions that* ***give the appropriate level of confidence in the resulting measures****".*

(2008 SNA 10.104)

Research, testing, refinement, clarification will continue before and after data's inclusion in the 2025 SNA.

Economic value of data into the SNA

A conceptual framework is only half the journey.

- Existing work validates the possibility of data's inclusion in the SNA.
- Exclusion would have eroded the trust in, and relevance of the SNA and GDP.
- Preliminary results show that data will not "break" GDP.
- There is a need for clear definitions and guidance on compilation.
- A manual/handbook underway by the IMF/Eurostat.

This work on Data measurement is part of the OECD-wide **“Going Digital”** project.

Going Digital Toolkit Measurement Notes

Measuring the economic **value of data**, https://doi.org/10.1787/f46b3691-en

Making economics statistics visible in **Digital Supply-Use tables**, https://doi.org/10.1787/91cbdd10-en

Measuring **digital trade**, https://doi.org/10.1787/48e68967-en

Measuring **well-being** in the digital age, https://doi.org/10.1787/1891bb63-en

Explore the Toolkit

The Going Digital Toolkit includes indicators, policy guidance and related publications to help countries realise the promises of digital transformation.

www.oecd.org/going-digital-toolkit

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