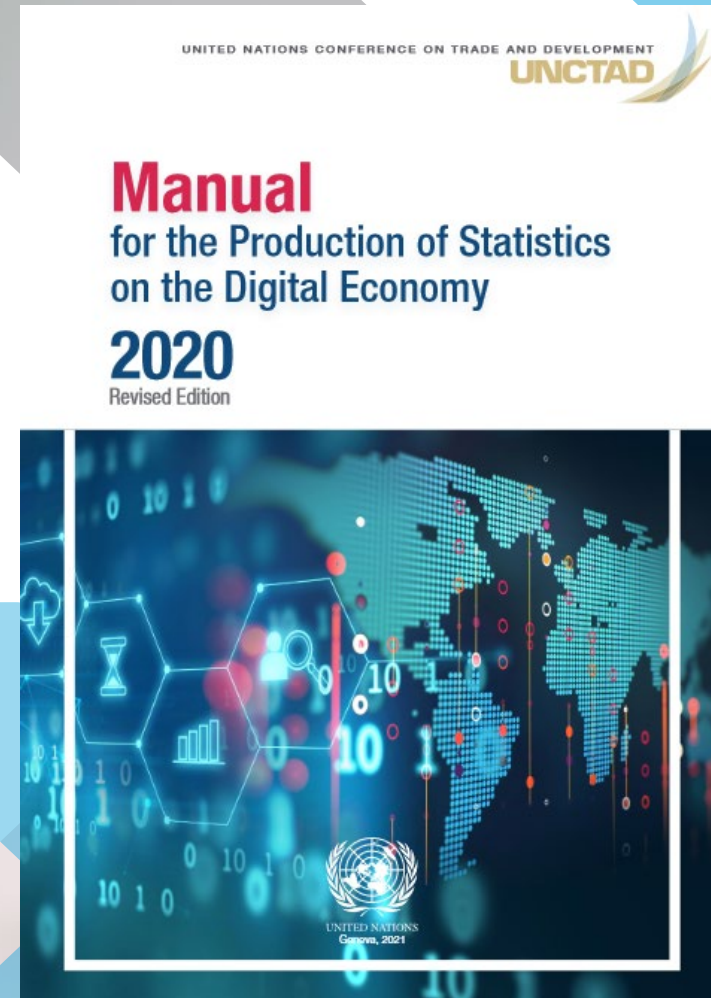


The ICT sector and ICT use

Manual for the Production of Statistics on the Digital Economy

5th International Seminar on Big Data for Official Statistics
Measuring the Digital Economy
29-31 May 2024, Xiamen, China

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E-commerce and the digital economy



Overview

1. Objectives and Structure of the Manual
2. Core indicators on ICT use by businesses
3. Core indicators on the ICT sector
4. What UNCTAD does

➤ What is the Manual?

- ◆ Intended primarily for **national statistical offices** and other producers of statistics;
 - However, it can be useful for data users (from government organisations, business associations, academic researchers, etc.) to better understand how the digital economy is measured

- ◆ It can be used by national statistical offices of **any country**
 - Countries may adapt the standards to their national specificities, such as organisation of the National Statistical System, resources for data collection,
 - Countries can give priority to the topics of their interest (adoption of ICT by businesses, ICT sector, ICT services, e-commerce, etc.) according to their level of ICT development

- ◆ It addresses the production of some of the **core ICT indicators**, a list validated by the United Nations Statistical Commission
 - Other topics not covered by the core list are also addressed in the Manual to help countries collect additional data

- ◆ The Manual is the basis for online or in-person training courses.

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➤ Annexes and other content

Core list of ICT indicators

- ICT infrastructure and access
- Access to, and use of, ICT by households and individuals
- Use of ICT by enterprises
- ICT sector
- Trade in ICT goods, ICT services and ICT-enabled services
- ICT in education
- E-government

Statistical methodology

- Estimation of proportions
- Imputation of missing data

Country examples and other examples

Model questionnaires

- UNCTAD questionnaire on the use of ICT by enterprises
- UNCTAD questionnaire on exports of ICT-enabled services
- OECD questionnaire on use of ICT by businesses
- Eurostat questionnaire on ICT use by businesses and e-commerce

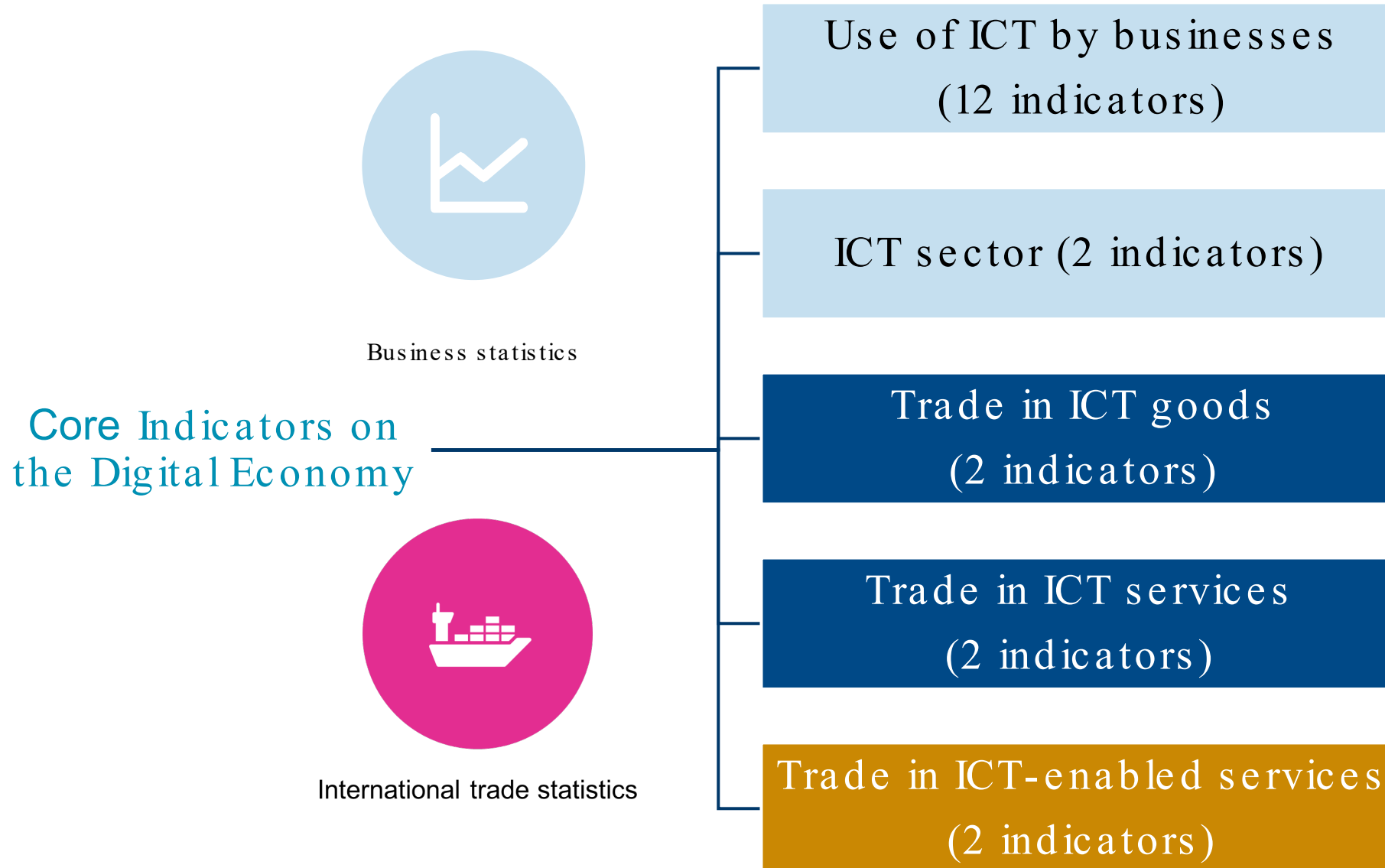
Statistical classifications and definitions

- ICT goods
- ICT services
- ICT sector
- ICT-enabled services (digitally delivered services)
- E-commerce

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➤ Core Indicators on the Digital Economy



Core indicators on ICT use by businesses

- ◆ Indicators B1 to B12 are used to measure the use of ICT by businesses (ICT demand).
- ◆ They can be collected through business surveys. A model questionnaire is proposed by UNCTAD.
- ◆ Model questions can be included in other business surveys, if there is no budget for a specific, stand-alone survey on the use of ICT in the business sector.



The Manual recommends the use of standard definitions, breakdowns and model questions

➤ Core indicators on use of ICT by businesses

- B1 Proportion of businesses using **computers**
- B2 Proportion of persons employed routinely using computers
- B3 Proportion of businesses using the **Internet**
- B4 Proportion of persons employed routinely using the Internet
- B5 Proportion of businesses with a **web presence**
- B6 Proportion of businesses with an **intranet**
- B7 Proportion of businesses **receiving orders** over the Internet
- B8 Proportion of businesses **placing orders** over the Internet
- B9 Proportion of businesses using the Internet by type of access
- B10 Proportion of businesses with a **Local Area Network**
- B11 Proportion of businesses with **an extranet**
- B12 Proportion of businesses using the Internet by type of activity

➤ Definition and calculation of the core indicators: B3 and B4

B3 =	Proportion of businesses using the Internet	=	Number of in-scope businesses using the Internet <i>during reference period</i>	← Numerator
			Total number of in-scope businesses <i>during reference period</i>	← Denominator
B4 =	Proportion of persons employed using the Internet	=	Number of in-scope persons employed routinely using the Internet <i>during reference period</i>	← Numerator
			Total number of persons employed by in-scope businesses <i>during reference period</i>	← Denominator

Indicators are expressed as percentages (%)

Definition and calculation of the core indicators: B9

- B9 is a disaggregation of B3.
- The response categories should allow grouping at least into: narrowband, fixed broadband, mobile broadband.
- B9 is expressed as a % of the total number of in-scope businesses using the Internet during the reference period

<p>B9 narrowband</p>	<p>Proportion of businesses using the Internet <i>with narrowband access</i></p>	<p>=</p>	$\frac{\text{Number of in-scope businesses using the Internet with narrowband access during reference period}}{\text{Total number of in-scope businesses using the Internet during reference period}}$	<p>← Numerator</p> <p>← Denominator</p>
<p>B9 fixed broadband</p>	<p>Proportion of businesses using the Internet <i>with fixed broadband access</i></p>	<p>=</p>	$\frac{\text{Number of in-scope businesses using the Internet with fixed broadband access during reference period}}{\text{Total number of in-scope businesses using the Internet during reference period}}$	<p>← Numerator</p> <p>← Denominator</p>
<p>B9 mobile broadband</p>	<p>Proportion of businesses using the Internet <i>with mobile broadband access</i></p>	<p>=</p>	$\frac{\text{Number of in-scope businesses using the Internet with mobile broadband access during reference period}}{\text{Total number of in-scope businesses using the Internet during reference period}}$	<p>← Numerator</p> <p>← Denominator</p>

Definition and calculation of the core indicators: B12

- B12 is a disaggregation of B3.
- The categories of response are proposed in the next slide.
- B12 is expressed as a % of the total number of in-scope businesses using the Internet during the reference period.

B12	Proportion of businesses using the Internet by type of activity	=	$\frac{\text{Number of in-scope businesses undertaking activity } j \text{ during the reference period}}{\text{Total number of in-scope businesses using the Internet during reference period}}$	← Numerator ← Denominator
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Definition and calculation of the core indicators: B12

E-business processes

Communicate

Access to information

- Getting information about goods or services, customers and suppliers
- Getting information from general government organizations
- Getting information about foreign markets

Sale and purchase

Communication

- Sending or receiving e-mail
- Telephoning over the Internet/VoIP or using video conferencing
- Use of instant messaging, bulletin boards
- Use of social media (such as Facebook, Twitter, WeChat and LinkedIn)

Automate processes

Interaction with government, providers and customers

- Internet banking
- Accessing other financial services
- Accessing cloud services (e.g., data storage, software as a service, etc.)
- Interacting with general government organizations, e.g., for paying taxes
- Marketing the company's goods and/or services online
- Providing customer services

Managing resources

Human resource management

- Internal or external

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➤ ICT sector: implications for economic statistics

- ◆ The ICT sector is defined as the economic activities producing ICT goods and services
- ◆ The use of international statistical classifications helps defining the sector by selecting economic activities (ISIC Rev.4) and products (HS22)
- ◆ The implementation of the ICT sector definition at country level could be difficult if the national industrial classification does not correspond well with the international classification
- ◆ The adoption of international statistical classifications should be a system-wide priority for National Statistical Systems in order to improve international comparability of statistics

 **The Manual recommends** the use of international statistical classifications for ICT statistics

➤ ICT sector: Manufacturing of ICT goods

Computers and peripheral equipment

- Computers
- Printers
- Monitors, other.

Communication equipment

- Telephones
- Radio transmission devices

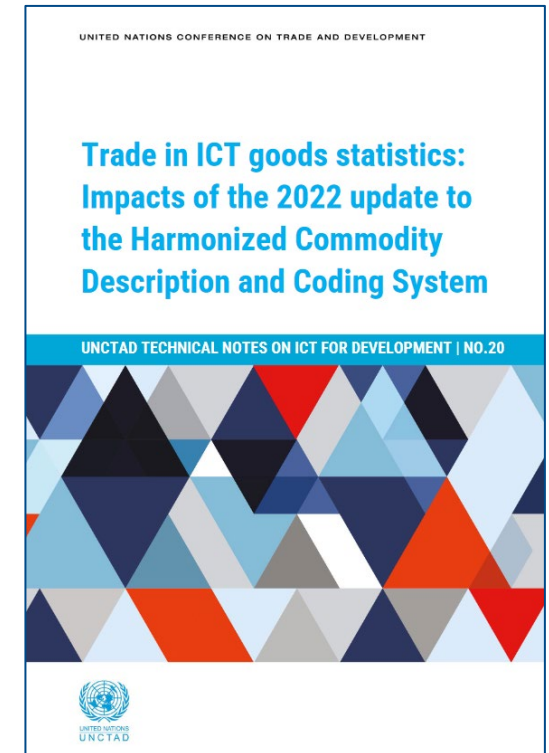
Consumer electronic equipment

- Sound and video devices

Electronic components

- Circuits
- Valves
- Transistors, etc.

Magnetic and optical media



https://unctad.org/system/files/official-document/tn_unctad_ict4d20_en.pdf

📍 ICT goods are classified according to the Harmonized System (World Customs Organization)

➤ ICT sector: Production of ICT services

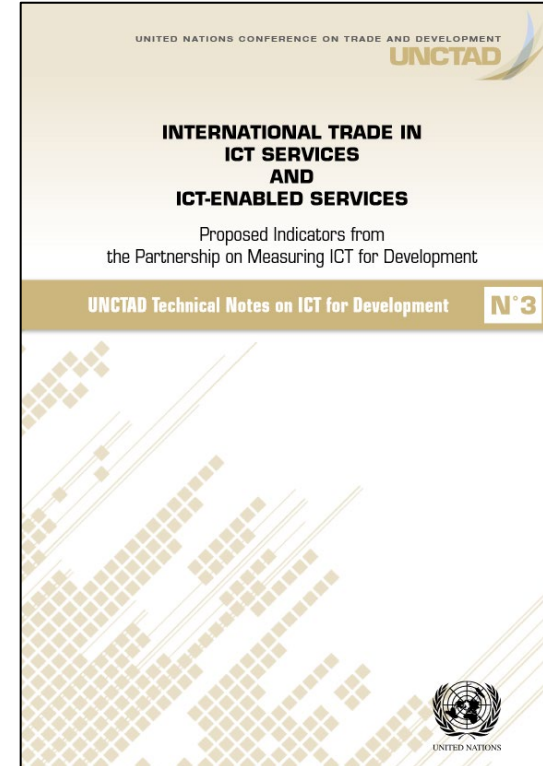
Software publishing

Telecommunications

Computer services
(programming , consultancy
and related activities)

Data processing , hosting
and related activities

Repair of computers and
communication equipment



https://unctad.org/system/files/official_document/tn_unctad_ict4d03_en.pdf



ICT services are classified according to the ISIC Rev.4

Definition and calculation of the core indicators: ICT1 and ICT2

- Value added is calculated in the framework of National Accounts, at factor costs, basic or producers' prices.
- The numerator and denominator should be calculated with the same methodology.

ICT1 =	Proportion of total business sector workforce involved in the ICT sector	=	$\frac{\text{Total of ICT sector workforce during reference period}}{\text{Total workforce in the business sector during reference period}}$	<p>← Numerator</p> <p>← Denominator</p>
ICT2 =	Value added in the ICT sector (as percentage of total business sector value added)	=	$\frac{\text{Value of ICT sector estimated value added during reference period}}{\text{Total value added of the business sector during reference period}}$	<p>← Numerator</p> <p>← Denominator</p>

Other core indicators on the ICT sector

- ◆ ICT 3: Imports of ICT goods as a percentage of total imports
- ◆ ICT 4: Exports of ICT goods as a percentage of total exports
- ◆ ICT 5: Imports of ICT services as a percentage of total imports
- ◆ ICT 6: Exports of ICT services as a percentage of total exports
- ◆ ICT 7: Imports of ICT-enabled services as a percentage of total imports
- ◆ ICT 8: Exports of ICT-enabled services as a percentage of total exports

 Can be calculated based on international trade statistics (UN COMTRADE database)

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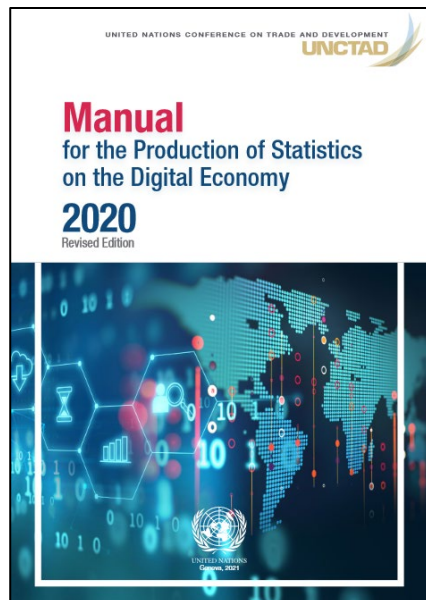
What UNCTAD does

- ◆ Assists NSOs in data collection, analysis, and dissemination, through **advisory services and training courses** (on demand).
- ◆ Gathers experts at the **Working Group on Measuring E-commerce and the Digital Economy**, to enable exchanges of experiences and discussions of methodological issues.
- ◆ Develops training material, guidelines, and other **technical documentation**.
- ◆ Publishes **digital economy tables** in the UNCTAD Statistical Portal (unctadstat.unctad.org).
- ◆ Conducts a biennial **compilation of the latest available statistics** on the digital economy reported by NSOs.

➤ Find out more

ecde@unctad.org

<https://unctad.org/topic/ecommerce> - and - digital - economy



https://unctad.org/system/files/official-document/dtlstict2021d2_en.pdf

Thank you

