



# Digitalisation task team Progress report

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*Group of Experts on National Accounts, 25-27 April 2023*

# Digitalization Task Team: 9 research topics



Recording of data in the national accounts



Free products (valuation of free assets and free services)



Artificial Intelligence



Digital intermediation platforms



Non-fungible tokens



Crypto assets



Cloud computing



Increasing the visibility of digitalization in NA (Digital SUTs)



Price and volume measurement of goods and services affected by digitalization

# Status and expected impact

- All GNs endorsed by the AEG (and BOPCOM), after incorporating feedback from global consultations
- Impact on central framework and main indicators:  
**Data as an asset, Crypto assets**
- Extensions:  
**Digital SUTs; Free products satellite account**
- Clarifications/additional details:  
**DIPs; Cloud computing; Artificial intelligence; NFTs; Price and volume measurement of products affected by digitalisation**



## Recording of Data in the National Accounts

### Selected recommendations

- Data as a new produced asset → impact on asset boundary
- Data is distinct from ‘observable phenomena’ (OP), which are ‘a fact or situation whose characteristics or attributes may be recorded’.  
OP are inputs for data
- Most data are produced on own-account and valued at sum of costs
- Explicit payments to access OP should be treated as rent.  
Including these in the SoC requires changing the SNA (separate discussion ongoing)

## Tests have produced some estimates!



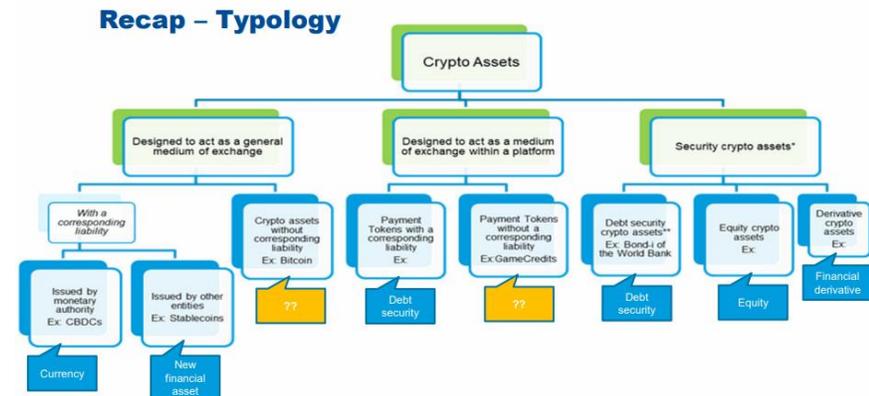
### Recording of data in the National Accounts (cont'd)

Country	Year	Value of data asset, % of total GDP	PPT difference in total GDP growth for year	PPT difference in total GCF growth for the year
Australia	2016	2.9%	0.016%	0.57%
Canada	2018	1.9%	-0.037%	-0.09%
Netherlands	2017	3.0%	-0.012%	-0.12%
India	2019	1.0%	0.000%	0.14%
USA	2020	0.8%	0.047%	0.26%

### However, guidance is needed

- Separation of expenditure on data compared with other assets (e.g. software and R&D)
- Separation of ancillary data
- Asset lives and retirement profiles used in creating capital stocks
- Price indices used for deflation
- ...

- Many typologies of crypto assets
- Treatment of most of them uncontroversial, except crypto assets without a corresponding liability (CAWL), like Bitcoins



# Bitcoin

## Crypto assets

Dilemma: **financial** or **non-financial**? Arguments exist in favour and against both options

AEG and BOPCOM decision after broad user and producer consultations: **non-financial non-produced assets** (to be recorded in the capital account)

This decision may be reconsidered if there are significant (market, regulatory and/or accounting) changes that justify a revision either before or after the release of the manuals in 2025

Given the evolving nature of crypto assets, this issue will remain on the SNA and BOPCOM research agendas

GN identifies three categories of **Non-Fungible Tokens** and makes recommendations for their classification in the SNA:



## Non-fungible tokens

1. NFTs that convey **no ownership rights** and only allow for personal use of another asset or product
  - ✓ Recorded as **consumption**; can transform into a valuable over time
2. NFTs that convey **limited ownership rights** beyond personal use for another asset or product
  - ✓ Recorded as **assets (contracts, licenses, or leases)** if the owner can derive economic benefits from these rights
3. NFTs that convey **full ownership rights** for another asset or product
  - ✓ Should **not** be **separately recorded** if the associated assets or products have already been counted



Free products  
(valuation of free  
assets and free  
services)

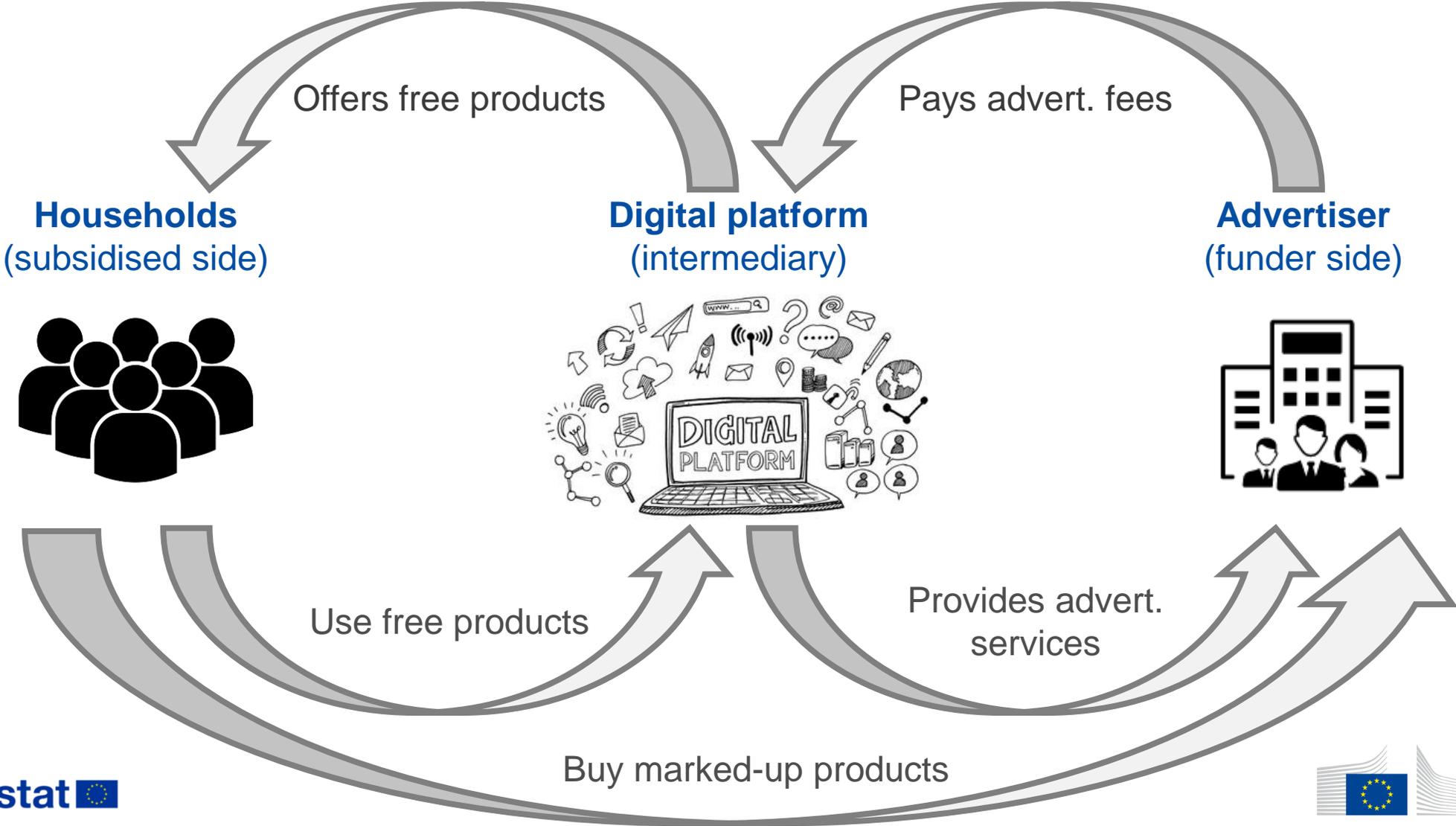
2 work streams:

- i) Clarifications in core accounts
- ii) Free products satellite account

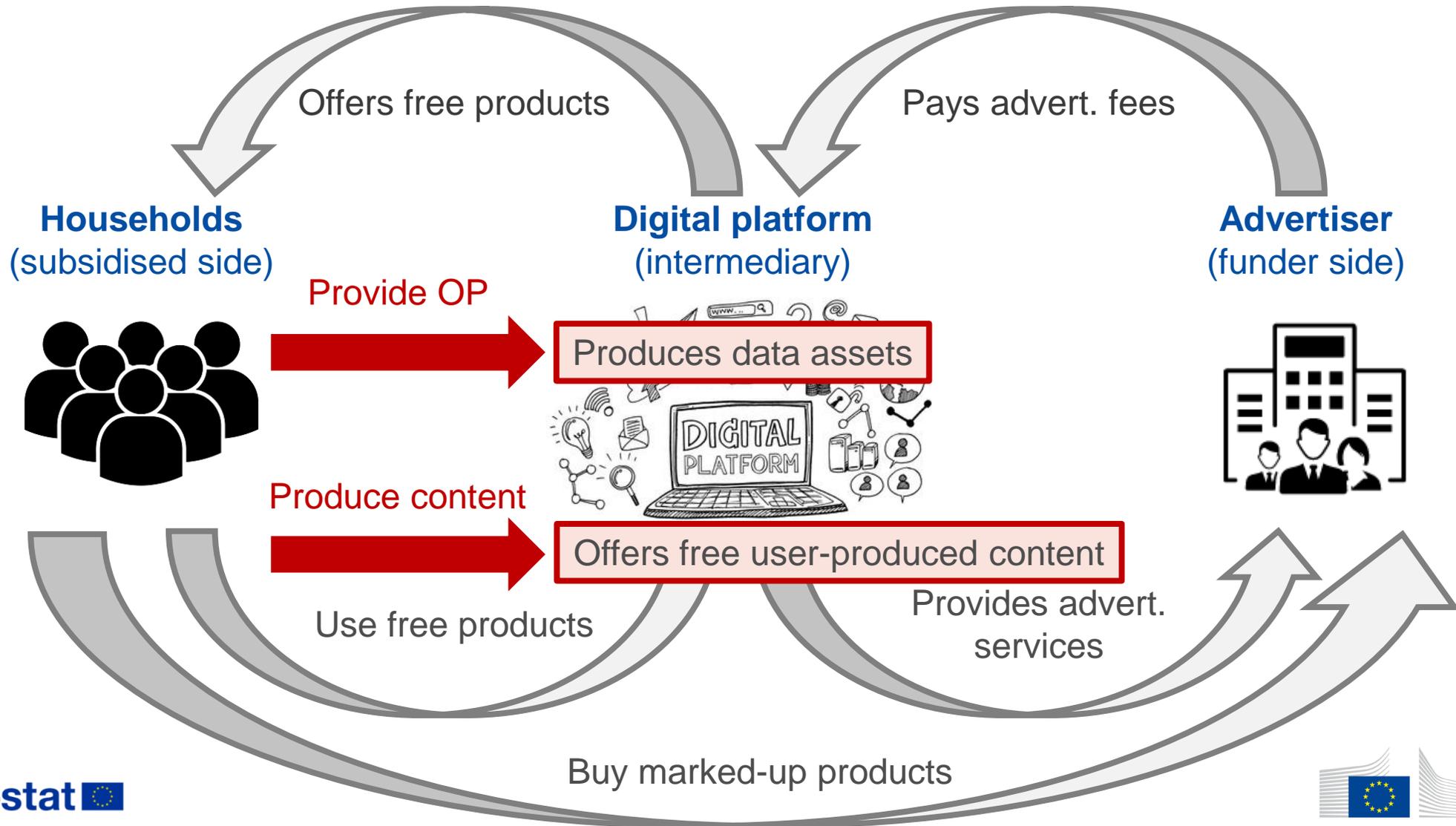
No changes to  
SNA central framework

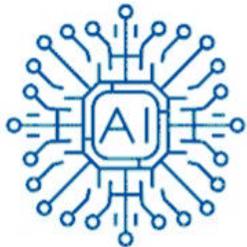
Link with **data**: digital platforms and digital apps offering free products are tools to access OP, which are input for the production of data assets and use data to offer their services

# Free products: GN on **current** SNA treatment



# Free products: GN on SNA satellite account

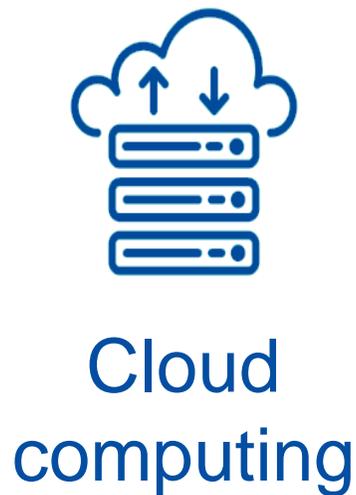




## Artificial Intelligence

### Recommendations

- Focus on visibility of AI in national accounts (already covered but not visible in 2008 SNA)
- The GN **defines AI** as “a computer program operating a system capable of recognition, reasoning, communication, and prediction emulating human recognition, reasoning, and communication.”
- AI is **produced** and falls within the SNA production and asset boundaries → **GN recommends to record it together with software**
- Strong link between **Data** and **AI**: cost of producing data sets to train AI should be included in the value of own-account AI or Data? → **GN recommends to keep them with Data**
- AI should be appropriately reflected in the activity (ISIC) and product (CPC) **classifications**, currently under review
- Final consideration: AI is part of IPP and should be included in IPP definition



This GN:

- Defines cloud computing as “*Cloud computing services consist of computing, data storage, software, and related IT services accessed remotely over a network, supplied on demand and with measured resource usage*”
- Discusses the economics of cloud computing
- Identifies the measurement issues
- Makes recommendations on
  - ✓ Measuring the **fixed capital assets** of cloud computing providers and customers, including long-term software licenses and financial leases
  - ✓ Measuring **international transactions** in cloud computing services and FDI
  - ✓ Measuring **prices and volumes** of cloud services

GN recommends adding further details to existing aggregates rather than creating new high-level classes of cloud computing assets and services



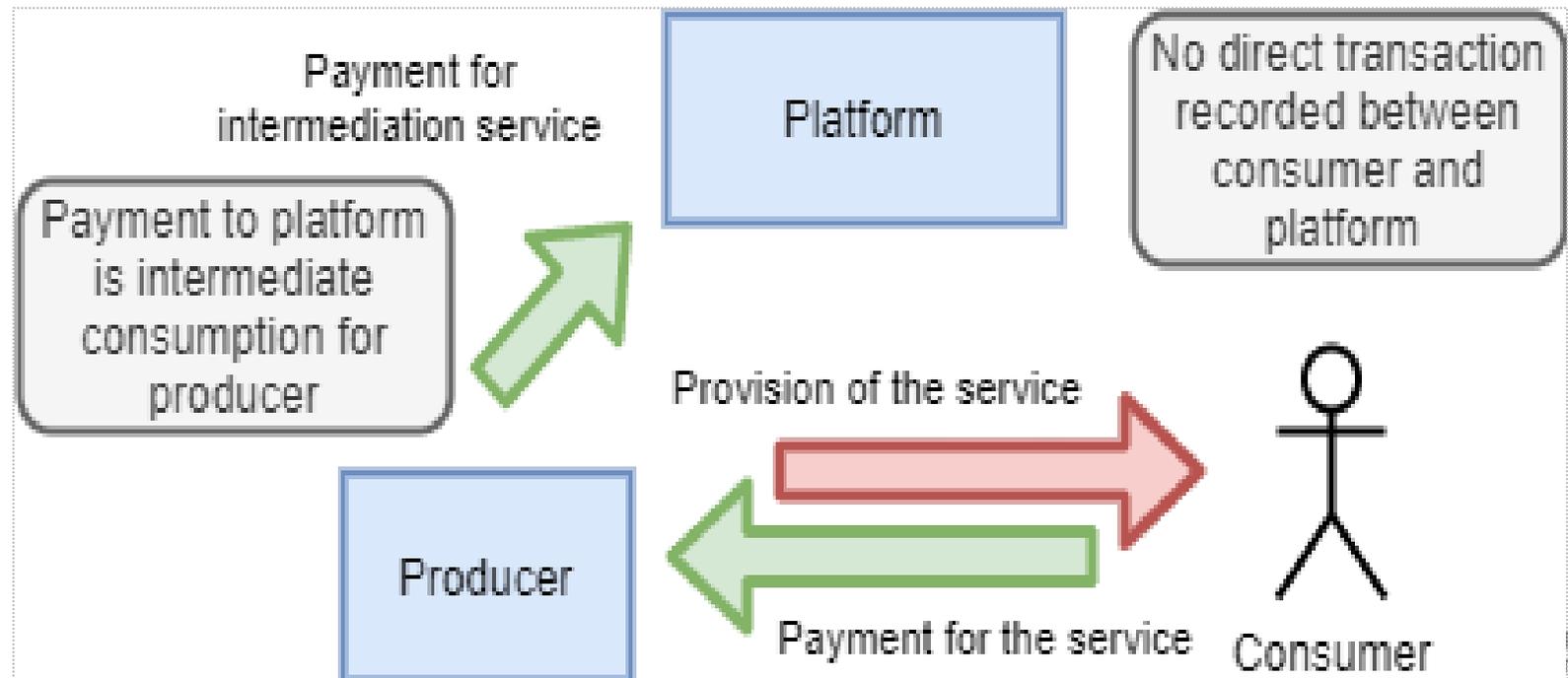
## Digital intermediation platforms

From the perspective of the SNA, a DIP meets the following criteria:

- **Charges an explicit fee** for digitally facilitating an economic transaction between two independent parties
- **Does not take economic ownership** of the goods and services ultimately sold to the consumer

Included: Airbnb, eBay, Alibaba, Booking, Uber. Excluded: Google, Facebook, YouTube, etc.

Recommended recording of DIPs' transactions on the **producer focused basis**:





## Increasing the visibility of digitalization in NA (Digital SUTs)

- DSUTs and priority indicators are key tools to **increase the visibility of digitalization in NA**
- DSUTs: an **extension** of the national accounts through supplementary tables. **Do not affect the ‘core’ accounts**

### Status

- Conceptual development of the DSUTs by the Task Team is finished and the GN has been **endorsed by the AEG**. Work is now on promoting its implementation
- Several countries have started working on the framework, targeting some **priority indicators**
  - **Output, Gross Value Added (GVA)** and its components, of **digital industries**
  - Intermediate consumption of **Digital Intermediary Services, Cloud Computing Services** and total ICT goods and digital services
  - Expenditures **split by nature of the transaction**, including estimates of **digital trade**



## Price and volume measurement of goods and services affected by digitalization

Traditional data sources need to be **updated more frequently** to capture rapid changes associated with digitalization. Otherwise,

- **Nominal spending** may not reflect the value of these goods in a timely fashion, and
- **Price and volume measures** may not adequately represent:
  - New versions of existing goods (quality improvements in cars),
  - New types of outlets (UBER, Airbnb),
  - Entirely new goods (cloud services)

This GN provides practical recommendations on conceptual and practical issues and is now finalized

# Recap and next steps

Conceptual work finalised. Implementation work being planned. 2 interlinked channels:

- ✓ Production of experimental estimates by interested Member States (with support from international organisations)
- ✓ Development of practical compilation guidance

Main topics identified for early implementation / development of practical guidance:

- ✓ Data as an asset
- ✓ Crypto Assets
- ✓ Artificial Intelligence
- ✓ Cloud computing
- ✓ Digital intermediation platforms
- ✓ “Free” Products in an SNA Satellite Account

Implementation work is well advanced on Digital SUTs under coordination of the OECD

# Thank you for your attention!

**The Digitalization Task Team includes** Andrew Baer (IMF), Allison Derrick (BEA), Andreas Dollt (Eurostat), Kevin Fox (UNSW), Ziad Ghanem (Stats Canada), Richard Heys (ONS), Stanimira Kosekova (ECB), Nicola Massarelli (Eurostat), John Mitchell (OECD), Marshall Reinsdorf (consultant), Jennifer Ribarsky (IMF), Sebastián Rébora (Central Bank of Chile), Carol Robbins (NSF), Benson Sim (UN), Michael Smedes (ABS), Erich Strassner (Chair, IMF), Clodhna Taylor (ONS), Jim Tebrake (IMF), John Verrinder (Eurostat) and Jorrit Zwijnenburg (OECD)

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Any omissions are accidental