# Task team on Digitalisation: overview of work on other topics

Nicola Massarelli, Eurostat, National Accounts methodology
on behalf of the Task Team

*Group of Experts on National Accounts, 18 May 2021*

# Digitalization Task Team: research topics

Increasing the visibility of digitalization in NA (Digital SUTs)
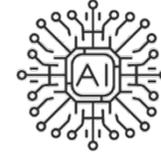
Recording of data in the national accounts

Artificial Intelligence

Price and volume measurement of goods and services affected by digitalization

Valuation of free assets and free services

Cloud computing

Crypto assets

Digital intermediary platforms

'Old' topics

'New' topics

Eurostat

European Commission

2

# Many different types of crypto assets

**Crypto currencies** (intended as general medium of exchange)

- Traditional cryptocurrencies (not backed by an asset)

- **Stablecoins** (backed by asset or seignorage-based)

**Crypto tokens**

- **Asset** tokens (represent debt or equity claim on the issuer)

- **Payment** tokens (used as medium of exchange within a platform)

- **Utility** tokens (provide holders future access to goods or services)

- Hybrid tokens (combining aspects of other tokens)

A lot of different **terminology, classifications and definitions** are used

**New crypto assets** may easily emerge

European Commission

# Guidance on recording of crypto assets – state of play

Broad agreement for most types, except for **cryptocurrencies without corresponding liability**

- How to account for their **creation**?
  *(result of "mining" activities vs "appearance" like fiat currency)*

- Recording: **financial assets** vs **valuables**

- What is the **output of miners**? *(Cryptocurrencies vs validation services)*

- How should their output be **valued**?

- Who is **consuming** the relevant output?

# Artificial intelligence (AI)

Expected to have a relevant impact on the economy

There is no common definition, but one common element is emerging:

> *"AI reflects a machine's ability to respond in a fashion consistent with human reactions"*

Questions for macroeconomics accountants:

- Do AI activity and its output fit within the current production and asset boundaries?

- What is the nature of the product and how is it valued and recorded?

- Do current classifications and set of accounts properly present the AI activities to users?

European Commission

# AI and National Accounts – initial reflections

- AI is produced

- AI falls within the production and asset boundaries

- AI is not "visible" in the accounts (e.g. it is currently not distinguished from software, hardware)

- It could be argued that AI is factor of production unique from either capital or labor (or that it combines elements of both)

- There is a strong link between Data and AI

# Conceptual Framework for Measurement of the Digital Economy
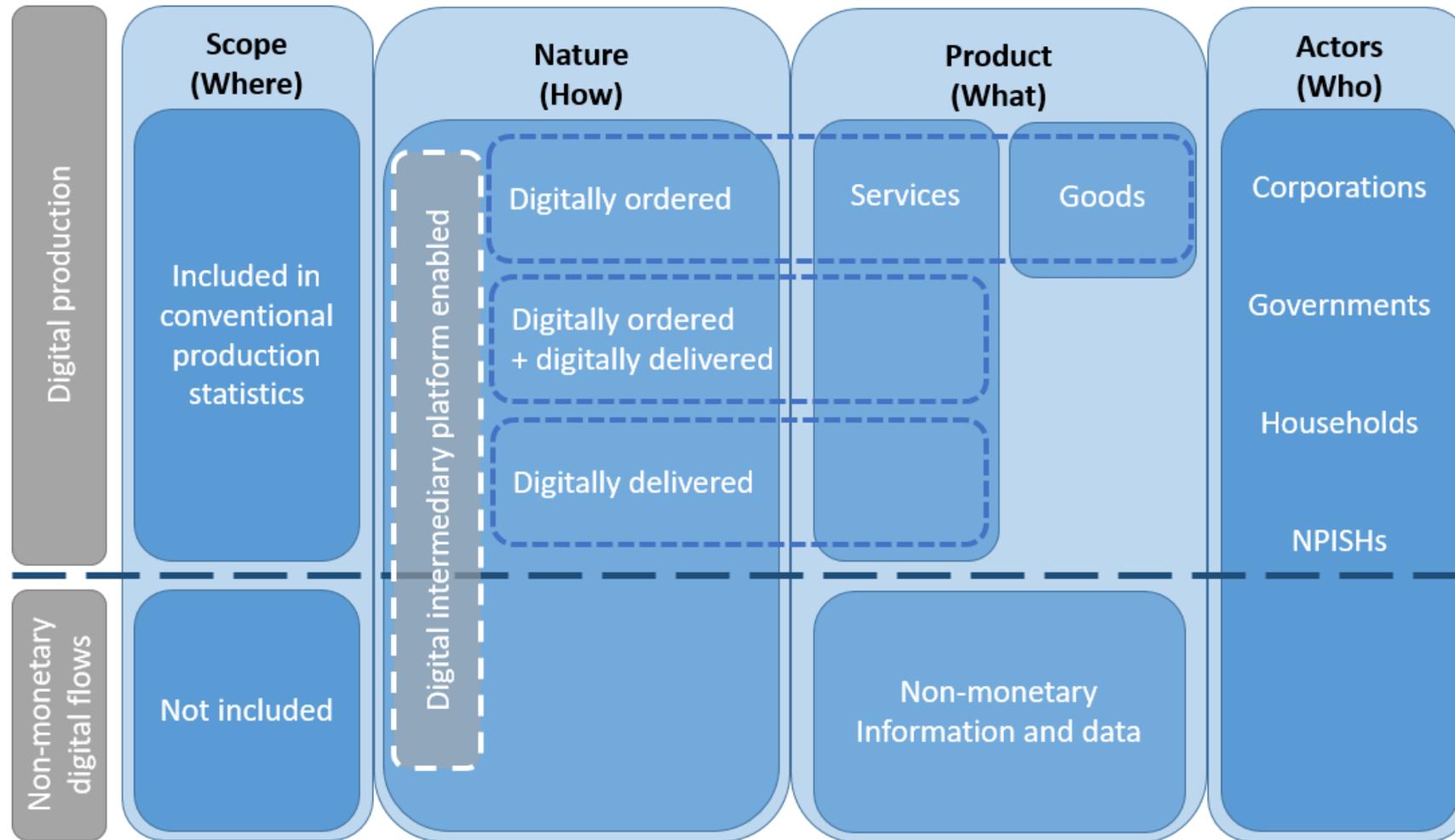


Source: OECD, adapted from OECD-WTO-IMF (2019).

European Commission

7

Eurostat

# Overall ambition and current situation

- Digital SUTs will help to **provide momentum** for all countries in fostering the compilation of **internationally comparable data** on the digital economy

- The Digital SUTs are partly designed to **act as road maps** that help to motivate **the development of new data sources**

- **Fully populating the framework is very challenging.** Even partially completed tables will significantly help to fill the current information gaps

- Several countries have started working on the framework, targeting some **priority indicators**

  1. **Output, Gross Value Added** (**GVA**) and its components, of **digital industries**

  2. Intermediate consumption of **Digital Intermediary Services**, **Cloud Computing Services** and total ICT goods and digital services

  3. Expenditures **split by nature of the transaction,** including estimates of **digital trade**

European Commission

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

Traditional data sources need to be **updated more frequently** to capture rapid changes associated with digitalisation. 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)

European Commission

# Guidance note on price and volume measurement of goods and services affected by digitalization

Draft GN structured in 5 chapters:

**Chapter 1**: Introduces Challenges for National Accountants

**Chapter 2**: Measuring the value of output in current prices

**Chapter 3**: Prices and volumes for **existing** goods and services
*(Computing machinery, telephones for cellular networks, Packaged software, Telecommunications)*

**Chapter 4**: Prices and volumes for **new** goods and services
*(digital intermediaries, cloud computing)*

**Chapter 5**: Methods to address fast-pace price change for evolving products

Practical recommendations on conceptual and practical issues

# Price and volume measurement of goods and services affected by digitalization: open issues

- Treatment of **telecommunication services**

- Treatment of **rooms** rented out **in** an otherwise **owner-occupied dwelling** through Airbnb

- Use of **hedonic models** for **cloud computing** services

European Commission

**Credits**

Slides 3-4: Jorrit Zwijnenburg (OECD)

Slides 5-6: Jim Tebrake (IMF)

Slides 7-8: John Mitchell (OECD)

Slides 9-11: Richard Heys (ONS) and Erich Strassner (BEA)

**The Digitalization Task Team includes** Andreas Dollt (Eurostat), Kevin Fox (UNSW), Ziad Ghanem (Stats Canada), Richard Heys (ONS), Stanimira Kosekova (ECB), Nicola Massarelli (Eurostat), John Mitchell (OECD), Dylan Rassier (BEA), Marshall Reinsdorf, Jennifer Ribarsky (IMF), Sebastián Rébora (Central Bank of Chile), Carol Robbins (NSF), Benson Sim (UN), Michael Smedes (ABS), Sri Soelistyowati (Statistics Indonesia), Teck-Wong Soon (Statistics Department Singapore), Erich Strassner (BEA), and Jorrit Zwijnenburg (OECD). Any omissions are accidental.

European Commission