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### **Digital Economy: Problems and Prospects of Accounting and Measurement in the System of National Accounts**

In modern international statistics the digital economy (DE) is an object with uncertain boundaries and structure. The main problems of measuring its scales are:

- dominance of ratings and index constructions;
- inconsistency of estimates with the conceptual frameworks for defining production boundaries and calculations of basic macroeconomic indicators of the System of national accounts (SNA);
- priority of production estimates;
- non-comparability of the developed estimates;
- chaotic character of the DE statistics developed for various objects considered as equivalents of the digital economy - digital industry, information society, innovation statistics, etc.

The result are limited opportunities of using the developed estimates for the purposes of strategic planning and macroeconomic processes management, analysis and forecasting of development of the digital economy and its industries, international comparisons, etc.

Prospects for the development of DE statistics are related with the development of its scales estimates, consistent with the basic macroeconomic indicators. The priority of the development of relevant areas of research is determined, among other things, by the need to explain the phenomena recorded in international statistics, connected with the slowdown in economic growth and labor productivity growth in economically developed countries, the paradoxes observed in the analysis and international comparisons of the levels and dynamics of socio-economic indicators of countries related to different groups, etc.

In international statistics the prospects for DE measurements are associated with the inclusion of the digital economy as an object of accounting in the SNA. The SNA methodology in its modern version allows for inclusion in the sphere of macroeconomic accounting the following set of operations, related to the functioning of the DE objects:

- DE sector production;
- formation and distribution of income, generated in the DE sector;
- accumulation of fixed capital in the DE sector.

In addition, the correct definition of the DE boundaries within the existing SNA version provides formalization the basic relations of the digital economy with other subjects of economic turnover.

The SNA methodology, being an open and developing system, can theoretically be the basis for accounting of economic transactions, related to the functioning of the digital economy and its structural elements.

The 2008 SNA methodology does not directly refer to the digital economy as an integrated object of macroeconomic accounting. This situation is explained by the lack of systematic understanding of the digital economy, its composition and interrelations of the DE elements with other objects and processes taken into account in the SNA. It also specifies the reasons of existing limitations in the DE macroeconomic accounting, which can only be applied to its elements, defined in the system of SNA classifiers, allowing for structuring the relevant segment of the economy by the groups of institutional units engaged in this segment, types of economic activities, types of produced goods and services etc. The lack of system of indicators, related to the digital economy and digital activities, leads in official statistics to biased estimates in DE measurements.

In this regard, further development of statistical classifications and their detailization for differentiation of digital activities and goods and services, associated with DE, is required. The developments, connected with construction of an adequate system of price statistics for different digital economy segments, are another priority for further development of DE accounting methodology in the SNA. Specific areas of work in this field include the development of methodology for the construction of consumer price indices for the DE sector products. In this part the international statistics orients the national statistical services, first of all, to obtain more complete information on such products, related to DE, as video content, music, video games, etc., access of potential users (primarily households) to which is currently carried out mainly on digital basis. In solving this problem international statistics has been focused on both using of new sources of primary information, including network information resources, and the improvement of traditional data collection systems, including data from budget household surveys, marketing research data, etc.

One of the actual problems in the field of macroeconomic accounting of DE elements is associated with incorrect estimates of digital assets, which, in turn, lead to an underestimation of impact of the digital economy on the dynamics of key macroeconomic indicators, including labor productivity. The necessity of additional measurements of digital assets, clarification of their types, recognized as assets in the SNA definition, is justified.

Special problem in DE elements accounting in the SNA is the development of methodology for measuring the scales of production within the segments that support its development. In national statistics its solution is associated with fundamental changes in the system of primary observation in the field of information and communication technologies (ICT). In particular, such changes relate to the clarification for the scope of surveys of commercial resident institutional units, engaged in the ICT sector.

In the longer term improving the quality of the initial information base for the DE analysis is associated with the formation of satellite accounts, as well as with the development of methodological approaches and specific schemes to assess its direct and indirect impact on key SNA indicators, such as gross output, value added, national income, etc.