RECENT ACTIVITIES AND FUTURE PLANS OF EUROSTAT ON MEASURING DIGITAL TRANSFORMATION AND DIGITAL ECONOMY

Prepared by Eurostat

This note presents recent activities and future plans of Eurostat on measuring digital transformation and digital economy.

The note is prepared to provide input to the CES Bureau discussion on better measurement of digital transformation.

I.   INTRODUCTION

1.   Digitalisation has had a deep and varied effect on how businesses and societies are operating today. Digitalisation is also high on the agenda of the European Statistical System (ESS) and of Eurostat in particular. For the statistics, there are a variety of methodological issues to be considered and priorities to be defined for providing data for a number of EU digital initiatives. This paper presents in a non-exhaustive manner the activities of Eurostat in this area.

II.   COLLABORATIVE ECONOMY

2.   The collaborative economy as a way of offering and using products and services through online platforms that connect consumers and producers is one of the ESS interest areas. With Eurostat leading, ESS is making advances in the area of the collaborative economy, starting with short-stay accommodation followed by transport and other services (platform work). Eurostat - jointly with other Commission services - started negotiating with major international platforms in autumn 2018 to obtain their data for statistical use. This initiative aims at gathering data to measure the size and impact of the collaborative economy directly from international platforms. In this way, the data would provide an important contribution to the quality of the existing official statistics by reinforcing the coverage in areas that are not reachable by traditional sources (e.g. households acting as producers) and also by providing entirely new data in related socio-economic areas.

III.   NEW DIGITAL DATA SOURCES

3.   Beyond the collaborative economy, new digital data sources can vary widely: transaction data from mobile telecom operators, sensor data from personal communication devices or from smart electricity consumption meters, road traffic loops, data obtained from the internet, such as social media or web-scraped data from job vacancy or real estate agencies' websites, scanner data, electronic reservation systems data, electronic data on

credit card transactions, etc. These data are to a large extent generated automatically by the machines and held by private actors.

4. As with the collaborative economy, the use of new data sources on a large scale in a sustainable perspective requires clearer rules for statistical offices to access data of general interest held by private actors, to help open up the data sources and create a thriving environment for brand new statistical products and services. Through direct access to these data sources, significant progress in terms of evidence-based policy making as regards the scope, timeliness and accuracy of official statistics, will be made possible while lowering the existing burden on respondents.

5. Also, Eurostat itself is considering creating new digital data sources directly for statistical use. A project is under consideration for establishing a smart surveys platform for the development of capabilities for conducting smart surveys and moving towards citizen statistics. The initial focus will be on launching trusted smart surveys, by using Apps and collecting in a participatory manner information on the budget and time use of households (diary-based survey).

6. The intended outcomes are to make available, and operational, the capabilities for producing and processing statistical information from statistical processes that would use trusted smart surveys. They comprise: a European platform, providing the functional and technical environment for implementing a set of common functions and configurable services that can be used within the ESS to build particular instances of trusted smart surveys, for specific application domains and/or target areas; innovative solutions for processing the input personal data in a privacy-preserving fashion (e.g. secure multi-party computation or non-modifiable transaction logging); an incentives library and templates for the promotion of citizen engagement and participation (e.g. gamification, personalised feedback) providing building blocks for moving towards citizen statistics.

7. Preparatory work has already started in 2019, with over two years preparatory work for the smart survey platform, aiming at the evaluation of existing tools, development of solutions for privacy-preserving data processing, the promotion of citizen participation and a reference architecture.

IV. DIGITALISATION ON THE AGENDA OF THE INTER-SECRETARIAT WORKING GROUP ON NATIONAL ACCOUNTS

8. As chair of the Inter-secretariat Working Group on National Accounts (ISWGNA), Eurostat describes below the current stage of activities of the group.

9. The rapid expansion of the digital economy, together with the globalisation of economic activities, poses specific challenges regarding their treatment in the national accounts. The fast quality improvements and product innovations observed in recent years are mainly driven by technological progress. This results in increased efficiency in computers, cell phones, and the Internet; new goods and services (e.g. social media or digital platforms), some of them "free" for users; innovations in financial markets and new methods of payment (e.g. crypto assets); and reductions in costs and improvements in quality associated with the use of technology.

10. Measuring the size and observing the different features of the digital economy is therefore of crucial importance to understand and analyse economic developments. National

accounts experts at national and global level are tackling the challenge to develop a sound theoretical framework and the related statistical measurement tools for the digital economy.

11.   In March 2018, the UN Statistical Commission indicated digitalisation as one of the three priority areas for the research agenda on the System of National Accounts (SNA), the other two being globalization and wellbeing and sustainability. In November 2018, for each priority area the Advisory Expert Group on national accounts (AEG) established a list of specific issues to prioritise according to their relevance, urgency and potential impact on the current system of national accounts, the SNA 2008. For digitalisation, the list includes:

(a)   Framework for a satellite account on the digital economy;

(b)   Valuation of free assets and free services;

(c)   Recording of data in the national accounts;

(d)   Crypto assets;

(e)   Price and volume measurement of goods and services affected by digitalisation.

12.   To advance the work on the three priority areas, ISWGNA has established three subgroups, co-chaired by AEG members supported by one international organisation ensuring the secretariat. For the digitalisation subgroups, the co-chairs are BEA and Statistics Indonesia, with Eurostat ensuring the secretariat. Overall 15 experts are involved in the subgroup, from national statistical institutes, international organisations, central banks and academy. Eurostat carries out substantive research work on digitalisation mainly in the context of the digitalisation subgroup (in addition to the secretarial tasks).

13.   The subgroup is expected to develop guidance notes on each of the five topics above in the course of 2020. The guidance notes will provide a review of the options to deal with the different issues, to indicate their potential impact on SNA (i.e. if they would require a change to the 'fundamental principles', if they provide a clarification of the current system or if they would result in additional tables/satellite accounts), and to recommend the way forward.

14.   Research work on some of the topics is well advanced, while on other topics is still at a less developed stage.

15.   Extensive work has already been done to conceptually define a framework for a satellite account on the digital economy, in particular by the Informal Advisory Group on measuring GDP in a digitalised economy, chaired by BEA, coordinated by OECD and in which Eurostat participates. The subgroup on digitalisation is now building on that work. The next steps mainly concern the definition of key indicators on the digital economy and finding ways to support countries in populating the framework.

16.   Extensive research has also been carried out on crypto assets, especially by IMF and OECD. Concrete proposals for the definition, classification and recording of crypto assets of different nature have already been made and are being submitted to AEG for written consultation.

17.   Considerable work has also been carried out on price and volume measurement of goods and services affected by digitalization. The measurement of prices impacts on the

measurement of the real growth of GDP and other macroeconomic measures, which then raises questions on productivity. Initial investigation seems to show that the overall potential impact on GDP growth may be relatively small, and certainly not large enough to explain the 'productivity puzzle' – i.e. a decreasing or slowly rising productivity in a context of fast technological development. In this area, both Eurostat and OECD have been working with countries to identify 'outlier countries' in the evolution of price indices and to investigate the sources and methods being used.

18.   Research on the valuation of free assets and free services (e.g. Facebook, Google Search or Gmail) is less advanced. Many of those services are undoubtedly bringing utility to households and many households would pay for them if they weren't free (as some interesting research shows). As a consequence, national accounts should show higher household consumption for this benefit. However, the lack of monetary transactions makes it challenging to estimate the appropriate value of those services. In principle, they are offered in exchange of household data or adverts views, the value of which is also difficult to estimate. The subgroup is currently identifying possible options to deal with these issues.

19.   Research on the recording of data in national accounts is also at an initial state. Some preliminary work so far has been done in particular by OECD and Statistics Canada. As we saw for free digital services, data has become a highly valuable commodity in the world today. However, at the moment only the software in databases is considered an asset in national accounts. The important question is if we should capitalise data and consider that it is used in the production process in the same way as a tangible or intangible asset. This raises two tough issues - deciding the boundary of data to be capitalised and how to value data when it is internal to a company.

20.   The progress on the work and view to the future steps on revision of the national accounts should be presented to the 2020 UNSC.

V.   MONITORING DIGITAL TRANSFORMATION

21.   Eurostat continues developing, producing and publishing sets of indicators and providing assistance and advice to the other services of the EU Commission that are in charge of publishing indicators and scoreboards on digital transformation. Data are needed first for further orientation and later for monitoring EU policy initiatives in the digital area, varying from working conditions, ethics of artificial intelligence and consumer protection to innovations, competitiveness and fair digital taxation.

22.   Eurostat participates in the shaping of the future Digital Economy and Society Index within the EU Commission. This will ensure that the existing surveys will evolve in such a way that, in combination with new digital data sources and techniques, they will allow for providing up to date relevant data on the digital transformation of the EU economy and society. In addition, the EU Commission will be equipped with a strong evidence base to monitor the achievements of its political priorities related to the implementation of the Connected Digital Single Market.

23.   The existing and new dimensions such as digital connectivity, e-commerce, e-services, e-government, robotics, cloud computing, big data analysis, cybersecurity and digital skills will be covered. Data on the use of artificial intelligence in the business sector, which represents a top priority of the EU regarding innovation and competitiveness, will provide information on the progress made in this area. In addition, linking the existing

business statistics at micro-level could provide additional insight into the economic and social impact of digital technologies.

24.   There is also a high interest in new forms of work, as jobs of good quality allow for decent living conditions and are therefore central to EU policy making. Digitalisation has brought two kinds of new forms of work: platform jobs, where new ICT developments are an important driving force and the jobs are particularly flexible; and specific contracts with zero-hours. In both cases, an important question is the extent of the social protection coverage for the people exercising these new forms of work.

25.   Furthermore, it will be important for any new EU skills agenda for the digital economy and society to be underpinned by robust and agile official statistics, notably when setting benchmarks or monitoring progress. An updated Digital Education Action Plan will focus on digital literacy and on equipping young people and adults with the skills they need for life and work in the digital age.