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## Report of the Partnership on Measuring Information and Communication Technology for Development

### Note by the Secretary-General

In accordance with Economic and Social Council decision 2017/228 and past practice, the Secretary-General has the honour to transmit to the Statistical Commission the report of the Partnership on Measuring Information and Communication Technology for Development. In the report, the Partnership presents an overview of the work undertaken by the Partnership since the forty-seventh session of the Commission, in 2016, including updates to the core list of information and communications technology (ICT) indicators and information relating to recent developments in measuring the digital economy (such as e-commerce and international trade in ICT-enabled services) and measuring electronic waste. The Partnership also presents a proposal for preparing a thematic list of ICT indicators for monitoring progress towards the implementation of the 2030 Agenda for Sustainable Development and, in this context, highlights challenges for national statistical offices in producing ICT statistics, including in relation to capacity-building.

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\* [E/CN.3/2018/1](#).



## I. Introduction

1. The Partnership on Measuring Information and Communication Technology for Development was launched in 2004 to improve the availability of internationally comparable information and communications technology (ICT) statistics.<sup>2</sup> Since then, ICT statistics have been a regular item on the agenda of the Statistical Commission, and the Partnership has reported on progress in its work in 2005, 2007, 2009, 2010, 2012, 2014 and 2016 (see [E/CN.3/2005/23](#), [E/CN.3/2007/5](#), [E/CN.3/2009/19](#), [E/CN.3/2010/28](#), [E/CN.3/2012/12](#), [E/CN.3/2014/8](#) and [E/CN.3/2016/13](#)).

2. The Commission considered the topic of ICT statistics as an item for discussion at its thirty-eighth session, in 2007; forty-third session, in 2012; forty-fifth session, in 2014; and forty-seventh session, in 2016. At its forty-seventh session, the Commission acknowledged the role of ICT as an enabler for the achievement of the Sustainable Development Goals and the ICT sector as a major provider of big data, and recommended that the Partnership develop guidance to improve cooperation with different stakeholders for the purposes of producing high-quality and timely ICT statistics and leveraging the potential benefits of using big data for official statistics (see [E/2016/24-E/CN.3/2016/34](#)). It also requested that the Partnership report back to the Commission in 2018 with a review of the status of official ICT statistics and their integration into the monitoring framework of the 2030 Agenda for Sustainable Development. In this context, the Commission recommended that efforts be increased to strengthen the capacity of national statistical systems to produce ICT statistics.

3. The present report provides an overview of work done by the Partnership since its previous report to the Statistical Commission, in 2016, in particular with respect to the monitoring of progress towards achieving the Sustainable Development Goals.

## II. Recent progress in information and communications technology measurement

### Core list of information and communications technology indicators, definitions and statistical standards

4. One of the main achievements of the Partnership has been the establishment of a core list of ICT indicators, which was endorsed by the Commission at its thirty-eighth session, in 2007, and revisions to which were presented at its forty-third, forty-fifth and forty-seventh sessions (see [E/CN.3/2007/5](#), [E/CN.3/2012/12](#), [E/CN.3/2014/8](#) and [E/CN.3/2016/34](#)). The core list, which has served as the basis for the collection of internationally comparable ICT statistics worldwide, covers the following areas: ICT infrastructure and access; access and use of ICT by households and individuals; use of ICT by businesses; the ICT sector; trade in ICT goods and services; ICT in

<sup>2</sup> As of November 2017, the following entities were members of the Partnership on Measuring Information and Communications Technology for Development: the International Telecommunication Union; the Organization for Economic Cooperation and Development; the United Nations Conference on Trade and Development; the Institute for Statistics of the United Nations Educational, Scientific and Cultural Organization; the Economic Commission for Latin America and the Caribbean; the Economic and Social Commission for Western Asia; the Economic and Social Commission for Asia and the Pacific; the Economic Commission for Africa; the Department of Economic and Social Affairs of the United Nations Secretariat; the Statistical Office of the European Union; the United Nations Environment Programme; the secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the Sustainable Cycles Programme of the Vice-Rectorate in Europe of the United Nations University; the World Bank; and the International Labour Organization.

education; e-government; and electronic waste.<sup>3</sup> The main purpose of the list is to help countries that collect or are planning to collect ICT statistics to produce high-quality and internationally comparable data. To that end, the indicators have associated statistical standards and metadata.

5. Within the Partnership, the International Telecommunication Union (ITU) is responsible for collecting, harmonizing and disseminating the core ICT access and ICT household indicators and is regularly reviewing the definition of the indicators to ensure that it remains relevant to the rapid evolution of ICT. The Expert Group on Telecommunication/ICT Indicators, which includes 815 members, and the Expert Group on ICT Household Indicators, which includes 554 members, work through online discussion forums and report the outcome of their work to the World Telecommunication/ICT Indicators Symposium. The most recent outcomes of the work of the Expert Group on ICT Household Indicators were presented at the seventeenth World Telecommunication/ICT Indicators Symposium, held in Hammamet, Tunisia, in November 2017, including new indicators on e-commerce (see annex) and the inclusion of smartphones as a new subcategory of the following indicators:

- HH3: proportion of households with a telephone
- HH10: proportion of individuals using a mobile cellular telephone
- HH18: proportion of individuals who own a mobile phone

These indicators will be included in the Manual for Measuring ICT Access and Use by Households and Individuals.

6. In 2016, the Partnership task group on measuring ICT services and ICT-enabled services proposed that four indicators on imports and exports of such services be added to the core list of indicators (see [E/CN.3/2016/13](#)). Building on that work in 2017, the United Nations Conference on Trade and Development (UNCTAD) provided technical assistance for the launching of pilot enterprise surveys on exports of ICT-enabled services in Costa Rica, India and Thailand. The surveys have been implemented by national statistical agencies in collaboration with the private sector. The project aims at enhancing the capacity of national agencies to produce official statistics on international trade in ICT-enabled services. A first set of preliminary results was presented at an expert meeting in November 2017, and lessons learned from the first round of implementation are being taken into account for revising the model survey questionnaire and methodological guidelines. A report containing the main findings will be prepared by UNCTAD in 2018. Other countries have expressed an interest in conducting similar surveys.<sup>4</sup>

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<sup>3</sup> See [www.itu.int/en/ITU-D/Statistics/Documents/coreindicators/Core-List-of-Indicators\\_March2016.pdf](http://www.itu.int/en/ITU-D/Statistics/Documents/coreindicators/Core-List-of-Indicators_March2016.pdf).

<sup>4</sup> In relation to the new household indicators on e-commerce and the work to measure international trade in ICT-enabled services, there has been increased interest by countries in measuring cross-border e-commerce. UNCTAD is collaborating with organizations outside the Partnership to find ways to collect that data, including through enterprise surveys (see [http://unctad.org/en/PublicationsLibrary/tn\\_unctad\\_ict4d06\\_en.pdf](http://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d06_en.pdf)).

### III. Information and communications technology statistics to measure progress towards the goals of the 2030 Agenda

7. At its forty-eighth session, held in March 2017, the Statistical Commission, agreed upon the global framework of indicators for the Sustainable Development Goals that had been developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators in March 2016. Of the 232 indicators included in the framework, only 7 ICT indicators have been included. Nevertheless, ICTs have been recognized as a key development enabler, and their role in achieving the Goals has also been stressed by the ICT community, including at the World Summit on the Information Society and by the Commission on Science and Technology for Development and the United Nations Group on the Information Society. It is therefore important that all areas in which ICTs will play a role are measured and monitored.

8. With this in mind, the Partnership established a task group on ICT for the Sustainable Development Goals that aims to propose a thematic list of ICT indicators that could be used to measure ICT availability and its use in sectors relevant to the Goals that are not covered in the global framework of indicators. The list might include indicators on skills, e-commerce, financial inclusion, e-government and e-waste. The task group will aim to further improve the availability of disaggregated data relating to the indicators that will be defined in the thematic list and the ICT indicators that are included in the Goal measurement framework. The task group is open to all members of the Partnership and other interested agencies and stakeholders.

9. The task group, initiated in January 2017, was launched in June 2017 on the occasion of the World Summit on the Information Society Forum, held in Geneva during the thematic session organized by the Partnership. The task group will work from 2017 to 2020 and can be extended until 2030 to address the evolution of the overall discussion of the Sustainable Development Goals.

10. In May 2017, the Partnership provided an input to the 2017 high-level political forum on sustainable development regarding the indicators to measure the contribution of ICTs to sustainable development that should be considered in addition to the indicators in the Sustainable Development Goal monitoring framework.<sup>5</sup> In total, the Partnership has identified 30 targets that would benefit from additional indicators on the impact of ICT in progress towards sustainable development. The high-level political forum recognized that the lack of official statistics, data and effective monitoring systems remain a significant challenge to measuring progress, in particular at the level of the Sustainable Development Goal targets.<sup>6</sup>

11. In addition, a specific contribution to Goal 12 on ensuring sustainable consumption and production patterns followed the publication in 2015 of e-waste statistics guidelines developed by the Partnership task group on measuring e-waste. In 2017, ITU, the United Nations University and the International Solid Waste Association formed the Global e-Waste Statistics Partnership, which aims to build capacity in countries to produce reliable and comparable e-waste statistics, build a global e-waste database to track developments over time and inform policymakers and industry. In November 2017, the Global e-Waste Statistics Partnership published the *Global e-Waste Monitor 2017*, a comprehensive report that provides a review of the e-waste challenge, including the fact that only 41 countries collect internationally comparable statistics on e-waste, and estimates for global e-waste quantities for 2017. The Global e-Waste Statistics Partnership aims to identify recycling opportunities and

<sup>5</sup> See <https://sustainabledevelopment.un.org/content/documents/14826ict.pdf>.

<sup>6</sup> See [https://sustainabledevelopment.un.org/content/documents/16673HLPF\\_2017\\_Presidents\\_summary.pdf](https://sustainabledevelopment.un.org/content/documents/16673HLPF_2017_Presidents_summary.pdf).

best practices in global e-waste management and is seeking to engage with other partners in the public and private sectors that are interested in addressing the global e-waste challenge.

12. Finally, the Partnership on Measuring Information and Communication Technology for Development held a session at the fifteenth World Telecommunication/ ICT Indicators Symposium, in November 2017, to discuss how the tracking of the digital economy can help countries achieve the Sustainable Development Goals. At the session, it was noted that digitization has transformed the world and that the digital economy has highly influenced trade, commerce, labour requirements and government policies, in particular policies relating to connectivity, effective use, skills, security and privacy and strategic coordination.<sup>7</sup>

#### **IV. Big data for information and communications technology statistics**

13. The growth of ICTs has resulted in a rapid increase in new data sources, including big data, in particular from the ICT industry. ITU is looking into innovative ways to utilize big data as a new data source and to overcome important data gaps. Discussions were held at various sessions of the World Telecommunication/ ICT Indicators Symposium between 2013 and 2017 and in the context of the work of the Expert Group on ICT Household Indicators. In addition, ITU plays an active role in the Global Working Group on Big Data for Official Statistics through its task teams on methodologies, skills and capacity-building and on the use of mobile phones, satellites and social media for official statistics.

14. As a key contribution to exploring new data sources for official statistics, in June 2016 ITU launched a pilot project on the theme “Big data for measuring the information society”. The project included pilot studies in six countries (Colombia, Georgia, Kenya, Philippines, Sweden and United Arab Emirates) that aimed to explore how big data from the ICT industry, in particular from telecommunication operators, can produce new indicators or complement existing ones to measure the information society. A document that includes big data ICT indicators and methodologies was produced as an outcome of the project. The experiences of the pilot countries and the methodology document can be used as references for countries that are interested in implementing similar activities.

15. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has also discussed the use of big data for ICT in education. At the International Forum on ICT and Education 2030, held in Qingdao, China, in 2017, participants noted that measuring and tracking data related to the availability and use of ICT is critical for making evidence-based policies. In particular, data disaggregated by gender, age, education level, socioeconomic status and other key variables can provide much clearer and more accurate indicators for measuring progress towards Sustainable Development Goal 4 on ensuring inclusive and quality education for all and promoting lifelong learning. In this context, the Qingdao statement of 2017 reaffirmed that policies and strategies are increasingly needed to ensure the secure, appropriate and ethical use of data, including safeguarding the privacy and confidentiality of personally identifiable information.

#### **V. Conclusions**

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<sup>7</sup> See <http://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2017/Programme.aspx>.

16. The need for more and better official ICT statistics to help to measure progress towards achieving the 2030 Agenda has been widely recognized. Countries will need to consider ICT indicators beyond the Sustainable Development Goal monitoring framework in order to adequately assess the impact of ICTs on their sustainable development. The Partnership's new task group on ICT for the Sustainable Development Goals will provide guidance to countries in this regard.

17. The measurement of the evolving digital economy in particular is an aspect of ICT statistics that has received increased attention from individual partners as part of the Partnership's mandate, reflected in the theme of the World Telecommunication/ICT Indicators Symposium in 2017. That work, in turn, contributes to knowledge-sharing within the Partnership, such as the UNCTAD *Information Economy Report 2017*,<sup>8</sup> and the *OECD Digital Economy Outlook 2017*.<sup>9</sup> New data needs for the digital economy will require that countries strengthen national coordination and include all stakeholders in order to improve data quality and availability to inform policy.

18. The Partnership will continue to review and update its list of ICT indicators, cooperate in developing new indicators and related methodology and contribute to the statistical development of countries by offering capacity-building assistance.

19. The Partnership recognizes the potential of big data produced by the evolving digital economy, in particular by technologies such as the Internet of Things, cloud computing and artificial intelligence. At the same time, issues of data access and sharing, data protection, privacy and security will have to be addressed, and national statistical systems will need to develop protocols to be able to leverage those new data sources.

20. Once again, the Partnership calls upon development partners to consider expanding their support for technical assistance for ICT statistics, in particular to train national statisticians and other producers and users of official ICT statistics, and to finance related data collection, analysis and dissemination.

21. The Partnership will submit its next report to the Statistical Commission in 2020, in accordance with the Commission's multi-year programme.

22. The Commission is invited to take note of the progress made with respect to ICT statistics.

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<sup>8</sup> Available from [http://unctad.org/en/PublicationsLibrary/ier2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/ier2017_en.pdf). Chapter II is devoted to the theme "Measuring the Evolving Digital Economy".

<sup>9</sup> Available from [www.oecd.org/sti/oecd-digital-economy-outlook-2017-9789264276284-en.htm](http://www.oecd.org/sti/oecd-digital-economy-outlook-2017-9789264276284-en.htm).

## Annex

### **New indicators on e-commerce (households and individuals)**

The Expert Group on ICT Household Indicators agreed that the following indicators would be included in the Manual for Measuring ICT Access and Use by Households and Individuals and that related data would be collected annually by ITU.

#### **Indicator 1: types of goods and services purchased online**

The following types of goods and services purchased online would be included as response categories (multiple choices possible):

- Books, magazines or newspapers
- Clothing, footwear, sporting goods or accessories
- Computer equipment or parts (including peripheral equipment)
- Computer or video games
- Computer software (includes upgrades and paid apps; excluding games)
- Cosmetics
- Financial products (including shares and insurance)
- Food, groceries, alcohol or tobacco
- Household goods (e.g. furniture, toys, etc.; excluding consumer electronics)
- ICT services (excluding software)
- Medicine
- Movies, short films or images
- Music products
- Photographic, telecommunications or optical equipment
- Tickets or bookings for entertainment events (sports, theatre, concerts, etc.)
- Travel products (travel tickets, accommodation, vehicle hire, transport services, etc.)

Target population: individuals who have purchased products over the Internet.

#### **Indicator 2: payment channels for online purchases**

The following types of payment channels would be included as response categories (multiple choices possible):

- Cash on delivery
- Credit card online
- Debit card or electronic bank transfer online
- Mobile money account (account connected to a mobile number)
- Online payment service (e.g. PayPal, Google Checkout)
- Prepaid gift card or online voucher
- Points from rewards or redemption programme (e.g. air miles)
- Other (e.g. bank check by post, etc.)

Target population: individuals who have purchased products over the Internet.

**Indicator 3: reasons for not purchasing online**

The following reasons for not purchasing online would be included as response categories (multiple choices possible):

- Not interested
- Prefer to shop in person
- Security concerns (e.g. about giving debit or credit card details)
- Privacy concerns (e.g. about giving personal details)
- Technical concerns (e.g. about websites, payment or delivery)
- Trust concerns (e.g. about warranties or receiving or returning products)
- Lack of confidence, knowledge or skills

Target population: individuals who have not purchased products over the Internet.

**Indicator 4: method of delivery**

The following methods of delivery would be included as response categories (multiple choices possible):

- Delivery directly to the buyer using regular postal services or other forms of delivery
- Pick up from point of sale or service point
- Online/electronic delivery by downloading from a website or through an application, software or other device (e.g. in-app purchases, streaming services, etc.)

Target population: individuals who have purchased products over the Internet.

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