Improving Sector Performance through Indicators and Benchmarking: OECD and ICT Measurement

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Why Measure ICT?

❑ Monitoring growth of information society and helping understand *how* ICTs impact on economic and social development.

- Policy analysis and dialogue: allow governments to make informed policy decisions for using ICTs as a tool for economic and social development.

- Evidence for benefits of ICT accumulating in developed countries, but lacking for developing countries.

- Facilitate international comparisons of ICT as a key social and economic enabler

- Enable communications regulators to undertake their tasks and assess sector performance

Telecommunication Indicators Methodology

- Policy interest in indicators coincided with increasing reform to telecommunication markets
- OECD Performance Indicators for Public Telecommunication Operators, 1990
  - Inform policy making and regulation (industry and finance sector are also major users) through benchmarking and comparisons
  - Network indicators and quality of service
  - Telecommunication tariff methodology/comparisons
- ITU – Telecommunication Indicators Handbook
  - World Telecommunication Indicators Meetings
  - World Telecommunication Development Reports

Supply Side Communication Indicators

- Regulation and market information
- Telecom Network Indicators (e.g. access lines, digitalisation)
- Investment (e.g. capex on networks)
- Services market (e.g. mobile revenue)
- Broadcasting and cable television (e.g. subscribers, households passed)
- Internet (e.g. hosts, secure servers, subscribers, broadband)
- Quality of Service (e.g. faults, repairs)
- Employment and productivity
- Telecommunication/Internet Tariffs

Tariff Indicators

- Fixed Telecoms
  - Business (small) and Residential
  - Basket approach (connection, line rental, calls)
  - Domestic, international, composite (including calls to mobile)
- Mobile
  - Low, medium, high user baskets
- Leased lines
- Dial-up (collection discontinued in OECD)
- Broadband
  - Price, advertised capacity (upstream/downstream), transfer allowance if applicable (i.e. flat rate or bit caps & shaping)
  - Quality of Service? (Network Neutrality?)
- Importance of time series

From mid 1990s Growing Policy Interest in ICT Demand Side Indicators and Measurement of E-commerce

- ❑ Increasing interest from National Statistical Organisations
- ❑ Creation of the OECD Working Party on Indicators for the Information Society (WPIIS)
- ❑ Measurement needs definitions and harmonised methodology
  - ● ICT sector (1998, 2002, revision 2006)
  - ● E-commerce (2000)
  - ● Model surveys of business and household use of ICT (2001, 2002, 2005)
  - ● ICT goods (2003, revision 2006)
  - ● ICT services (expected 2006)

The ICT <u>sector</u> principles

For *manufacturing* industries, the products of a candidate industry:

- Must be intended to fulfil the function of information processing and communication including transmission and display.
- Must use electronic processing to detect, measure and/or record physical phenomena or control a physical process.

☐ For *services* industries, the products of a candidate industry:

- Must be intended to enable the function of information processing and communication by electronic means.

ICT sector <u>manufacturing</u> activities based on ISIC Rev 3.1 (Rev.4 expected 2007)

3000   Office, accounting and computing machinery

3130   Insulated wire cable

3210   Electronic valves and tubes and other electronic components

3220   Television and radio transmitters and apparatus for line telephony and line telegraphy

3230   Television and radio receivers, sound or video recording or reproducing apparatus and associated goods

3312   Instruments and appliances for measuring, checking, testing, navigating and other purposes except industrial process equipment

3313   Industrial process equipment

ICT sector service activities based on ISIC Rev 3.1 (Rev.4 expected 2007)

5151   Wholesale of computers, computer peripheral equipment and software

5152   Wholesale of electronic and telecommunications parts and equipment

6420   Telecommunications

7123   Renting of office machinery and equipment (including computers)

72   Computer related activities

ICT <u>goods</u> guiding principle

- ☐ ICT goods must either be intended to fulfil the function of information processing and communication by electronic means, including transmission and display,

or

- ☐ Use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process

ICT *goods*

ICT goods, based on HS 2002

□ Broad categories based on six-digit HS categories

- telecommunications equipment
- computer and related equipment
- electronic components
- audio and video equipment
- other ICT goods

Telecom equipment	
8517	852790
852020	852910
852510	853110
852520	854420
852530	854470
852610	

Computer equipm.	
8471	847330

Electronic components	
850431	853224
850450	853230
850490	8533
852330	8534
852460	8540
852990	8541
853221	8542

Audio and video equipm.	
8518	852320
8519	852390
852010	852540
852032	852712
852033	852713
852039	852719
852090	852721
8521	852729
8522	852731
852311	852732
852312	852739
852313	8528

Other ICT goods	
846911	9024
847010	902620
847021	902710
847029	902730
847040	902740
847050	902750
847310	902780
847321	9028
847350	9029
852691	903010
852692	903020
901041	903031
901042	903039
901049	903040
9014	903082
901540	903083
901580	903110
901811	903120
901812	903130
901813	903141
901814	903180
901819	903190
902212	903210
902213	903220
902214	903289
902219	903290

ICT <u>services</u> guiding principle and services proposal

- For service industries, the products of a candidate industry must be intended to enable the function of information processing and communication by electronic means
- Examples from UN's Central Product Classification (CPC)
  - IT technical consulting services
  - IT design and development services
  - Hosting and IT infrastructure provisioning services
  - IT infrastructure and network management services
  - IT technical support services
  - Information and document transformation services
  - Internet access and backbone services
  - Internet telecommunication services
  - Software publishing
  - Re-sale of computer hardware and software
  - Rental and leasing of computer hardware
  - IT-related training services

Electronic commerce definitions

E-commerce transactions	OECD definitions	Guidelines for the Interpretation of the Definitions (WPIIS proposal April 2001)
BROAD definition	An **electronic transaction** is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over **computer-mediated networks**. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or off-line.	**Include**: orders received or placed on any online application used in automated transactions such as Internet applications, EDI, Minitel or interactive telephone systems.
NARROW definition	An **Internet transaction** is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over the **Internet**. The goods and services are ordered over the Internet, but the payment and the ultimate delivery of the good or service may be conducted on or off-line.	**Include**:orders received or placed on any Internet application used in automated transactions such as Web pages, Extranets and other applications that run over the Internet, such as EDI over the Internet, Minitel over the Internet, or over any other Web enabled application regardless of how the Web is accessed (e.g. through a mobile or a TV set, etc.) **Exclude**: orders received or placed by telephone, facsimile, or conventional e-mail.

OCDE OECD

Model surveys of household/individual use of ICT

□ Module A: **Household** access to ICT

- Access to computers, the Internet
- Type of Internet access
- Barriers to access/use

□ Module B: **Individual** use of ICT

- Use of computer, the Internet
- Place of access, Frequency of use
- Activities on the Internet (including e-commerce, e-government, downloading, etc.)
- Barriers to access/use
- Mobile phone use

Model surveys of <u>business</u> use of ICT

❒ Module A: General information about business' use of ICT

- Access to and use of computers
- Access to and use of the Internet and other technologies
- Security

❒ Module B: How the business uses ICT in its operations

- E-commerce
- Web site functionality
- Integration of business operations
- E-government

What do the terms Core and Non Core (Extended Core) mean?

16 Was the computer you (mainly) used to access the Internet at home protected by:
Population: all in-scope individuals who used a computer to access the Internet at home in the last 12 months

	Yes	No	Don't know
Virus checking or protection software?			
A firewall?			
Anti-spyware software			

OECD Guide to Measuring the Information Society

□ The Guide brings together WPIIS and other OECD work to date in the following areas:

- ICT products (goods and services, trade, prices)
- ICT infrastructure (telecommunications, the Internet)
- ICT supply (the ICT sector) including ICT patents
- ICT demand (by businesses, households/individuals)
- Electronic commerce and electronic business
- Electronic content
- Cross-cutting topics: e-government, trust in the online environment, digital divide, ICT skills and ICT in education
- Impacts of ICT

□ The Guide concludes with a "road ahead" chapter.

Annexes of the Guide

- Annex 1: WPIIS finalised standards and model surveys
- Annex 2: OECD output on the Information Society
- Annex 3: ICT statistics metadata and output information of member countries

  http://www.oecd.org/sti/ictmetadata

- Annex 4: Non-member activities
- Annex 5: Applicability of concepts in developing countries

Dissemination

☐ Communications Outlook
- www.oecd.org/sti/telecom

☐ Information Technology Outlook
- www.oecd.org/sti/information-economy

☐ STI Scoreboard (ICT Section)
- www.oecd.org/sti/scoreboard

☐ Key ICT Indicators
- www.oecd.org/sti/ictindicators

☐ Scoping Study for the Measurement of Trust in the Online Environment
- www.oecd.org/sti/measuring-infoeconomy

THANK YOU!

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